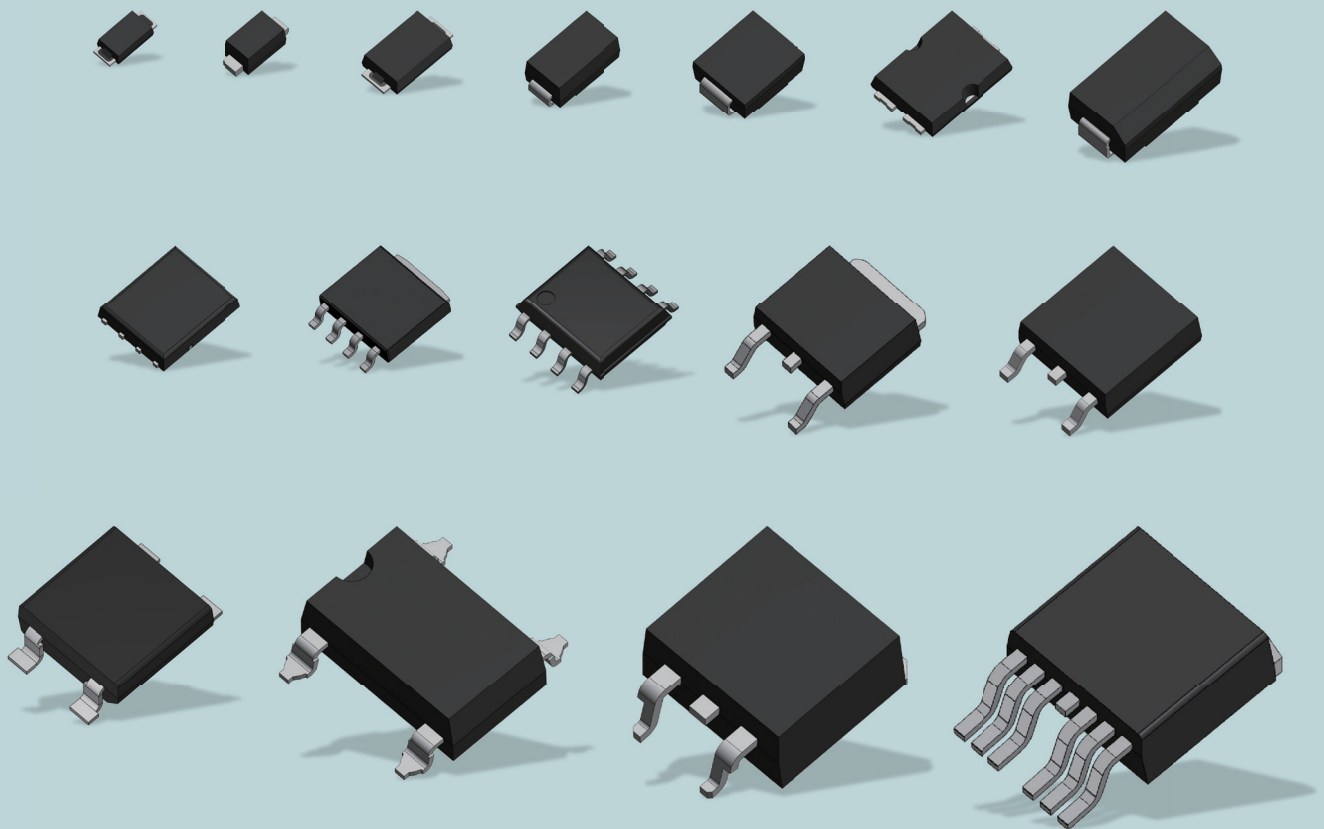
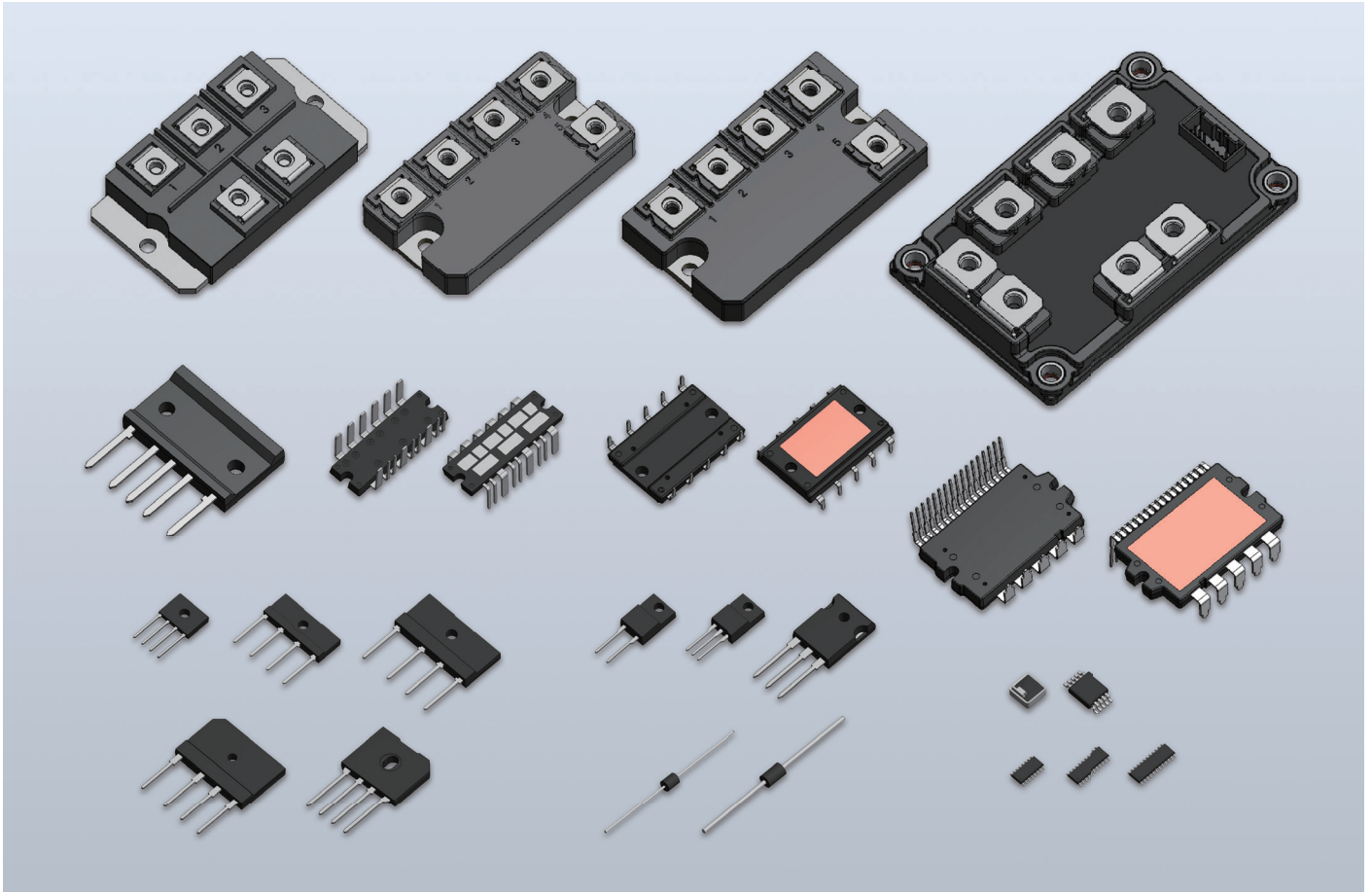


Semiconductor Product Catalog



ShinDengen /

New power. Your power.



Notes

- ⚠ If you wish to use any such product, please be sure to refer to the specifications issued by Shindengen.
- ⚠ All products described or contained herein are designed with a quality level intended for use in standard applications requiring an ordinary level of reliability. If these products are to be used in equipment or devices for special or specific applications requiring an extremely high grade of quality or reliability in which failures or malfunctions of products may directly affect human life or health, a local Shindengen office must be contacted in advance to confirm that the intended use of the product is appropriate. Shindengen products are grouped into the following three applications according to the quality grade.
 - Standard applications
Computers, office automation and other office equipment, communication terminals, test and measurement equipment, audio/visual equipment, amusement equipment, consumer electronics, machine tools, personal electronic equipment, industrial equipment, etc.
 - Special applications
Transportation equipment (vehicles, ships, etc.), trunk-line communication equipment, traffic signal control systems, anti-disaster/crime systems, safety equipment, medical equipment, etc.
 - Specific applications
Nuclear reactor control systems, aircraft, aerospace equipment, submarine repeaters, life support equipment and systems, etc.
- ⚠ Although Shindengen continuously endeavors to enhance the quality and reliability of its products, customers are advised to consider and take safety measures in their design, such as redundancy, fire containment and anti-failure, so that personal injury, fires, or societal damages can be prevented.
- ⚠ Please note that all information described or contained herein is subject to change without notice due to product upgrades and other reasons. When buying Shindengen products, please contact the Company's offices or distributors to obtain the latest information.
- ⚠ Shindengen shall not bear any responsibility with regards to damages or infringement of any third-party patent rights and other intellectual property rights incurred due to the use of information on this website.
- ⚠ The information and materials on this website neither warrant the use of Shindengen's or any third party's patent rights and other intellectual property rights, nor grant license to such rights.
- ⚠ In the event that any product described or contained herein falls under the category of strategic products controlled under the Foreign Exchange and Foreign Trade Control Law of Japan, exporting of such products shall require an export license from the Japanese government in accordance with the above law.
- ⚠ No reprinting or reproduction of the materials on this website, either in whole or in part, is permitted without proper authorization from Shindengen.

P3-8	INDEX
P9-12	GENERAL RECTIFYING DIODES
P13-22	BRIDGE DIODES
P23-32	SCHOTTKY BARRIER DIODES
P33-38	FAST RECOVERY DIODES
P39-40	THYRISTORS
P41-42	SIDACs
P43-44	TRIACs
P45-46	SURGE ABSORBERS
P47-50	TVS (Transient Surge Suppressor)
P51-58	POWER MOSFETs
P59-60	POWER MODULES
P61-64	POWER ICs
P65-86	PACKAGE LIST • OUTLINE DIMENSIONS
P87-88	PACKING SPECIFICATION
P89-90	NOTES • How to Order • Outline of Packing Form • About AEC-Q101 & Automotive Grade SALES OFFICES

INDEX

Type No.	Page	Type No.	Page	Type No.	Page	Type No.	Page	Type No.	Page	Type No.	Page	Type No.	Page	Type No.	Page
D1F60	10	D2L20U	36	D5FY4R5ST	26	D15FY4R5SY	26	D40FDC15ST	28	DF10SC4M	28	G1V(A)13C	42	KD8SF60	44
D1F60A	10	D2L40U	36	D5FY4R5SY	26	D15FY6ST	26	D40XB80	16	DF10SC6	28	G1V(A)14C	42	KD8SF60S	44
D1FE60	10	D2S4M	26	D5FY6ST	26	D15FY6SY	26	D40XB100	16	DF10SC9	28	G1V(A)15C	42	KD8SF80	44
D1FH3	24	D2S6M	26	D5FY6SY	26	D15FY10ST	26	D40XBA80	16	DF15JC10	28	G1V(A)20C	42	KD12SF60	44
D1FJ4	24	D2SB60	16	D5FY10ST	26	D15FY10SY	26	D45JCT120V	20	DF15NC15	28	G1V(B)20C	42	KD12SF60S	44
D1FJ8	24	D2SB60A	16	D5FY10SY	26	D15FY15ST	26	D45JCT160V	20	DF15SC4M	28	G1V(B)22C	42	KD12SF80	44
D1FJ8A	24	D2SBA60	16	D5FY15ST	26	D15JAB60V	16	D45XB80	16	DF15VD60	12	G1V(B)24C	42	KD16SF60	44
D1FJ10	24	D3CE4R5ST	24	D5FY20SN	26	D15JAB80V	16	D45XT80	20	DF16VC60R	12	G1VL8C	42	KD16SF60A	44
D1FK60	34	D3CE4S	24	D5FY60K	34	D15XB60	16	D45XT160	20	DF20JC10	28	G1VL10C	42	KD16SF60S	44
D1FK70	34	D3CE6S	24	D5SB60	16	D15XB60H	16	D50JCB80V	16	DF20L60	34	G1VL15C	42	KD16SF80	44
D1FK100	34	D3CE6ST	24	D5SB80	16	D15XB80	16	D50XB80	16	DF20L60U	34	G1VL20C	42	KD20SF60	44
D1FK120	34	D3CE10ST	24	D5SBA60	16	D15XB80H	16	D70JHB80V	18	DF20LC20US	38	G1VL22C	42	KD20SF60A	44
D1FK120P	34	D3CE12ST	24	D6FEC4ST	28	D15XB100	16	D75JFT80V	20	DF20LC30	38	G1VL24C	42	KD20SF60S	44
D1FL20U	34	D3CE15ST	24	D6FEC10ST	28	D15XBN20	22	D100JHT80V	20	DF20NC15	28	K1V10	42	KD20SF80	44
D1FL40U	34	D3CE20LUS	34	D6FEC12ST	28	D15XBS6	22	D100JHT120V	20	DF20SC4M	28	K1V11	42	KD25SF60A	44
D1FM3	24	D3CE60K	34	D6FEC15ST	28	D20FD60LU	34	D100JHT160V	20	DF20SC9M	28	K1V12	42	KL3L07	46
D1FS4	24	D3CE60V	10	D6JBB60V	16	D20FDC10ST	28	D120SC4M	32	DF25SC6M	28	K1V14	42	KL3N14	46
D1FS4A	24	D3CE60VE	10	D6JBB80V	16	D20FDC15ST	28	D120SC6M	32	DF25V60	10	K1V22	42	KL3R20	46
D1FS6	24	D3F60	10	D6SB60L	16	D20FDC20L	38	D180SC4M	32	DF30JC4	28	K1V22(W)	42	KL3Z07	46
D1FS6A	24	D3FE60	10	D6SB80	16	D20FDC20LUS	38	D180SC6M	32	DF30JC6	28	K1V24	42	KL3Z18	46
D1FT4	24	D3FJ10	24	D6SBN20	22	D20FR4ST	26	D240SC4M	32	DF30JC10	28	K1V24(W)	42	KP20NU11	46
D1FT4A	24	D3FK60	34	D8FD60LUS	34	D20FR4R5S	26	D240SC6M	32	DF30NC15	28	K1V26	42	KP40NU11	46
D1FT6	24	D3FK120	34	D8JBB60V	16	D20XB60	16	D360SC4M	32	DF30SC3ML	28	K1V26(W)	42	KP40RU22	46
D1FT6A	24	D3FS4A	24	D8JBB80V	16	D20XB80	16	D360SC6M	32	DF30SC4M	28	K1V36(W)	42	KU4F8	46
D1FT10	24	D3FS6	24	D10FDC10ST	28	D20XBS6	22	DE3L20UA	34	DF40SC3L	28	K1V38(W)	42	KU4F12	46
D1FT10A	24	D3S4M	26	D10FR60LA	34	D25FD60V	10	DE3S4M	26	DF40SC4	28	K1V(A)10	42	KU5S31NS	46
D1FT15A	24	D3S6M	26	D10FR60V	10	D25JAB60V	16	DE3S6M	26	DG1H3	24	K1V(A)11	42	KU10L08	46
D1N60	10	D3SB60	16	D10FY4R5ST	26	D25JAB80V	16	DE5L60A	34	DG1H3A	24	K1V(A)12	42	KU10N14	46
D1N80	10	D3SB80	16	D10FY4R5SY	26	D25XB60	16	DE5L60U	34	DG1J10A	24	K1V(A)16	42	KU10NU11	46
D1NF60	36	D3SBA60	16	D10FY6ST	26	D25XB80	16	DE5LC20U	38	DG1M3	24	K1VZL09	42	KU10NU13	46
D1NK60	36	D4F60	10	D10FY6SY	26	D25XB100	16	DE5S4M	26	DG1M3A	24	K1VZL20	42	KU10R23NS	46
D1NK100	36	D4SB60L	16	D10FY10ST	26	D25XBA80	16	DE5S6M	26	DG1N15A	24	KC3FB40H	40	KU10R27NS	46
D1NL20U	36	D4SB80	16	D10FY10SY	26	D30FD60K	34	DE5SC3ML	28	DG1S4	24	KC5FB40H	40	KU10R29NS	46
D1NL40U	36	D4SBL20U	22	D10FY15ST	26	D30FDC4S	28	DE5SC4M	28	DG1S6	24	KC5FB60H	40	KU10S31NS	46
D1NS4	26	D4SBN20	22	D10FY60VE	10	D30FDC10ST	28	DE5SC6M	28	DG1S6A	24	KC5FB60HR	40	KU10S35NS	46
D1NS6	26	D4SBS4	22	D10JBB60V	16	D30FDC15ST	28	DE5VE40	10	DL04-18F1	48	KC5FB60HRT	40	KU15N14	46
D1UBA80	14	D4SBS6	22	D10JBB80V	16	D30JCB100K	22	DE10S3L	26	DL04-33F1	48	KC5FB60HV	40	LK25XB60	22
D2CE80K	34	D5CE4R5ST	24	D10SBS4	22	D30JCT120V	20	DE10SC3L	28	DL04-36F1	48	KC5SF60HRT	40	LL15XB60	22
D2CF60K	34	D5CE4S	24	D10XB60	16	D30VC60	12	DE10SC4	28	DL20B-27F2	48	KC8SF80	40	LL25XB60	22
D2F60	10	D5CE6ST	24	D10XB60H	16	D30XB80	16	DF5VD60	12	DL20B-30F2	48	KD3FB60	44	LM25KBV60FR	22
D2FK60	34	D5CE10ST	24	D10XB80	16	D30XBN20	22	DF8L60US	34	DL20B-33F2	48	KD3SF60	44	LM30KBV60FR	22
D2FL20U	34	D5CE12ST	24	D15FR4ST	26	D30XT80	20	DF10L60	34	DL20B-36F2	48	KD3SF60E	44	LN1F60	10
D2FL40U	34	D5CE15ST	24	D15FR60LA	34	D35XB80	16	DF10LC20U	38	G1V(A)8C	42	KD5SF60	44	LN1WBA60	22
D2FS4	24	D5FE60	10	D15FR60V	10	D35XBA80	16	DF10LC30	38	G1V(A)10C	42	KD5SF60S	44	LN4SB60	22
D2FS6	24	D5FEC3SH	28	D15FY4R5ST	26	D40FDC10ST	28	DF10NC15	28	G1V(A)12C	42	KD5SF80	44	LN6SB60	22

INDEX

Type No.	Page	Type No.	Page	Type No.	Page	Type No.	Page	Type No.	Page	Type No.	Page	Type No.	Page	Type No.	Page
LN15XB60	22	MG032B420010A	60	P5B52HP2	58	P20LF4QTKD	56	P38LF6QN	52	P70LF4QL	52	S1NBB80	14	S20LC40UV	38
LN15XB60H	22	MG038A200080A	20	P5F50HP2	58	P21F28HP2	58	P38LF6QNK	52	P70LF4QLK	52	S1NBC60	14	S20LC60UST	38
LN25XB60	22	MG038B150080A	20	P5F60HP2	58	P22F10SN	54	P39LF6QTKD	56	P70LF4QN	52	S1NBC80	14	S20LC60USV	38
M1F60	10	MG038C200160A	20	P6B28HP2	58	P22FE4SBK	54	P40B6SL	54	P70LF4QNK	52	S1WB(A)60	14	S20SC9MT	30
M1F80	10	MG038D150160A	20	P6B40HP2	58	P23F40HP2FM	58	P40B6SLK	54	P72LF7R5SL	52	S1WB(A)60B	14	S20SC65WV	30
M1FE40	10	MG048A150004A	60	P6B52HP2	58	P23LA10SL	52	P40B10SL	54	P72LF7R5SLK	52	S1WB(A)80	14	S20VT60	20
M1FE60	10	MG048B100006A	60	P6F50HP2	58	P24B4SB	54	P40B10SN	54	P72LF7R5SN	52	S1ZAS4	32	S20VT80	20
M1FH3	24	MG055A	60	P7F60HP2	58	P24B4SBK	54	P40F10SN	54	P72LF7R5SNK	52	S1ZB60	14	S20VTA60	20
M1FJ4	24	MG055B	60	P7F90VX3	58	P24B15SL	54	P40F12SN	54	P74LF4PQLK	56	S1ZB80	14	S20VTA80	20
M1FK60	34	MG055F	60	P8B10SB	54	P24LF4QLK	52	P40LF12SL	52	P82F7R5SN	54	S2K100	36	S20WB60	18
M1FL20U	34	MG055J	60	P8B10SBK	54	P24LF4QMK	52	P40LF12SLK	52	P85GC28HP2F	58	S2L20U	36	S20WB80	18
M1FL40U	34	MG060B075080A	20	P8B28HP2	58	P24LF4QNK	52	P40LF12SN	52	P86F6SN	54	S2L40U	36	S25VB60	18
M1FM3	24	MG060C100080A	20	P8B30HP2	58	P25B6EB	54	P40LF12SNK	52	P88LF6GMK	52	S2L60	36	S25VB80	18
M1FS4	24	MG060E075160A	20	P8F28HP2	58	P25LA12SL	52	P41LF4QTKD	56	P90LF6GLK	52	S2NBC100	14	S30K60T	36
M1FS6	24	MG061B150080A	20	P8F50HP2	58	P25LF12SL	52	P42F6EN	54	P92LG20GNK	54	S2V60	10	S30K60V	36
M2F60	10	MG061C200080A	20	P8FE10SBK	54	P25LF12SLK	52	P46LF7R5SL	52	P96LF4PQLK	56	S2V80	10	S30K100V	36
M2FH3	24	MG061D100160A	20	P9B30HP2F	58	P25LF12SN	52	P46LF7R5SLK	52	P98LF6QL	52	S2VB60	18	S30SC4MT	30
M2FL20U	34	MG061E150160A	20	P9B40HP2	58	P25LF12SNK	52	P46LF7R5SN	52	P98LF6QLK	52	S2WB(A)80	14	S30SC6MT	30
M2FM3	24	MG061F200160A	20	P10B28HP2	58	P26B10SL	54	P46LF7R5SNK	52	P98LF6QN	52	S3K60	36	S30TC15T	30
M3F60	10	MG073A	18	P10F50HP2	58	P26B10SLK	54	P50F10SN	54	P98LF6QNK	52	S3L20U	36	S30V60T	12
M3FE40	10	MH2501SC	64	P10F60HP2	58	P26B10SN	54	P50LF4QTKD	56	P104LG20GNK	54	S3L40U	36	S30V80V	12
M3FE60	10	MH2511SC	64	P12F60HP2	58	P26F28HP2	58	P50LF10SL	52	P105LF4QL	52	S3L60	36	S30VT60	20
M3FL20U	34	MS1003SH	64	P12FE7R5SBK	54	P26FE10SLK	54	P50LF10SLK	52	P105LF4QLK	52	S3V60	10	S30VT80	20
MCZ5203SE	64	MS1004SH	64	P12LF10SLKD	56	P26LF6GLK	52	P50LF10SN	52	P105LF4QN	52	S3V80	10	S30VT160	20
MCZ5205SE	64	MS1007SH	64	P13F28HP2	58	P30B10EL	54	P50LF10SNK	52	P105LF4QNK	52	S3V100D	10	S30VTA60	20
MCZ5207SG	64	MV1001SC	62	P13F50HP2	58	P30FE4SLK	54	P54B4SLK	54	P120LF6GLK	52	S3WB60	18	S30VTA80	20
MCZ5208SG	64	MV1002SC	62	P14FE6SBK	54	P30FE6SLK	54	P54B4SN	54	P120LF6GMK	52	S4VB60	18	S30VTA160	20
MCZ5209SN	64	MV1011SC	62	P15F50HP2	58	P30FE7R5SLK	54	P55F6EN	54	P120LG20GNK	54	S5VB60	18	S40HC1R5T	30
MCZ5211ST	64	MV1012SC	62	P15F60HP2	58	P30LA10SL	52	P56LA4SN	52	P130LG10GN	54	S10VB60	18	S40T15V	26
MCZ5216ST	64	MV2002SG	62	P15F60HP2F	58	P30W60HP2V	58	P56LF4PQLK	56	P130LG10GNK	54	S10VT60	20	S50VB60	18
MCZ5601SC	64	MV2052SG	62	P15LA12SL	52	P32B12SLK	54	P56LF6GMK	52	P140LF4QL	52	S10VT80	20	S50VB80	18
MCZ5606SC	64	P0R5B60HP2	58	P15LF6QTKD	56	P32B12SN	54	P58LF6GLK	52	P140LF4QLK	52	S10VTA60	20	S60HC1R5T	30
MCZ5607SC	64	P1B52HP2	58	P16B6SB	54	P32F12SN	54	P60B4EL	54	P140LF4QN	52	S10VTA80	20	S60HC3T	30
MF2003SV	64	P1B90VX3K	58	P16B6SBK	54	P32LF10SL	52	P60B4SN	54	P140LF4QNK	52	S10WB60	18	S60JC10V	30
MF2007SW	64	P1FE90VX3	58	P17F28HP2	58	P32LF10SLK	52	P60B6EL	54	P168LG10GN	54	S15VB60	18	S60L120V	36
MG001AK028060A	60	P1R5B40HP2	58	P17LF10SLKD	56	P32LF10SN	52	P60B6EN	54	P168LG10GNK	54	S15VT60	20	S60SC3LT	30
MG001AL030060A	60	P2B60HP2F	58	P18LA12SL	52	P32LF10SNK	52	P60B6SN	54	P170FZ6QNKA	54	S15VT80	20	S60SC4MT	30
MG031B090004A	60	P2R5B52HP2F	58	P18LF6QLK	52	P33LF6QLKD	56	P64LF6QL	52	P200LG10GN	54	S15VTA60	20	S60SC6MT	30
MG031E120004A	60	P3B28HP2	58	P18LF6QNK	52	P33LF6QTKD	56	P64LF6QLK	52	P232LG10GN	54	S15VTA80	20	S90T15V	26
MG031G148004A	60	P3F60HP2	58	P19LA10SL	52	P34F6EL	54	P64LF6QN	52	P232LG10GNK	54	S15WB60	18	SF3K60M	36
MG031L080006A	60	P4B40HP2	58	P20B12SL	54	P36F25HP2	58	P64LF6QNK	52	P240FZ4QLA	54	S20K60T	36	SF3L60U	36
MG031MC148004A	60	P4B60HP2F	58	P20B12SLK	54	P36F28HP2	58	P66F7R5SN	54	P240FZ4QNKA	54	S20K100V	36	SF5K60M	36
MG031MD110006A	60	P4F60HP2	58	P20B12SN	54	P37LG65W3S	58	P66F7R5SNK	54	S1NAD80	12	S20LC20UST	38	SF5L40UM	36
MG031N110006A	60	P4F90VX3	58	P20F50HP2	58	P38LF6QL	52	P70F5EN	54	S1NB60	14	S20LC30T	38	SF5L60U	36
MG032A4207R5A	60	P5B50HP2F	58	P20FE12SLK	54	P38LF6QLK	52	P70F7R5EN	54	S1NB80	14	S20LC40UT	38	SF5LC40UM	38

INDEX











Type No.	Page	Type No.	Page	Type No.	Page	Type No.	Page
SF8K60M	36	SG30TC12M	30	ST04-16F1	48	US15KB80R	16
SF8K60USM	36	SG30TC15M	30	ST04-18F1	48	US15KB80HR	16
SF10K60M	36	SG40TC10M	30	ST04-20F1	48	US20KB80R	16
SF10KC60M	38	SG40TC12M	30	ST04-24F1	48	US20KB80HR	16
SF10L60AM	36	ST02-12G1	48	ST04-27F1	48	US25KB80R	16
SF10L60MSM	36	ST02-14G1	48	ST04-30F1	48	US25KB80HR	16
SF10L60MVM	36	ST02-16G1	48	ST04-33F1	48	US30KB80R	16
SF10L60U	36	ST02-18G1	48	ST04-36F1	48	US30KBV80FR	16
SF10LC40UM	38	ST02-20G1	48	ST04-39F1	48	VR61F1	46
SF20K60M	36	ST02-24G1	48	ST06-18CE	48		
SF20KC60M	38	ST02-27G1	48	ST06-27CE	48		
SF20L60AM	36	ST02-30G1	48	ST06-30CE	48		
SF20L60MSM	36	ST02-33G1	48	ST06-33CE	48		
SF20L60MVM	36	ST02-36G1	48	ST06-36CE	48		
SF20L60U	36	ST02-39G1	48	ST06-39CE	48		
SF20LC30M	38	ST02-43G1	48	ST20-18FY	48		
SG5L20USM	36	ST02-47G1	48	ST20-27F2	48		
SG5LC20USM	38	ST02-58G1	48	ST20-27FY	48		
SG5S4M	26	ST02-75F1	48	ST20-30F2	48		
SG5S6M	26	ST02-82F1	48	ST20-30FY	48		
SG5S9M	26	ST02-100F1	48	ST20-33F2	48		
SG8SC4M	30	ST02-120F1	48	ST20-33FY	48		
SG10L20USM	36	ST02-140F1	48	ST20-36F2	48		
SG10LC20USM	38	ST02-170F1	48	ST20-36FY	48		
SG10SC3LM	30	ST02-200F1	48	ST20-39FY	48		
SG10SC4M	30	ST02-280F1	48	ST20-47F2	48		
SG10SC6M	30	ST02-320F1	48	ST60-40MF	50		
SG10SC9M	30	ST02D-82	50	ST60-48MF	50		
SG10TC15M	30	ST02D-140	50	ST70-22MF	50		
SG15SC4M	30	ST02D-140F2	50	ST70-27F	50		
SG15SC6M	30	ST02D-170	50	ST70-27FZ	50		
SG20JC6M	30	ST02D-170F2	50	ST70-27MF	50		
SG20LC20USM	38	ST02D-200	50	ST70-30MF	50		
SG20SC3LM	30	ST03-43F1	48	ST80-14MF	50		
SG20SC4M	30	ST03-47F1	48	UD2KB80	16		
SG20SC6M	30	ST03-58F1	48	UD2KB80H	16		
SG20SC9M	30	ST03-68F1	48	UD3KB80	16		
SG20TC10M	30	ST03-240F1	48	UD3KB80H	16		
SG20TC12M	30	ST03D-82	50	UD4KB80	16		
SG20TC15M	30	ST03D-140	50	UD6KBA80	16		
SG30JC6M	30	ST03D-170	50	UD6KBA80H	16		
SG30SC3LM	30	ST03D-200	50	UD8KBA80	16		
SG30SC4M	30	ST03DH-240	50	US8KB80R	16		
SG30SC6M	30	ST04-12F1	48	US8KBA80R	16		
SG30TC10M	30	ST04-14F1	48	US10KB80R	16		




GENERAL RECTIFYING DIODES

General Rectifying Diodes are defined as high-voltage and PN junction type devices.

These devices utilize our original glass passivation which is physically stable with a superior structure for resistance against heat and humidity. Variations are available for breakdown voltage up to 800V and output current from 1 to 30A.

Single

Surface Mount								
Package	JEDEC Code JEITA Code House Name	Fig.	IF (AV) [A]	VRRM [V]			Remarks	
				400	600	800		
 3.9 × 1.8 × 1.4(mm)	DO-219AA similar M1F	B2	1		M1F60 M1FE60	M1F80	① — >— ②	
			2	M1FE40				
 5.0 × 2.5 × 2.0(mm)	DO-214AC 1F	B3-1	1		D1F60 D1FE60			
			1.1		LN1F60			
			1.2		D1F60A			
 4.7 × 2.4 × 0.98(mm)	SC-110B CE	B5-1	3		D3CE60V			
			3.5		D3CE60VE			
 5.1 × 3.75 × 2.0(mm)	DO-214AA similar M2F	B6	1.2		M2F60			
			3	M3FE40	M3F60 M3FE60			
 7.6 × 4.0 × 2.8(mm)	DO-214AA similar 2F	B9-1	1.4		D2F60			
			3		D3F60 D3FE60			
			4		D4F60			
			5		D5FE60			
 9.5 × 6.6 × 2.65(mm)	SC-63 E-pack	G1-5	5	DE5VE40				①④ — >— ②③ N.C.
 6.5 × 4.5 × 1.1(mm)	TO-277A similar FY	G4-1	10		D10FY60VE			① — >— ②③
 9.6 × 6.6 × 2.3(mm)	TO-252AA similar FR	G5	10		D10FR60V		① — >— ②④ ③ N.C.	
			15		D15FR60V			
 13.2 × 10.2 × 4.7(mm)	SC-83 similar STO-220	H1-2	25		DF25V60		①②④ — >— ③	
 13.2 × 10.2 × 4.6(mm)	SC-83 similar FD	H2-1	25		D25FD60V		① — >— ②④ ③ N.C.	

Axial							
Package	JEDEC Code JEITA Code House Name	Fig.	IF (AV) [A]	VRRM [V]			Remarks
				400	600	800	
 3.0 × φ 2.6(mm)	AX057	A1	1		D1N60	D1N80	① — >— ②
 7.0 × φ 4.4(mm)	AX10	A5-1	1.7		S2V60	S2V80	
 7.0 × φ 4.4(mm)	AX14	A7	3			S3V100D	
			3.5		S3V60	S3V80	

Single

Surface Mount															
JEDEC Code JEITA Code House Name	Package	Fig.	Type No.	Absolute Maximum Ratings					Electrical Characteristics				Halogen free	Based on AEC-Q101	Automotive
				VRRM [V]	IF (AV) [A]	Conditions Ta [°C]	IFSM [A]	Tj [°C]	Vf (max) [V]	Conditions IF [A]	IR (max) Vr=VRRM [μA]	VESD (typ) [kV]			
DO-219AA similar M1F	B2		M1F60	600	1	25	25	150	1.10	1	10	—	—	—	○
			M1FE60	600	1	129 *1	30	150	1.10	1	10	25	—	○	○
			M1F80	800	1	25	25	150	1.10	1	10	—	—	—	○
			M1FE40	400	2	103 *2	25	150	1.10	1	10	—	—	—	○
DO-214AC 1F	B3-1		D1F60	600	1	25	25	150	1.10	1	10	—	—	—	○
			D1FE60	600	1	126 *1	30	150	1.10	1	10	25	—	○	○
			LN1F60 *3	600	1.1	25	25	150	1.05	0.8	10	—	—	—	○
			D1F60A	600	1.2	25	45	150	0.97	1.2	10	—	—	—	○
SC-110B CE	B5-1		D3CE60V	600	3	101 *1	50	150	1.10	3	10	—	—	—	○
			D3CE60VE	600	3.5	93 *1	60	-55 to 150	1.10	3.5	10	25	—	○	■
DO-214AA similar M2F	B6		M2F60	600	1.2	51	50	150	0.97	1.2	10	—	—	—	○
			M3FE40	400	3	76 *1	75	150	1.10	3	10	30	—	○	○
			M3F60	600	3	100 *1	90	150	1.05	3	10	—	—	—	○
			M3FE60	600	3	76 *1	90	150	1.05	3	10	25	—	○	○
DO-214AA similar 2F	B9-1		D2F60	600	1.4	25	60	150	1.05	1.4	10	—	—	—	○
			D3F60	600	3	80 *1	150	150	1.05	3	10	—	—	—	○
			D3FE60	600	3	105 *1	150	150	1.05	3	10	25	—	○	○
			D4F60	600	4	68 *1	200	150	0.95	4	10	—	—	—	○
			D5FE60	600	5	82 *1	300	150	0.95	5	10	25	—	○	○
SC-63 E-pack	G1-5		DE5VE40	400	5	130 *2	80	150	1.00	5	10	30	—	—	■
TO-277A similar FY	G4-1		D10FY60VE	600	10	120 *1	220	-55 to 150	1.10	10	10	25	○	○	○
TO-252AA similar FR	G5		D10FR60V	600	10	130 *2	200	-55 to 150	1.05	10	10	—	—	—	■
			D15FR60V	600	15	125 *2	300	-55 to 150	1.05	15	10	—	—	—	■
SC-83 similar STO-220	H1-2		DF25V60	600	25	136 *2	400	150	1.10	25	10	—	—	—	—
SC-83 similar FD	H2-1		D25FD60V	600	25	113 *2	450	150	1.10	25	10	—	—	○	○


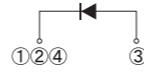
*1 : Tl *2 : Tc *3 : trr(max)=3.5μs ■ : Please contact us.

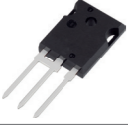
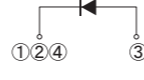
Axial															
JEDEC Code JEITA Code House Name	Package	Fig.	Type No.	Absolute Maximum Ratings					Electrical Characteristics				Halogen free	Based on AEC-Q101	Automotive
				VRRM [V]	IF (AV) [A]	Conditions Ta [°C]	IFSM [A]	Tj [°C]	Vf (max) [V]	Conditions IF [A]	IR (max) Vr=VRRM [μA]	VESD (typ) [kV]			
AX057	A1		D1N60	600	1	25	30	150	1.05	1	10	—	—	—	—
			D1N80	800	1	25	30	150	1.05	1	10	—	—	—	—
AX10	A5-1		S2V60	600	1.7	40	60	150	1.05	1.7	10	—	—	—	—
			S2V80	800	1.7	40	60	150	1.05	1.7	10	—	—	—	—
AX14	A7		S3V100D	800	3	130 *1	150	150	1.05	3	10 *2	—	—	—	—
			S3V60	600	3.5	40	120	150	1.05	2.6	10	—	—	—	—
			S3V80	800	3.5	40	120	150	1.05	2.6	10	—	—	—	—

*1 : Tl *2 : Vr=1000V

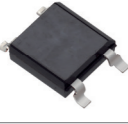
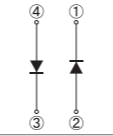


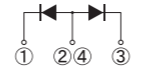
GENERAL RECTIFYING DIODES

Single


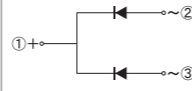
Two Terminal Type							
Package	JEDEC Code JEITA Code House Name	Fig.	I _{F(AV)} [A]	V _{RRM} [V]			Remarks
				400	600	800	
 41.0 × 16.0 × 5.0(mm)	TO-247AD — MTO-3PT	K2	30		S30V60T		

Three Terminal Type							
Package	JEDEC Code JEITA Code House Name	Fig.	I _{F(AV)} [A]	V _{RRM} [V]			Remarks
				400	600	800	
 41.0 × 16.0 × 5.0(mm)	TO-247AD — MTO-3PV	K6	30		S30V80V		

Array

Surface Mount							
Package	JEDEC Code JEITA Code House Name	Fig.	I _{F(AV)} [A]	V _{RRM} [V]			Remarks
				400	600	800	
 10.0 × 6.8 × 2.6(mm)	— — 1NA	C6-2	3		S1NAD80		
 13.2 × 10.2 × 4.7(mm)	— SC-83 similar STO-220	H1-5	5		DF5VD60		
			15		DF15VD60		
		H1-7	16		DF16VC60R		

Diode Module

Diode Module							
Package	JEDEC Code JEITA Code House Name	Fig.	I _{F(AV)} [A]	V _{RRM} [V]			Remarks
				400	600	800	
 22.3 × 22.3 × 25.0(mm)	— — D30VC	E2	30		D30VC60		

Single

Two Terminal Type														
Package		Type No.	Absolute Maximum Ratings					Electrical Characteristics			Halogen free	Based on AEC-Q101	Automotive	
JEDEC Code JEITA Code House Name	Fig.		V _{RRM} [V]	I _{F(AV)} [A]	Conditions T _C [°C]	I _{FSM} [A]	T _J [°C]	V _F (max) [V]	Conditions I _F [A]	I _R (max) V _R =V _{RRM} [μA]				V _{ESD} (typ) [kV]
TO-247AD — MTO-3PT	K2	S30V60T	600	30	119	360	150	1.1	30	10	—	—	—	—

Three Terminal Type														
Package		Type No.	Absolute Maximum Ratings					Electrical Characteristics			Halogen free	Based on AEC-Q101	Automotive	
JEDEC Code JEITA Code House Name	Fig.		V _{RRM} [V]	I _{F(AV)} [A]	Conditions T _C [°C]	I _{FSM} [A]	T _J [°C]	V _F (max) [V]	Conditions I _F [A]	I _R (max) V _R =V _{RRM} [μA]				V _{ESD} (typ) [kV]
TO-247AD — MTO-3PV	K6	S30V80V	800	30	131	450	150	1.1	30	10	—	—	—	○

Array

Surface Mount														
Package		Type No.	Absolute Maximum Ratings					Electrical Characteristics			Halogen free	Based on AEC-Q101	Automotive	
JEDEC Code JEITA Code House Name	Fig.		V _{RRM} [V]	I _{F(AV)} [A]	Conditions T _C [°C]	I _{FSM} [A]	T _J [°C]	V _F (max) [V]	Conditions I _F [A]	I _R (max) V _R =V _{RRM} [μA]				V _{ESD} (typ) [kV]
— — 1NA	C6-2	S1NAD80	800	3	102 *	110	150	1.05	0.75	10	—	—	—	—
— SC-83 similar STO-220	H1-5	DF5VD60	600	5	140	140	150	1.05	2.50	10	—	—	—	—
		DF15VD60	600	15	127	190	150	1.05	7.50	10	—	—	—	—
	H1-7	DF16VC60R	600	16	124	190	150	1.05	8.00	10	—	—	—	—

* : Tl

Diode Module


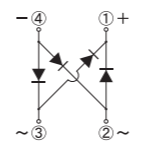







Diode Module														
Package		Type No.	Absolute Maximum Ratings					Electrical Characteristics			Halogen free	Based on AEC-Q101	Automotive	
JEDEC Code JEITA Code House Name	Fig.		V _{RRM} [V]	I _{F(AV)} [A]	Conditions T _C [°C]	I _{FSM} [A]	T _J [°C]	V _F (max) [V]	Conditions I _F [A]	I _R (max) V _R =V _{RRM} [μA]				V _{ESD} (typ) [kV]
— — D30VC	E2	D30VC60	600	30	124	300	150	1.05	15	10	—	—	—	—

BRIDGE DIODES


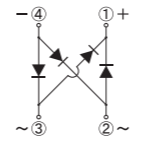






Bridge Diodes are suitable for the rectification of commercial frequency.

Variations are available for various packaging as well as high voltage (Max 1600V), high IFSM, low VF, and low noise.

Small Bridge Diodes

Surface Mount							
Package	JEDEC Code JEITA Code House Name	Fig.	IF(AV) [A]	VRRM [V]			Remarks
				600	800	1000	
 7.0 × 4.7 × 2.6(mm)	TO-269AA 1Z	C2-1	0.8	S1ZB60	S1ZB80		
 6.2 × 5.15 × 1.45(mm)	SOPA-4	C1	1		D1UBA80		
 10.0 × 6.8 × 2.6(mm)	1N	C4	1	S1NB60	S1NB80		
 10.0 × 6.8 × 2.6(mm)	1NA	C6-1	1		S1NBB80		
 10.0 × 6.8 × 2.6(mm)	1NA	C6-1	1.5	S1NBC60	S1NBC80		
 10.0 × 6.8 × 2.6(mm)	1NA	C6-1	2		S2NBC100		
 10.6 × 10.2 × 3.1(mm)	1W	C8	1	S1WB(A)60 S1WB(A)60B	S1WB(A)80		
 10.6 × 10.2 × 3.1(mm)	1W	C8	2		S2WB(A)80		

THD (Through Hole Device)

THD (Through Hole Device)							
Package	JEDEC Code JEITA Code House Name	Fig.	IF(AV) [A]	VRRM [V]			Remarks
				600	800	1000	
 3.8 × 4.7 × 2.5(mm)	1Z	C3	0.8	S1ZB60	S1ZB80		
 6.5 × 6.8 × 2.5(mm)	1N	C5	1	S1NB60	S1NB80		
 6.5 × 6.8 × 2.5(mm)	1NA	C7	1		S1NBB80		
 6.5 × 6.8 × 2.5(mm)	1NA	C7	1.5	S1NBC60	S1NBC80		
 6.5 × 6.8 × 2.5(mm)	1NA	C7	2		S2NBC100		
 6.2 × 10.2 × 3.0(mm)	1W	C9	1	S1WB(A)60 S1WB(A)60B	S1WB(A)80		
 6.2 × 10.2 × 3.0(mm)	1W	C9	2		S2WB(A)80		

Small Bridge Diodes

Surface Mount														
Package		Type No.	Spec. Code	Absolute Maximum Ratings					Electrical Characteristics			Halogen free	UL	Automotive
JEDEC Code JEITA Code House Name	Fig.			VRRM [V]	IF(AV) [A]	Conditions Ta [°C]	IFSM [A]	Tj [°C]	Vf(max) [V]	Conditions IF [A]	IR(max) Vr=VRRM [μA]			
TO-269AA	C2-1	S1ZB60	-7072	600	0.8	25	30	150	1.05	0.4	10	-	-	-
1Z		S1ZB80	-7072	800	0.8	25	30	150	1.05	0.4	10	-	-	-
SOPA-4	C1	D1UBA80	-7062	800	1	25	30	150	0.95	0.4	10	-	-	-
1N	C4	S1NB60	-7062	600	1	25	30	150	1.05	0.5	10	-	-	-
		S1NB80	-7062	800	1	25	30	150	1.05	0.5	10	-	-	-
	C6-1	S1NBB80	-7062	800	1	26	50	150	1.05	0.5	10	-	-	-
		S1NBC60	-7062	600	1.5	105 *1	60	150	1.05	0.75	10	-	-	-
		S1NBC80	-7062	800	1.5	105 *1	60	150	1.05	0.75	10	-	-	-
		S2NBC100	-7062	1000	2	93 *1	65 *2	150	1.05	1	10	-	-	-
	C8	S1WB(A)60	-7062	600	1	25	30	150	1.00	0.5	10	-	-	-
		S1WB(A)60B	-7062	600	1	25	50	150	1.00	0.5	10	-	-	-
		S1WB(A)80	-7062	800	1	25	30	150	1.00	0.5	10	-	-	-
		S2WB(A)80	-7062	800	2	112 *1	50	-40 to 150	1.05	1	10	-	-	-

*1 : Tl *2 : 60Hz

THD (Through Hole Device)

THD (Through Hole Device)														
Package		Type No.	Spec. Code	Absolute Maximum Ratings					Electrical Characteristics			Halogen free	UL	Automotive
JEDEC Code JEITA Code House Name	Fig.			VRRM [V]	IF(AV) [A]	Conditions Ta [°C]	IFSM [A]	Tj [°C]	Vf(max) [V]	Conditions IF [A]	IR(max) Vr=VRRM [μA]			
1Z	C3	S1ZB60	-7101	600	0.8	25	30	150	1.05	0.4	10	-	-	-
		S1ZB80	-7101	800	0.8	25	30	150	1.05	0.4	10	-	-	-
1N	C5	S1NB60	-7101	600	1	25	30	150	1.05	0.5	10	-	-	-
		S1NB80	-7101	800	1	25	30	150	1.05	0.5	10	-	-	-
	C7	S1NBB80	-7101	800	1	26	50	150	1.05	0.5	10	-	-	-
		S1NBC60	-7101	600	1.5	105 *1	60	150	1.05	0.75	10	-	-	-
		S1NBC80	-7101	800	1.5	105 *1	60	150	1.05	0.75	10	-	-	-
		S2NBC100	-7101	1000	2	93 *1	65 *2	150	1.05	1	10	-	-	-
	C9	S1WB(A)60	-7101	600	1	25	30	150	1.00	0.5	10	-	-	-
		S1WB(A)60B	-7101	600	1	25	50	150	1.00	0.5	10	-	-	-
		S1WB(A)80	-7101	800	1	25	30	150	1.00	0.5	10	-	-	-
		S2WB(A)80	-7101	800	2	112 *1	50	-40 to 150	1.05	1	10	-	-	-

*1 : Tl *2 : 60Hz

BRIDGE DIODES

SIP (Single In-line Package) Bridge Diodes

THD (Through Hole Device)							Remarks
Package	JEDEC Code JEITA Code House Name	Fig.	I _{F(AV)} [A]	V _{RRM} [V]			
				600	800	1000	
	-	D3K	D1	2	UD2KB80		
				3	★ UD2KB80H		
				4	UD3KB80		
				6	UD6KBA80		
				8	★ UD6KBA80H	UD8KBA80	
	-	2S	D2	1.5	D2SBA60	D2SB60	
				2	D2SB60A		
	-	JB	D5	6	D6JBB60V	D6JBB80V	
				8	D8JBB60V	D8JBB80V	
				10	D10JBB60V	D10JBB80V	
	-	3S	D3	4	D3SBA60	D3SB80	
				10	D10XB60	D10XB80	
	-	D6K	D11	8	US8KB80R		
				10	★ US8KBA80R		
				15	US10KB80R		
				20	★ US15KB80HR		
				25	★ US25KB80HR		
				30	★ US25KB80R		
	-	JA	D6	15	D15JAB60V	D15JAB80V	
				25	D25JAB60V	D25JAB80V	
	-	5S	D4	6	D5SBA60	D5SB80	
				15	D15XB60	D15XB80	D15XB100
				20	D20XB60	D20XB80	
				25	D25XB60	★ D25XBA80	D25XB100
				30		★ D30XB80	
				35		★ D35XBA80	
	-	TSB(4pin)	D7	50		D50XB80	
				50		D50JCB80V	

■ : New product ★ : Under development


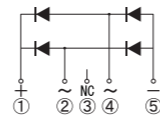
SIP (Single In-line Package) Bridge Diodes

THD (Through Hole Device)														
JEDEC Code JEITA Code House Name	Fig.	Type No.	Absolute Maximum Ratings					Electrical Characteristics			Halogen free	UL	Automotive	
			V _{RRM} [V]	I _{F(AV)} [A]	Conditions T _C [°C]	I _{FSM} [A]	T _J [°C]	V _F (max) [V]	Conditions I _F [A]	I _R (max) V _R =V _{RRM} [μA]				
-	D3K	D1	UD2KB80	800	2 *3	143	62 *3	150	1.05	1	10	-	UL	-
			★ UD2KB80H	800	2 *3	TBD	90 *3	-55 to 150	1.00	1	10	-	UL	-
			UD3KB80	800	3 *3	140	90 *3	150	1.05	1.5	10	-	UL	-
			★ UD3KB80H	800	3 *3	TBD	135 *3	-55 to 150	1.00	1.5	10	-	UL	-
			UD4KB80	800	4 *3	138	135 *3	150	1.00	2	10	-	UL	-
			UD6KBA80	800	6 *3	131	135 *3	150	1.05	3	10	-	UL	-
			★ UD6KBA80H	800	6 *3	TBD	165 *3	-55 to 150	1.00	3	10	-	UL	-
			UD8KBA80	800	8 *3	126	165 *3	150	1.05	4	10	-	UL	-
-	2S	D2	D2SBA60	600	1.5	25 *1	60	150	1.05	0.75	10	-	-	-
			D2SB60A	600	2	115 *2	120	150	0.95	1	10	-	-	-
-	JB	D5	D6JBB60V	600	6	131	100	150	1.05	3	10	-	UL	-
			D6JBB80V	800	6	131	100	150	1.05	3	10	-	UL	-
			D8JBB60V	600	8	130	130	150	1.05	4	10	-	UL	-
			D8JBB80V	800	8	130	130	150	1.05	4	10	-	UL	-
			D10JBB60V	600	10	129	150	150	1.05	5	10	-	UL	-
			D10JBB80V	800	10	129	150	150	1.05	5	10	-	UL	-
-	3S	D3	D3SBA60	600	4	108	80	150	1.05	2	10	-	UL	-
			D3SB60	600	4	108	120	150	1.05	2	10	-	UL	-
			D4SB60L	600	4	111	150	150	0.95	2	10	-	UL	-
			D3SB80	800	4	108	120	150	1.05	2	10	-	UL	-
			D4SB80	800	4	108	150	150	0.95	2	10	-	UL	-
			D10XB60	600	10	100	120	150	1.10	5	10	-	UL	-
			D10XB60H	600	10	112	170	150	1.05	5	10	-	UL	-
			D10XB80	800	10	100	120	150	1.10	5	10	-	UL	-
-	D6K	D11	US8KB80R	800	8 *3	108	200 *3	150	1.00	4	10	-	UL	-
			★ US8KBA80R	800	8 *3	TBD	150 *3	-55 to 150	1.05	4	10	-	UL	-
			US10KB80R	800	10 *3	100	150 *3	150	1.10	5	10	-	UL	-
			★ US15KB80HR	800	15 *3	TBD	240 *3	-55 to 150	1.05	7.5	10	-	UL	-
			US15KB80R	800	15 *3	101	200 *3	-55 to 150	1.10	7.5	10	-	UL	-
			★ US20KB80HR	800	20 *3	TBD	300 *3	-55 to 150	1.05	10	10	-	UL	-
			US20KB80R	800	20 *3	97	240 *3	150	1.10	10	10	-	UL	-
			★ US25KB80HR	800	25 *3	TBD	350 *3	-55 to 150	1.05	12.5	10	-	UL	-
			★ US25KB80R	800	25 *3	TBD	300 *3	-55 to 150	1.05	12.5	10	-	UL	-
			US30KB80R	800	30 *3	97	350 *3	-55 to 150	1.10	15	10	-	UL	-
US30KBV80FR	800	30 *3	126	350 *3	-55 to 175	1.05	15	5	○	UL	-			
-	JA	D6	D15JAB60V	600	15	110	200	150	1.05	7.5	10	-	UL	-
			D15JAB80V	800	15	110	200	150	1.05	7.5	10	-	UL	-
			D25JAB60V	600	25	107	350	150	1.05	12.5	10	-	UL	-
			D25JAB80V	800	25	107	350	150	1.05	12.5	10	-	UL	-
-	5S	D4	D5SBA60	600	6	111	120	150	1.05	3	10	-	UL	-
			D5SB60	600	6	110	170	150	1.05	3	10	-	UL	-
			D6SB60L	600	6	112	170	150	1.05	3	10	-	UL	-
			D5SB80	800	6	110	170	150	1.05	3	10	-	UL	-
			D6SB80	800	6	110	170	150	1.05	3	10	-	UL	-
			D15XB60	600	15	100	200	150	1.10	7.5	10	-	UL	-
			D15XB60H	600	15	107	240	150	1.05	7.5	10	-	UL	-
			D15XB80	800	15	100	200	150	1.10	7.5	10	-	UL	-
			■ D15XB80H	800	15	107	240	-40 to 150	1.05	7.5	10	-	UL	-
			D15XB100	1000	15	110	200	150	1.10	7.5	10	-	UL	-
			D20XB60	600	20	87	240	150	1.10	10	10	-	UL	-
			D20XB80	800	20	87	240	150	1.10	10	10	-	UL	-
			D25XB60	600	25	98	350	150	1.05	12.5	10	-	UL	■
			D25XB80	800	25	98	350	150	1.05	12.5	10	-	UL	■
			★ D25XBA80	800	25	TBD	300 *3	-55 to 150	1.05	12.5	10	-	UL	-
			D25XB100	1000	25	106	350	150	1.05	12.5	10	-	UL	-
			★ D30XB80	800	30	TBD	400 *3	-55 to 150	1.05	15	10	-	UL	-
			D35XB80	800	35	93	603 *3	-55 to 150	1.05	17.5	10	-	UL	-
★ D35XBA80	800	35	TBD	400 *3	-55 to 150	1.05	17.5	10	-	UL	-			
★ D40XB80	800	40	TBD	603 *3	-55 to 150	1.00	20	10	-	UL	-			
★ D40XBA80	800	40	TBD	400 *3	-55 to 150	1.05	20	10	-	UL	-			
■ D40XB100	1000	40	85	603 *3	-55 to 150	1.05	20	10	-	UL	-			
★ D45XB80	800	45	TBD	603 *3	-55 to 150	1.05	22.5	10	-	UL	-			
-	TSB(4pin)	D7	D50XB80	800	50	95	600	150	1.05	25	10	-	UL	-
			D50JCB80V	800	50	94	600	150	1.05	25	10	-	UL	■


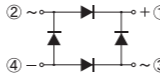






■ : New product ★ : Under development *1 : Ta *2 : Tl *3 : 60Hz ■ : Please contact us. UL : UL recognized (UL File No. E142422)

BRIDGE DIODES


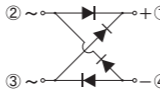




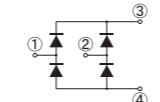
DIP (Dual In-line Package) Bridge Diode

Package	JEDEC Code JEITA Code House Name	Fig.	I _{F(AV)} [A]	V _{RRM} [V]			Remarks
				600	800	1000	
 45.7 × 30.0 × 8.6(mm)	— — JH	D10-1	70		D70JHB80V		

SQIP (Square In-line Package) Bridge Diodes

Package	JEDEC Code JEITA Code House Name	Fig.	I _{F(AV)} [A]	V _{RRM} [V]			Remarks
				600	800	1000	
 13.0 × 13.0 × 27.5(mm)	— — S2VB	E3	2		S2VB60		
 17.0 × 17.0 × 32.5(mm)	— — S4VB	E4	4		S4VB60		
 25.0 × 25.0 × 32.5(mm)	— — S5VB	E5	6		S5VB60		
 22.0 × 22.0 × 32.5(mm)	— — S10VB	E6	10		S10VB60		
 26.5 × 26.5 × 25.0(mm)	— — S15VB	E7	15		S15VB60		
 32.0 × 32.0 × 25.0(mm)	— — S25VB	E8	25		S25VB60	S25VB80	
 36.0 × 36.0 × 24.0(mm)	— — S50VB	E9	50		S50VB60	S50VB80	

Input/Output In-line Terminal Type

Package	JEDEC Code JEITA Code House Name	Fig.	I _{F(AV)} [A]	V _{RRM} [V]			Remarks
				600	800	1000	
 17.0 × 17.0 × 31.0(mm)	— — S3WB	E10	2.3		S3WB60		
 22.5 × 22.5 × 32.5(mm)	— — S10WB	E11	10		S10WB60		
 26.5 × 26.5 × 32.5(mm)	— — S15WB	E12	15		S15WB60		
 32.5 × 32.5 × 32.5(mm)	— — S20WB	E13	20		S20WB60	S20WB80	
 57.5 × 47.5 × 17.0(mm)	— — MG073	F12	100		★ MG073A		

★ : Under development

DIP (Dual In-line Package) Bridge Diode

Package			Absolute Maximum Ratings					Electrical Characteristics			Halogen free	UL	Automotive
JEDEC Code JEITA Code House Name	Fig.	Type No.	V _{RRM} [V]	I _{F(AV)} [A]	Conditions T _C [°C]	I _{F(SM)} [A]	T _J [°C]	V _F (max) [V]	Conditions I _F [A]	I _R (max) V _R =V _{RRM} [μA]			
— — JH	D10-1	D70JHB80V	800	70	99	500	-55 to 150	1.1	35	10	—	—	—

SQIP (Square In-line Package) Bridge Diodes

Package			Absolute Maximum Ratings					Electrical Characteristics			Halogen free	UL	Automotive
JEDEC Code JEITA Code House Name	Fig.	Type No.	V _{RRM} [V]	I _{F(AV)} [A]	Conditions T _C [°C]	I _{F(SM)} [A]	T _J [°C]	V _F (max) [V]	Conditions I _F [A]	I _R (max) V _R =V _{RRM} [μA]			
— — S2VB	E3	S2VB60	600	2 *1	40	40	150	1.05	1	10	—	—	—
— — S4VB	E4	S4VB60	600	4	40	80	150	1.05	2	10	—	—	—
— — S5VB	E5	S5VB60	600	6	40	200	150	1.05	3	10	—	—	—
— — S10VB	E6	S10VB60	600	10	40	200	150	1.05	5	10	—	—	—
— — S15VB	E7	S15VB60	600	15	83 *2	200	150	1.05	7.5	10	—	—	—
— — S25VB	E8	S25VB60	600	25	85 *2	400	150	1.05	12.5	10	—	—	—
— — S25VB80		S25VB80	800	25	85 *2	400	150	1.05	12.5	10	—	—	—
— — S50VB60	E9	S50VB60	600	50	95 *2	500	150	1.05	25	10	—	—	—
— — S50VB80		S50VB80	800	50	95 *2	500	150	1.05	25	10	—	UL [®]	—

*1 : Without heatsink *2 : T_C UL[®] : UL recognized (UL File No. E142422)


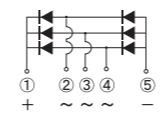



Input/Output In-line Terminal Type

Package			Absolute Maximum Ratings					Electrical Characteristics			Halogen free	UL	Automotive
JEDEC Code JEITA Code House Name	Fig.	Type No.	V _{RRM} [V]	I _{F(AV)} [A]	Conditions T _C [°C]	I _{F(SM)} [A]	T _J [°C]	V _F (max) [V]	Conditions I _F [A]	I _R (max) V _R =V _{RRM} [μA]			
— — S3WB	E10	S3WB60	600	2.3	40 *	120	150	1.05	2	10	—	—	—
— — S10WB	E11	S10WB60	600	10	74	170	150	1.05	5	10	—	—	—
— — S15WB	E12	S15WB60	600	15	77	200	150	1.05	7.5	10	—	—	—
— — S20WB	E13	S20WB60	600	20	76	500	150	1.05	10	10	—	—	—
— — S20WB80		S20WB80	800	20	76	500	150	1.05	10	10	—	UL [®]	—
— — MG073	F12	★ MG073A	800	100	TBD	1200	150	1.17	50	10	—	—	—


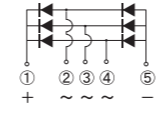


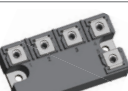
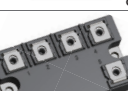
★ : Under development * : T_a UL[®] : UL recognized (UL File No. E142422)

BRIDGE DIODES

3 Phase Bridge Diodes

THD (Through Hole Device)							
Package	JEDEC Code JEITA Code House Name	Fig.	I _{F(AV)} [A]	V _{RRM} [V]			Remarks
				800	1200	1600	
 47.0 × 45.7 × 7.5(mm)	— — TSB(5pin)	D8	30	D30XT80			
			45	D45XT80		D45XT160	
 47.0 × 45.7 × 7.5(mm)	— — JC(5pin)	D8	30		D30JCT120V		
			45		D45JCT120V	D45JCT160V	
 47.0 × 45.7 × 7.5(mm)	— — JF	D9	75	D75JFT80V			
 45.7 × 30.0 × 8.6(mm)	— — JH	D10-2	100	D100JHT80V	D100JHT120V	D100JHT160V	

3 Phase Bridge Diodes

3 Phase Bridge Diodes							
Package	JEDEC Code JEITA Code House Name	Fig.	I _{F(AV)} [A]	V _{RRM} [V]			Remarks
				600	800	1600	
 36.0 × 36.0 × 24.0(mm)	— — SVT	E15	10	S10VT60	S10VT80		
			15	S15VT60	S15VT80		
			20	S20VT60	S20VT80		
			30	S30VT60	S30VT80	S30VT160	
 36.0 × 36.0 × 23.0(mm)	— — SVTA	E14	10	S10VTA60	S10VTA80		
			15	S15VTA60	S15VTA80		
			20	S20VTA60	S20VTA80		
			30	S30VTA60	S30VTA80	S30VTA160	
 89.0 × 50.0 × 16.6(mm)	— — MG038	F7	150		★ MG038B150080A	★ MG038D150160A	
			200		★ MG038A200080A	★ MG038C200160A	
 84.5 × 46.0 × 17.0(mm)	— — MG060	F9	75		★ MG060B075080A	★ MG060E075160A	
			100		★ MG060C100080A		
 91.0 × 52.0 × 17.0(mm)	— — MG061	F10	100			★ MG061D100160A	
			150		★ MG061B150080A	★ MG061E150160A	
			200		★ MG061C200080A	★ MG061F200160A	

★ : New product ★ : Under development

3 Phase Bridge Diodes

THD (Through Hole Device)													
JEDEC Code JEITA Code House Name	Fig.	Type No.	Absolute Maximum Ratings					Electrical Characteristics			Halogen free	UL	Automotive
			V _{RRM} [V]	I _{F(AV)} [A]	Conditions T _C [°C]	I _{FSM} [A]	T _J [°C]	V _F (max) [V]	Conditions I _F [A]	I _R (max) V _R =V _{RM} [μA]			
— — TSB(5pin)	D8	D30XT80	800	30	117	300	150	1.05	10	10	—	UL	—
		D45XT80	800	45	101	400	150	1.05	15	10	—	UL	—
		D45XT160	1600	45	97	360 *	150	1.05	15	100	—	UL	—
— — JC(5pin)	D8	D30JCT120V	1200	30	116	300	150	1.05	10	10	—	UL	—
		D45JCT120V	1200	45	99	450	150	1.05	15	10	—	UL	—
		D45JCT160V	1600	45	97	450	150	1.05	15	10	—	UL	—
— — JF	D9	D75JFT80V	800	75	109	400	150	1.05	25	10	—	—	—
— — JH	D10-2	D100JHT80V	800	100	99	500	-55 to 150	1.10	35	10	—	UL	—
		D100JHT120V	1200	100	92	450	-55 to 150	1.17	35	10	—	UL	—
		D100JHT160V	1600	100	92	540	-55 to 150	1.15	35	10	—	UL	—

* : 60Hz UL : UL recognized (UL File No. E142422)

3 Phase Bridge Diodes


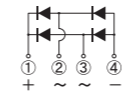
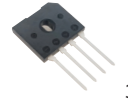

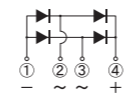

3 Phase Bridge Diodes													
JEDEC Code JEITA Code House Name	Fig.	Type No.	Absolute Maximum Ratings					Electrical Characteristics			Halogen free	UL	Automotive
			V _{RRM} [V]	I _{F(AV)} [A]	Conditions T _C [°C]	I _{FSM} [A]	T _J [°C]	V _F (max) [V]	Conditions I _F [A]	I _R (max) V _R =V _{RM} [μA]			
— — SVT	E15	S10VT60	600	10	137	170	150	1.05	3.5	10	—	—	—
		S10VT80	800	10	137	150	150	1.05	3.5	10	—	—	—
		S15VT60	600	15	132	200	150	1.05	5	10	—	—	—
		S15VT80	800	15	132	200	150	1.05	5	10	—	—	—
		S20VT60	600	20	128	300	150	1.05	7	10	—	—	—
		S20VT80	800	20	128	300	150	1.05	7	10	—	—	—
		S30VT60	600	30	121	400	150	1.05	10	10	—	—	—
		S30VT80	800	30	121	400	150	1.05	10	10	—	UL	—
		S30VT160	1600	30	116	350	150	1.05	10	100	—	—	—
— — SVTA	E14	S10VTA60	600	10	137	170	150	1.05	3.5	10	—	—	—
		S10VTA80	800	10	137	150	150	1.05	3.5	10	—	—	—
		S15VTA60	600	15	132	200	150	1.05	5	10	—	—	—
		S15VTA80	800	15	132	200	150	1.05	5	10	—	—	—
		S20VTA60	600	20	128	300	150	1.05	7	10	—	—	—
		S20VTA80	800	20	128	300	150	1.05	7	10	—	—	—
		S30VTA60	600	30	121	400	150	1.05	10	10	—	—	—
		S30VTA80	800	30	121	400	150	1.05	10	10	—	—	—
		S30VTA160	1600	30	116	350	150	1.05	10	100	—	—	—
— — MG038	F7	★ MG038B150080A	800	150	125	1650	150	1.05	50	10	○	UL	—
		★ MG038D150160A	1600	150	125	1600	150	1.05	50	10	○	UL	—
		★ MG038A200080A	800	200	125	1950	150	1.05	67	10	○	UL	—
		★ MG038C200160A	1600	200	125	2000	150	1.05	67	10	○	UL	—
— — MG060	F9	★ MG060B075080A	800	75	125	TBD	150	TBD	75	10	○	to be certified	—
		★ MG060E075160A	1600	75	125	TBD	150	TBD	75	10	○	to be certified	—
		★ MG060C100080A	800	100	125	TBD	150	TBD	100	10	○	to be certified	—
— — MG061	F10	★ MG061D100160A	1600	100	125	TBD	150	TBD	100	10	○	to be certified	—
		★ MG061B150080A	800	150	125	TBD	150	TBD	150	10	○	to be certified	—
		★ MG061E150160A	1600	150	125	TBD	150	TBD	150	10	○	to be certified	—
		★ MG061C200080A	800	200	125	TBD	150	TBD	200	10	○	to be certified	—
★ MG061F200160A	1600	200	125	TBD	150	TBD	200	10	○	to be certified	—		

★ : New product ★ : Under development UL : UL recognized (UL File No. E142422)

BRIDGE DIODES


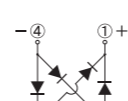

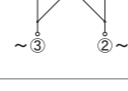
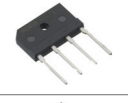
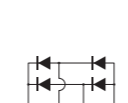
Series	Feature
S	Evenly balanced Vf and Ir
N	Low Vf, High Voltage
K	Low Vf

Low Vf Bridge Diodes


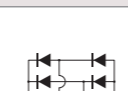

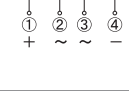
THD (Through Hole Device)							
Package	JEDEC Code JEITA Code House Name	Fig.	If (AV) [A]	VRRM [V]			Remarks
				600	800	1000	
 37.5 × 30.0 × 4.6(mm)	— — 5S	D4	15	LL15XB60			
				LL25XB60 LK25XB60			
 37.1 × 22.1 × 3.45(mm)	— — D6K	D11	25	 LM25KBV60FR			
				 LM30KBV60FR			

 : New product


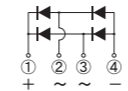

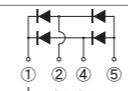
Low Noise Bridge Diodes

Surface Mount-THD (Through Hole Device)							
Package	JEDEC Code JEITA Code House Name	Fig.	If (AV) [A]	VRRM [V]			Remarks
				600	800	1000	
 10.6 × 10.2 × 3.1(mm)	— — 1W	C8 (SMD)	1.1	LN1WBA60			
		C9 (DIP)					
 6.2 × 10.2 × 3.0(mm)	—	D3	4	LN4SB60			
 32.5 × 25.0 × 4.6(mm)	— — 5S	D4	6	LN6SB60			
			15	LN15XB60 LN15XB60H			
			25	LN25XB60			



High Speed Bridge Diodes (SBD)



THD (Through Hole Device)							
Package	JEDEC Code JEITA Code House Name	Fig.	If (AV) [A]	VRRM [V]			Remarks
				40	60	200	
 32.5 × 25.0 × 4.6(mm)	— — 3S	D3	4	D4SBS4	D4SBS6	D4SBN20	
			10	D10SBS4			
			15		D15XS6		
 37.5 × 30.0 × 4.6(mm)	— — 5S	D4	6			D6SBN20	
			15			D15XBN20	
			20		D20XS6		
			30			D30XBN20	

High Speed Bridge Diodes (FRD)



THD (Through Hole Device)							
Package	JEDEC Code JEITA Code House Name	Fig.	If (AV) [A]	VRRM [V]			Remarks
				200	400	1000	
 32.5 × 25.0 × 4.6(mm)	— — 3S	D3	4	D4SBL20U			
 47.0 × 45.7 × 7.5(mm)	— — JC(4pin)	D7	30			D30JCB100K	

Low Vf Bridge Diodes

THD (Through Hole Device)														
Package		Type No.	Absolute Maximum Ratings					Electrical Characteristics				Halogen free	UL	Automotive
JEDEC Code JEITA Code House Name	Fig.		VRRM [V]	If (AV) [A]	Conditions Tc [°C]	IfSM [A]	Tj [°C]	Vf (max) [V]	Conditions If [A]	Ir (max) Vr=VRRM [μA]	trr (max) [μs]			
— — 5S	D4	LL15XB60	600	15	124	200	150	0.90	7.5	10	3	—	—	—
		LL25XB60	600	25	113	300	150	0.92	12.5	10	3	—	—	■
		LK25XB60	600	25	114	603 *	-55 to 150	0.95	12.5	10	5	—	—	—
— — D6K	D11	 LM25KBV60FR	600	25	115	350 *	-55 to 150	0.91	12.5	10	3	○	—	—
		 LM30KBV60FR	600	30	106	350 *	-55 to 150	0.92	15	10	3	○	—	—

 : New product * : 60Hz ■ : Please contact us.  : UL recognized (UL File No. E142422)

Low Noise Bridge Diodes


Surface Mount-THD (Through Hole Device)																
Package		Type No.	Absolute Maximum Ratings					Electrical Characteristics				UL	Halogen free	Automotive	Remarks	
JEDEC Code JEITA Code House Name	Fig.		VRRM [V]	If (AV) [A]	Conditions Tc [°C]	IfSM [A]	Tj [°C]	Vf (max) [V]	Conditions If [A]	Ir (max) Vr=VRRM [μA]	trr (max) [μs]					
— — 1W	C8(SMD) C9(DIP)	LN1WBA60	600	1.1	25 *	50	150	1.00	0.55	10	5	—	—	—	SMD-7072 DIP-7101	
— — 3S	D3	LN4SB60	600	4	111	150	150	0.95	2	10	5		—	—		
— — 5S	D4	LN6SB60	600	6	111	170	150	1.05	3	10	5		—	—		
		LN15XB60	600	15	100	200	150	1.10	7.5	10	5	—	—	—		
		LN15XB60H	600	15	106	290	150	1.05	7.5	10	5	—	—	—		
		LN25XB60	600	25	85	350	150	1.05	12.5	10	5	—	—	—		


* : Ta  : UL recognized (UL File No. E142422)

High Speed Bridge Diodes (SBD)

THD (Through Hole Device)																
Package		Type No.	Absolute Maximum Ratings					Electrical Characteristics				Halogen free	UL	Automotive	Remarks	
JEDEC Code JEITA Code House Name	Fig.		VRRM [V]	If (AV) [A]	Conditions Tc [°C]	IfSM [A]	Tj [°C]	Vf (max) [V]	Conditions If [A]	Ir (max) Vr=VRRM [μA]						
— — 3S	D3	D4SBS4	40	4	116	60	150	0.55	2	2mA	—	—	—	S series		
		D4SBS6	60	4	114	60	150	0.62	2	2mA	—	—	—	S series		
		D4SBN20	200	4	103	60	150	0.90	2	1.5	—	—	—	N series		
		D10SBS4	40	10	67	100	150	0.55	5	3.5mA	—	—	—	S series		
		D15XS6	60	15	59	150	150	0.63	7.5	6.0mA	—	—	—	S series		
		D6SBN20	200	6	110	120	150	0.90	3	2	—	—	—	N series		
— — 5S	D4	D15XBN20	200	15	106	200	150	0.90	7.5	5	—	—	—	N series		
		D20XS6	60	20	100	200	150	0.63	10	8.0mA	—	—	—	S series		
		D30XBN20	200	30	91	350	150	0.90	15	10	—	—	—	N series		

High Speed Bridge Diodes (FRD)

THD (Through Hole Device)																
Package		Type No.	Absolute Maximum Ratings					Electrical Characteristics				Halogen free	UL	Automotive	Remarks	
JEDEC Code JEITA Code House Name	Fig.		VRRM [V]	If (AV) [A]	Conditions Tc [°C]	IfSM [A]	Tj [°C]	Vf (max) [V]	Conditions If [A]	Ir (max) Vr=VRRM [μA]						
— — 3S	D3	D4SBL20U	200	4	108	80	150	0.98	2	10	—	—	—			
— — JC(4pin)	D7	D30JCB100K	1000	30	90	450	150	1.90	15	10	—		○	K series		

 : UL recognized (UL File No. E142422)







SCHOTTKY BARRIER DIODES

Schottky Barrier Diodes are diodes using a barrier at the junction of a metal and the semiconductor.

These are very suitable rectification devices featuring high speed and a low VF diode.

Series	Feature
S	Evenly balanced Vf and Ir
M	Evenly balanced Low Vf and Ir
N	High Voltage
H	Ultra Low Vf
J	Low Ir
SL	Ultra Low Ir, Tj=175°C guaranteed
Y	Evenly balanced Vf and Low Ir
W	SiCSBD,Ultra High Recovery Speed,Low Noise

Single

Surface Mount												Remarks		
Package	JEDEC Code JEITA Code House Name	Fig.	IF(AV) [A]	VRRM[V]										
				30	40	45	60	80	100	120	150			
	DO-219AB similar SC-109 G1F	B1-1	1	DG1M3 DG1H3	DG1S4		DG1S6			DG1J10A				
			1.4								DG1N15A			
			1.5	DG1M3A DG1H3A			DG1S6A							
	DO-219AA similar M1F	B2	1.2				M1FS6							
			1.33		M1FS4									
			1.5		M1FJ4									
			1.7	M1FH3										
	DO-214AC 1F	B3-1	3	M1FM3						D1FJ10				
			1.1		D1FS4		D1FS6							
			1.5		D1FS4A									
			2		D1FT4 D1FJ4		D1FT6	D1FJ8	D1FT10					
			2.5				D1FS6A							
	SC-110B CE	B5-1	3		D3CE4S	★D3CE4R5ST	D3CE6S ★D3CE6ST		★D3CE10ST	★D3CE12ST	D3CE15ST			
			5		D5CE4S	★D5CE4R5ST	★D5CE6ST		★D5CE10ST	★D5CE12ST	★D5CE15ST			
	DO-214AA similar M2F	B6	6	M2FH3 M2FM3										
	2F	B9-1	1.5				D2FS6							
			1.6		D2FS4									
			2.6		D3FS4A									
			3				D3FS6		D3FJ10					

★ : Under development







Single





Surface Mount																
JEDEC Code JEITA Code House Name	Fig.	Type No.	Absolute Maximum Ratings					Electrical Characteristics					Halogen free	Based on AEC-Q101	Automotive	Series
			VRRM [V]	IF(AV) [A]	Conditions Tc [°C]	IFSM [A]	Tj [°C]	Vf(max) [V]	Conditions IF [A]	Ir(max) Vr=VRRM [mA]	Ct (typ) [pF]					
DO-219AB similar SC-109 G1F	B1-1	DG1M3	30	1	27 *1	20	150	0.46	0.7	0.05	36	-	○	○	M series	
		DG1H3	30	1	113 *2	20	125	0.36	0.7	1	37	-	-	○	H series	
		DG1S4	40	1	36 *1	30	150	0.55	0.7	0.8	37	-	○	○	S series	
		DG1S6	60	1	128 *2	30	150	0.58	0.7	1	32	-	○	○	S series	
		DG1J10A	100	1	125 *2	30	150	0.82	1	0.1	43	-	-	○	J series	
		DG1N15A	150	1.4	65 *1	30	150	0.88	1.4	0.05	32	-	○	○	N series	
		DG1M3A	30	1.5	37 *1	30	150	0.46	1.5	0.05	70	-	○	○	M series	
		DG1H3A	30	1.5	107 *2	30	125	0.36	1.5	1	70	-	-	○	H series	
		DG1S6A	60	1.5	122 *2	40	150	0.53	1	0.05	43	-	○	○	S series	
DO-219AA similar M1F	B2	M1FS6	60	1.2	25 *1	40	150	0.58	1.1	1	53	-	○	○	S series	
		M1FS4	40	1.33	25 *1	30	150	0.55	1.1	0.8	50	-	○	○	S series	
		M1FJ4	40	1.5	31 *1	30	150	0.63	1.5	0.05	65	-	○	○	J series	
		M1FH3	30	1.7	25 *1	30	-55 to 125	0.36	1.5	1	80	-	-	-	H series	
DO-214AC 1F	B3-1	M1FM3	30	3	100	30	150	0.46	1.5	0.05	80	-	○	○	M series	
		D1FJ10	100	1	52 *1	50	150	0.72	1	0.2	63	-	○	○	J series	
		D1FS4	40	1.1	51 *1	30	150	0.55	1.1	1	65	-	○	○	S series	
		D1FS6	60	1.1	38 *1	40	150	0.58	1.1	1	50	-	○	○	S series	
		D1FS4A	40	1.5	28 *1	60	150	0.48	1.5	2	95	-	○	○	S series	
		D1FT4	40	2	143 *2	60	175	0.74	2	5μA	63	-	○	○	SL series	
		D1FJ4	40	2	117 *2	50	150	0.61	2	0.2	96	-	○	○	J series	
		D1FT6	60	2	141 *2	60	175	0.78	2	5μA	53	-	○	○	SL series	
		D1FJ8	80	2	110	30	150	0.74	1.5	0.2	40	-	-	○	Y series	
		D1FT10	100	2	136 *2	50	175	0.86	2	5μA	40	-	○	○	SL series	
		D1FS6A	60	2.5	103 *2	60	150	0.57	2.5	0.2	80	-	○	○	S series	
		D1FH3	30	3	95	60	125	0.36	3	2	130	-	-	■	H series	
		D1FT4A	40	3	127 *2	90	175	0.74	3	8μA	93	-	○	○	SL series	
		D1FT6A	60	3	125 *2	90	175	0.78	3	8μA	78	-	○	○	SL series	
		D1FJ8A	80	3	100	30	150	0.74	3	0.4	70	-	-	○	Y series	
		D1FT10A	100	3	116 *2	60	175	0.86	3	8μA	60	-	○	○	SL series	
		D1FT15A	150	3	116 *2	60	175	0.88	3	8μA	52	-	○	○	SL series	
		D1FM3	30	5	83	90	150	0.46	3	0.1	130	-	○	○	M series	
		SC-110B CE	B5-1	D3CE4S	40	3	106 *2	80	150	0.52	3	0.3	97	-	○	○
★D3CE4R5ST	45			3	143 *2	80	-55 to 175	0.74	3	8μA	93	-	TBD	○	SL series	
D3CE6S	60			3	112 *2	100	150	0.58	3	0.3	110	-	○	○	S series	
★D3CE6ST	60			3	142 *2	80	-55 to 175	0.78	3	8μA	78	-	TBD	○	SL series	
★D3CE10ST	100			3	136 *2	80	-55 to 175	0.86	3	8μA	60	-	TBD	○	SL series	
★D3CE12ST	120			3	136 *2	80	-55 to 175	0.87	3	8μA	60	-	TBD	○	SL series	
D3CE15ST	150			3	136 *2	80	175	0.88	3	8μA	52	-	○	○	SL series	
D5CE4S	40			5	94 *2	120	-55 to 150	0.52	5	0.5	157	-	-	○	S series	
★D5CE4R5ST	45			5	126 *2	120	-55 to 175	0.74	5	15μA	187	-	TBD	○	SL series	
★D5CE6ST	60			5	120 *2	120	-55 to 175	0.78	5	15μA	148	-	TBD	○	SL series	
★D5CE10ST	100			5	112 *2	120	-55 to 175	0.86	5	15μA	104	-	TBD	○	SL series	
★D5CE12ST	120			5	111 *2	120	-55 to 175	0.87	5	15μA	100	-	TBD	○	SL series	
★D5CE15ST	150			5	111 *2	120	-55 to 175	0.88	5	15μA	92	-	TBD	○	SL series	
DO-214AA similar M2F	B6	M2FH3	30	6	70	110	125	0.36	6	4	240	-	-	-	H series	
		M2FM3	30	6	99	120	150	0.46	6	0.2	240	-	○	○	M series	
2F	B9-1	D2FS6	60	1.5	31 *1	60	150	0.58	2	2	120	-	-	○	S series	
		D2FS4	40	1.6	34 *1	60	150	0.55	1.6	2.5	150	-	-	○	S series	
		D3FS4A	40	2.6	34 *1	150	150	0.45	2.6	5	340	-	○	○	S series	
		D3FS6	60	3	87 *2	80	150	0.58	3	2.5	130	-	-	○	S series	
		D3FJ10	100	3	92 *2	100	150	0.74	3	0.4	143	-	-	○	J series	



★ : Under development *1 : Ta *2 : Tl ■ : Please contact us.


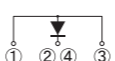
SCHOTTKY BARRIER DIODES

Single

Surface Mount											
Package	JEDEC Code JEITA Code House Name	Fig.	IF(AV) [A]	VRRM[V]						Remarks	
				30	40	45	60	100	150	200	
 9.5 × 6.6 × 2.65(mm)	- SC-63 E-pack	G1-2	3		DE3S4M		DE3S6M				
			5		DE5S4M		DE5S6M				
		G1-4	10	DE10S3L							
 6.5 × 4.5 × 1.1(mm)	TO-277A similar - FY	G4-1	5			D5FY4R5ST	D5FY6ST	D5FY10ST	D5FY15ST	D5FY20SN	
			10			D10FY4R5ST	D10FY6ST	D10FY10ST	D10FY15ST		
			15			D15FY4R5ST	D15FY6ST	D15FY10ST	D15FY15ST		
 9.6 × 6.6 × 2.3(mm)	TO-252AA similar - FR	G5	15			D15FR4ST					
			20			D20FR4ST	D20FR4R5S				

Axial						
Package	JEDEC Code JEITA Code House Name	Fig.	IF(AV) [A]	VRRM[V]		Remarks
				40	60	
 3.0 × φ 2.6(mm)	- AX057	A1	1	D1NS4	D1NS6	
 5.0 × φ 4.0(mm)	- AX078	A4-1	2	D2S4M	D2S6M	
 7.0 × φ 4.4(mm)	- AX14	A7	3	D3S4M	D3S6M	

Two Terminal Type								
Package	JEDEC Code JEITA Code House Name	Fig.	IF(AV) [A]	VRRM[V]				Remarks
				40	60	90	150	
 28.5 × 10.0 × 4.5(mm)	- SC-91 FTO-220G	J4	5	SG5S4M	SG5S6M	SG5S9M		

Three Terminal Type								
Package	JEDEC Code JEITA Code House Name	Fig.	IF(AV) [A]	VRRM[V]				Remarks
				40	60	90	150	
 41.0 × 16.0 × 5.0(mm)	TO-247AD - MTO-3PV	K7-2	40				S40T15V	
			90				S90T15V	

Single

Surface Mount															
Package		Type No.	Absolute Maximum Ratings					Electrical Characteristics				Halogen free	Based on AEC-Q101	Automotive	Series
JEDEC Code JEITA Code House Name	Fig.		VRRM [V]	IF (AV) [A]	Conditions Tc [°C]	IFSM [A]	Tj [°C]	Vf (max) [V]	Conditions IF [A]	Ir (max) Vr=VRRM [mA]	Ct (typ) [pF]				
- SC-63 E-pack	G1-2	DE3S4M	40	3	121	70	150	0.55	3	2.5	150	-	-	-	S series
		DE3S6M	60	3	117	80	150	0.58	3	2.5	130	-	-	-	S series
		DE5S4M	40	5	101	80	150	0.55	5	3.5	180	-	-	-	S series
		DE5S6M	60	5	96	90	150	0.58	5	4.5	200	-	-	-	S series
	G1-4	DE10S3L	30	10	124	250	150	0.45	8	10	640	-	-	-	S series
TO-277A similar - FY	G4-1	D5FY4R5ST	45	5	165 *2	240	-55 to 175	0.74	5	15μA	187	○	○	○	SL series
		D5FY4R5SY	45	5	138 *2	220	-55 to 150	0.59	5	0.2	155	○	○	○	Y series
		D5FY6ST	60	5	164 *2	210	-55 to 175	0.78	5	15μA	148	○	○	○	SL series
		D5FY6SY	60	5	138 *2	210	-55 to 150	0.67	5	0.2	170	○	○	○	Y series
		D5FY10ST	100	5	162 *2	210	-55 to 175	0.86	5	15μA	104	○	○	○	SL series
		D5FY10SY	100	5	132 *2	130	-55 to 150	0.8	5	0.2	141	○	○	○	Y series
		D5FY15ST	150	5	162 *2	210	-55 to 175	0.88	5	15μA	92	○	○	○	SL series
		D5FY20SN	200	5	163 *2	210	-55 to 175	0.87	5	5μA	111	○	○	○	SL series
		D10FY4R5ST	45	10	155 *2	250	-55 to 175	0.74	10	30μA	330	○	○	○	SL series
		D10FY4R5SY	45	10	126 *2	290	-55 to 150	0.59	10	0.4	302	○	○	○	Y series
		D10FY6ST	60	10	154 *2	230	-55 to 175	0.78	10	30μA	263	○	○	○	SL series
		D10FY6SY	60	10	127 *2	250	-55 to 150	0.67	10	0.4	262	○	○	○	Y series
		D10FY10ST	100	10	152 *2	230	-55 to 175	0.86	10	30μA	185	○	○	○	SL series
		D10FY10SY	100	10	118 *2	260	-55 to 150	0.8	10	0.4	253	○	○	○	Y series
		D10FY15ST	150	10	149 *2	230	-55 to 175	0.88	10	30μA	159	○	○	○	SL series
		D15FY4R5ST	45	15	145 *2	270	-55 to 175	0.74	15	40μA	398	○	○	○	SL series
		D15FY4R5SY	45	15	116 *2	310	-55 to 150	0.59	15	0.5	410	○	○	○	Y series
		D15FY6ST	60	15	143 *2	250	-55 to 175	0.78	15	40μA	345	○	○	○	SL series
		D15FY6SY	60	15	117 *2	280	-55 to 150	0.67	15	0.5	345	○	○	○	Y series
		D15FY10ST	100	15	141 *2	250	-55 to 175	0.86	15	40μA	242	○	○	○	SL series
D15FY10SY	100	15	114 *2	280	-55 to 150	0.83	15	0.5	297	○	○	○	Y series		
D15FY15ST	150	15	138 *2	230	-55 to 175	0.88	15	40μA	209	○	○	○	SL series		
TO-252AA similar - FR	G5	D15FR4ST	40	15	152	250	-55 to 175	0.74	15	40μA	398	-	○	■	SL series
		D20FR4ST	40	20	149	400	-55 to 175	0.74	20	60μA	600	-	○	■	SL series
		D20FR4R5S	45	20	118	300	-55 to 150	0.55	20	2.8	625	-	○	○	S series

*2 : TI ■ : Please contact us.

Axial															
Package		Type No.	Absolute Maximum Ratings					Electrical Characteristics				Halogen free	Based on AEC-Q101	Automotive	Series
JEDEC Code JEITA Code House Name	Fig.		VRRM [V]	IF (AV) [A]	Conditions Ta [°C]	IFSM [A]	Tj [°C]	Vf (max) [V]	Conditions IF [A]	Ir (max) Vr=VRRM [mA]	Ct (typ) [pF]				
- AX057	A1	D1NS4	40	1	59	30	150	0.55	1	0.8	50	-	-	-	S series
		D1NS6	60	1	46	30	150	0.58	1	1	53	-	-	-	S series
- AX078	A4-1	D2S4M	40	2	122 *1	60	150	0.55	2	2	95	-	-	-	S series
		D2S6M	60	2	119 *1	60	150	0.58	2	2	90	-	-	-	S series
- AX14	A7	D3S4M	40	3	63	80	150	0.55	3	3.5	150	-	-	-	S series
		D3S6M	60	3	133 *1	80	150	0.58	3	2.5	130	-	-	-	S series





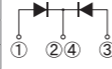

*1 : TI

Two Terminal Type															
Package		Type No.	Absolute Maximum Ratings					Electrical Characteristics				Halogen free	Based on AEC-Q101	Automotive	Series
JEDEC Code JEITA Code House Name	Fig.		VRRM [V]	IF (AV) [A]	Conditions Tc [°C]	IFSM [A]	Tj [°C]	Vf (max) [V]	Conditions IF [A]	Ir (max) Vr=VRRM [mA]	Ct (typ) [pF]				
- SC-91 FTO-220G	J4	SG5S4M	40	5	131	150	150	0.52	5	0.5	157	-	-	-	S series
		SG5S6M	60	5	130	120	150	0.56	5	0.5	165	-	-	-	S series
		SG5S9M	90	5	124	90	150	0.75	5	0.5	140	-	-	-	S series

Three Terminal Type															
Package		Type No.	Absolute Maximum Ratings					Electrical Characteristics				Halogen free	Based on AEC-Q101	Automotive	Series
JEDEC Code JEITA Code House Name	Fig.		VRRM [V]	IF (AV) [A]	Conditions Tc [°C]	IFSM [A]	Tj [°C]	Vf (max) [V]	Conditions IF [A]	Ir (max) Vr=VRRM [mA]	Ct (typ) [pF]				
TO-247AD - MTO-3PV	K7-2	S40T15V	150	40	131	700	150	0.92	40	0.12	595	-	-	○	N series
		S90T15V	150	90	122	1400	150	0.95	90	0.35	1690	-	-	○	N series


SCHOTTKY BARRIER DIODES

Center Tap, Common Cathode

Surface Mount											Remarks	
Package	JEDEC Code JEITA Code House Name	Fig.	IF (AV) [A]	VRRM[V]						Remarks		
				30	40	60	90	100	120			150
 9.5 × 6.6 × 2.65(mm)	— SC-63 E-pack	G1-1	5	DE5SC3ML	DE5SC4M	DE5SC6M						
			10	DE10SC3L	DE10SC4							
 9.5 × 6.6 × 2.65(mm)	TO-252AB similar SC-63 FE	G3-1	5	 D5FEC3SH								
			6		D6FEC4ST			D6FEC10ST	D6FEC12ST	D6FEC15ST		
 13.2 × 10.2 × 4.7(mm)	— SC-83 similar STO-220	H1-1	10		DF10SC4M	DF10SC6	DF10SC9				DF10NC15	
			15		DF15SC4M			DF15JC10		DF15NC15		
			20		DF20SC4M		DF20SC9M	DF20JC10	DF20NC15			
			25			DF25SC6M						
			30	DF30SC3ML	DF30JC4 DF30SC4M	DF30JC6		DF30JC10	DF30NC15			
 13.2 × 10.2 × 4.6(mm)	— SC-83 similar FD	H2-2	10						D10FDC10ST			
			20						D20FDC10ST		D20FDC15ST	
			30		D30FDC4S				D30FDC10ST		D30FDC15ST	
			40						D40FDC10ST		D40FDC15ST	

 : New product


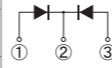

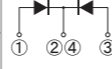

Center Tap, Common Cathode


Surface Mount																		
JEDEC Code JEITA Code House Name	Package	Fig.	Type No.	Absolute Maximum Ratings					Electrical Characteristics					Halogen free	Based on AEC-Q101	Automotive	Series	
				VRRM [V]	IF (AV) [A]	Conditions Tc [°C]	IFSM [A]	Tj [°C]	VF (max) [V]	Conditions IF [A]	Ir (max) VR=VRRM [mA]	Ct (typ) [pF]						
— SC-63 E-pack	G1-1		DE5SC3ML	30	5	110	90	150	0.45	2.5	3.5	190	—	—	■	S series		
			DE5SC4M	40	5	101	80	150	0.55	2.5	3.5	150	—	—	■	S series		
			DE5SC6M	60	5	92	80	150	0.58	2.5	2.5	130	—	—	■	S series		
			DE10SC3L	30	10	124	100	150	0.45	4	5	290	—	—	■	S series		
TO-252AB similar SC-63 FE	G3-1		 D5FEC3SH	30	5	110	100	-55 to 125	0.4	2.5	1.3	91	—	—	—	H series		
			D6FEC4ST	40	6	158	90	175	0.74	3	8μA	93	—	○	○	SL series		
			D6FEC10ST	100	6	154	100	175	0.86	3	8μA	60	—	○	○	SL series		
			D6FEC12ST	120	6	154	100	175	0.87	3	8μA	60	—	○	○	SL series		
			D6FEC15ST	150	6	154	100	175	0.88	3	8μA	52	—	○	○	SL series		
			DF10SC4M	40	10	125	100	150	0.55	5	3.5	180	—	—	—	S series		
			DF10SC6	60	10	132	150	150	0.58	5	4.5	260	—	—	—	S series		
			DF10SC9	90	10	131	150	150	0.75	5	3	185	—	—	—	S series		
			DF10NC15	150	10	123	100	150	0.88	5	0.2	110	—	—	—	N series		
			DF15SC4M	40	15	129	150	150	0.55	7.5	5	340	—	—	—	S series		
— SC-83 similar STO-220	H1-1		DF15JC10	100	15	126	150	150	0.86	7.5	0.6	200	—	—	—	J series		
			DF15NC15	150	15	126	150	150	0.88	7.5	0.3	155	—	—	—	N series		
			DF20SC4M	40	20	122	230	150	0.55	10	7.5	390	—	—	—	S series		
			DF20SC9M	90	20	111	200	150	0.75	10	10	370	—	—	—	S series		
			DF20JC10	100	20	121	200	150	0.86	10	0.7	260	—	—	—	J series		
			DF20NC15	150	20	121	200	150	0.88	10	0.4	200	—	—	—	N series		
			DF25SC6M	60	25	115	300	150	0.58	12.5	10	490	—	—	—	S series		
			DF30SC3ML	30	30	119	350	150	0.48	15	10	820	—	—	—	S series		
			DF30JC4	40	30	115	250	150	0.61	15	0.7	560	—	—	—	J series		
			DF30SC4M	40	30	112	360	150	0.55	15	10	590	—	—	—	S series		
			DF30JC6	60	30	108	250	150	0.69	15	0.7	490	—	—	—	J series		
			DF30JC10	100	30	116	300	150	0.86	15	1	390	—	—	—	J series		
			DF30NC15	150	30	115	300	150	0.88	15	0.5	300	—	—	—	N series		
			DF40SC3L	30	40	112	400	150	0.45	15	17	1200	—	—	—	S series		
			DF40SC4	40	40	106	350	150	0.55	20	14	860	—	—	—	S series		
		— SC-83 similar FD	H2-2		D10FDC10ST	100	10	158	150	175	0.86	5	15μA	104	—	○	○	SL series
					D20FDC10ST	100	20	119	250	150	0.86	10	30μA	185	—	○	○	N series
					D20FDC15ST	150	20	118	250	150	0.88	10	30μA	159	—	—	○	N series
	D30FDC4S			40	30	114	300	150	0.55	15	1.5	415	—	○	○	S series		
	D30FDC10ST			100	30	108	300	150	0.86	15	40μA	242	—	—	○	N series		
	D30FDC15ST			150	30	107	300	150	0.88	15	40μA	209	—	—	○	N series		
	D40FDC10ST			100	40	105	400	150	0.86	20	60μA	360	—	—	—	N series		
	D40FDC15ST			150	40	103	400	150	0.88	20	60μA	315	—	—	—	N series		

 : New product  : Please contact us.

SCHOTTKY BARRIER DIODES

Center Tap, Common Cathode

Three Terminal Type														
Package	JEDEC Code JEITA Code House Name	Fig.	IF (AV) [A]	VRRM[V]								Remarks		
				15	30	40	60	90	100	120	150		650	
 28.5 × 10.0 × 4.5(mm)	SC-91 FTO-220G	J9	8			SG8SC4M								
			10		SG10SC3LM	SG10SC4M	SG10SC6M	SG10SC9M				SG10TC15M		
			15		SG15SC4M	SG15SC6M								
			20		SG20SC3LM	SG20SC4M	SG20JC6M SG20SC6M	SG20SC9M	SG20TC10M	SG20TC12M	SG20TC15M			
			30		SG30SC3LM	SG30SC4M	SG30JC6M SG30SC6M		SG30TC10M	SG30TC12M	SG30TC15M			
 41.0 × 16.0 × 5.0(mm)	TO-247AD MTO-3PT	K5-2	20											
			30			S30SC4MT	S30SC6MT				S30TC15T			
			40	S40HC1R5T		S60HC3T S60SC3LT	S60SC4MT	S60SC6MT						
			60	S60HC1R5T										
 41.0 × 16.0 × 5.0(mm)	TO-247AD MTO-3PV	K7-1	20									S20SC65WV		
			60							S60JC10V				

 : New product


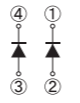
Center Tap, Common Cathode

Three Terminal Type																	
JEDEC Code JEITA Code House Name	Package	Fig.	Type No.	Absolute Maximum Ratings					Electrical Characteristics					Halogen free	Based on AEC-Q101	Automotive	Series
				VRRM [V]	IF (AV) [A]	Conditions Tc [°C]	IFSM [A]	Tj [°C]	VF (max) [V]	Conditions IF [A]	Ir (max) VR=VRRM [mA]	Ct (typ) [pF]					
SC-91 FTO-220G	J9		SG8SC4M	40	8	155	80	175	0.56	4	0.3	100	-	-	-	S series	
			SG10SC3LM	30	10	136	150	150	0.45	4	5	310	-	-	-	S series	
			SG10SC4M	40	10	150	150	175	0.52	5	0.5	157	-	-	-	S series	
			SG10SC6M	60	10	145	140	175	0.56	5	0.5	165	-	-	-	S series	
			SG10SC9M	90	10	139	150	175	0.75	5	0.5	140	-	-	-	S series	
			SG10TC15M	150	10	153	120	175	0.88	5	15μA	92	-	-	-	SL series	
			SG15SC4M	40	15	117	150	150	0.52	7.5	0.8	230	-	-	-	S series	
			SG15SC6M	60	15	113	180	150	0.61	7.5	0.6	185	-	-	-	S series	
			SG20SC3LM	30	20	124	250	150	0.45	8	9	570	-	-	-	S series	
			SG20SC4M	40	20	115	200	150	0.52	10	1.1	315	-	-	-	S series	
			SG20JC6M	60	20	106	200	150	0.69	10	0.1	250	-	-	-	J series	
			SG20SC6M	60	20	107	200	150	0.61	10	0.8	250	-	-	-	S series	
			SG20SC9M	90	20	112	200	150	0.75	10	1	245	-	-	-	S series	
			SG20TC10M	100	20	140	200	175	0.86	10	30μA	185	-	-	-	SL series	
			SG20TC12M	120	20	137	200	175	0.87	10	30μA	175	-	-	-	SL series	
			SG20TC15M	150	20	136	200	175	0.88	10	30μA	159	-	-	-	SL series	
			SG30SC3LM	30	30	117	350	150	0.45	12.5	15	960	-	-	-	M series	
			SG30SC4M	40	30	101	300	150	0.55	15	1.5	415	-	-	-	S series	
			SG30JC6M	60	30	90	250	150	0.69	15	0.15	325	-	-	-	J series	
			SG30SC6M	60	30	100	300	150	0.61	15	1.2	385	-	-	-	S series	
			SG30TC10M	100	30	126	300	175	0.86	15	40μA	242	-	-	-	SL series	
			SG30TC12M	120	30	122	300	175	0.87	15	40μA	228	-	-	-	SL series	
			SG30TC15M	150	30	122	300	175	0.88	15	40μA	209	-	-	-	SL series	
			SG40TC10M	100	40	116	350	175	0.86	20	60μA	362	-	-	-	SL series	
			SG40TC12M	120	40	112	350	175	0.87	20	60μA	336	-	-	-	SL series	
			TO-247AD MTO-3PT	K5-2		S20SC9MT	90	20	136	200	150	0.75	10	1	245	-	-
S30SC4MT	40	30				132	300	150	0.55	15	1.5	410	-	-	-	S series	
S30SC6MT	60	30				129	300	150	0.61	15	1.2	385	-	-	-	S series	
S30TC15T	150	30				128	300	150	0.88	15	40μA	209	-	-	-	N series	
S40HC1R5T	15	40				111	450	125	0.41	20	10	960	-	-	-	H series	
S60HC1R5T	15	60				110	600	125	0.41	30	15	1400	-	-	-	H series	
S60HC3T	30	60				112	650	125	0.40	30	20	1100	-	-	-	H series	
S60SC3LT	30	60				138	650	150	0.48	30	25	1600	-	-	-	S series	
S60SC4MT	40	60				127	500	150	0.55	30	3	790	-	-	-	S series	
S60SC6MT	60	60				121	470	150	0.67	30	2	640	-	-	-	S series	
TO-247AD MTO-3PV	K7-1		S60JC10V	100	60	118	500	150	0.95	30	0.2	695	-	-	○	J series	
			S20SC65WV	650	20	125	55	-55 to 175	1.9	10	0.1	170	-	-	-	W series	


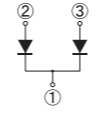

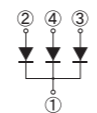
 : New product

SCHOTTKY BARRIER DIODES

Array

Surface Mount						
Package	JEDEC Code JEITA Code House Name	Fig.	I _{F(AV)} [A]	V _{RRM} [V]		Remarks
				40	60	
 7.0 × 4.7 × 2.6(mm)	TO-269AA — 1Z	C2-2	1.2	S1ZAS4		

Diode Module

Diode Module						
Package	JEDEC Code JEITA Code House Name	Fig.	I _{F(AV)} [A]	V _{RRM} [V]		Remarks
				40	60	
 43.0 × 27.0 × 21.0(mm)	— — Module	F1	120	D120SC4M	D120SC6M	
			240	D240SC4M	D240SC6M	
 43.0 × 27.0 × 21.0(mm)		F3-1	180	D180SC4M	D180SC6M	
				360	D360SC4M	

Array

Surface Mount															
Package		Type No.	Absolute Maximum Ratings					Electrical Characteristics				Halogen free	Based on AEC-Q101	Automotive	Series
JEDEC Code JEITA Code House Name	Fig.		V _{RRM} [V]	I _{F(AV)} [A]	Conditions T _a [°C]	I _{FSM} [A]	T _j [°C]	V _F (max) [V]	Conditions I _F [A]	I _R (max) V _R =V _{RRM} [mA]	C _t (typ) [pF]				
TO-269AA — 1Z	C2-2	S1ZAS4	40	1.2	47	40	150	0.55	1	1	65	—	—	—	S series

Diode Module

Diode Module															
Package		Type No.	Absolute Maximum Ratings					Electrical Characteristics				Halogen free	Based on AEC-Q101	Automotive	Series
JEDEC Code JEITA Code House Name	Fig.		V _{RRM} [V]	I _{F(AV)} [A]	Conditions T _c [°C]	I _{FSM} [A]	T _j [°C]	V _F (max) [V]	Conditions I _F [A]	I _R (max) V _R =V _{RRM} [mA]	C _t (typ) [pF]				
— — Module	F1	D120SC4M	40	120	90	800	125	0.58	60	40	2.1	—	—	—	S series
		D120SC6M	60	120	85	800	125	0.67	60	40	2.2	—	—	—	S series
		D240SC4M	40	240	77	1600	125	0.6	120	80	4.2	—	—	—	S series
	F3-1	D240SC6M	60	240	71	1600	125	0.67	120	80	4.4	—	—	—	S series
		D180SC4M	40	180	83	800	125	0.58	60	40	2.1	—	—	—	S series
		D180SC6M	60	180	78	800	125	0.67	60	40	2.2	—	—	—	S series
		D360SC4M	40	360	64	1600	125	0.6	120	80	4.2	—	—	—	S series
		D360SC6M	60	360	58	1600	125	0.67	120	80	4.4	—	—	—	S series












FAST RECOVERY DIODES

Fast Recovery Diodes are high speed type PN junction rectifying devices.

These diodes for the switching of power supply are suitable for use in household appliances, OA apparatuses, and FA apparatuses.

Series	Feature
K	Low Vf
ML	Low Vf, Low trr, Soft Recovery
US	Ultra Fast, Soft Recovery
A	Ultra Fast, Low Vf

Single

Surface Mount												Remarks	
Package	JEDEC Code JEITA Code House Name	Fig.	If (AV) [A]	VRRM[V]						Remarks			
				200	400	600	700	800	1000		1200		
	DO-219AA similar - M1F	B2	1			M1FK60							
			1.1	M1FL20U									
			1.5		M1FL40U								
	DO-214AC - 1F	B3-1	0.8			D1FK60	D1FK70				D1FK100	D1FK120P D1FK120	
			1										
			1.1	D1FL20U									
	DO-214AC - CF	2									D2CF60K		① ← → ②
	SC-110B CE	B5-1	2								★ D2CE80K		
			3	D3CE20LUS			D3CE60K						
	DO-214AA similar - M2F	B6	1.5	M2FL20U									
			3	M3FL20U									
			1.5	D2FL20U			D2FK60						
	-	B9-1	2			D2FL40U							
			2.1				D3FK60						
			2.2									D3FK120	
	SC-63 E-pack	G1-5	3	DE3L20UA									①④ ② N.C. ③
			5				DE5L60U DE5L60A						
	TO-277A similar - FY	G4-1	5								D5FY60K		① ②③
	SC-83 similar STO-220	H1-2	8								DF8L60US		①②④ ③
			10								DF10L60		
			20									DF20L60 DF20L60U	
	TO-252AA similar - FR	G5	10								D10FR60LA		① ②④ ③
			15								D15FR60LA		
	SC-83 similar FD	H2-1	8								D8FD60LUS		
			20									D20FD60LU	
			30								D30FD60K		

★ : Under development

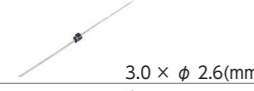


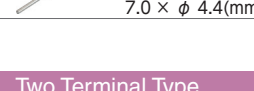
Single

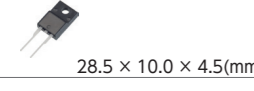

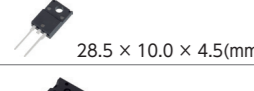

Surface Mount																
JEDEC Code JEITA Code House Name	Fig.	Type No.	Absolute Maximum Ratings					Electrical Characteristics					Halogen free	Based on AEC-Q101	Automotive	Series
			VRRM [V]	IF (AV) [A]	Conditions Tc [°C]	IFSM [A]	Tj [°C]	Vf (max) [V]	Conditions IF [A]	Ir (max) Vr=VRRM [μA]	trr (max) [ns]					
DO-219AA similar - M1F	B2	M1FK60	600	1	116 *1	15	150	1.5	1	10	75	-	○	○	K series	
		M1FL20U	200	1.1	25 *2	30	150	0.98	1.1	10	35	-	○	○	-	
		M1FL40U	400	1.5	139	30	175	1.2	1	10	25	-	■	○	-	
DO-214AC - 1F	B3-1	D1FK60	600	0.8	29 *2	20	150	1.3	0.8	10	75	-	○	○	K series	
		D1FK70	700	0.8	32 *2	25	150	1.3	0.8	10	400	-	○	○	-	
		D1FK100	1000	1	97 *1	20	150	2.1	1	10	75	-	○	○	K series	
		D1FK120P	1200	1	79 *1	18	-55 to 150	3.0	1	10	85	-	○	■	K series	
		D1FK120	1200	1	75 *1	20	150	3.0	1	10	120	-	-	■	K series	
		D1FL20U	200	1.1	25 *2	20	150	0.98	1.1	10	35	-	○	○	-	
DO-214AC - CF		D1FL40U	400	1.5	103 *1	30	150	1.2	1	10	25	-	○	○	-	
		D2CF60K	600	2	90 *1	35	-55 to 150	1.57	2	10	75	-	○	○	K series	
SC-110B CE	B5-1	★ D2CE80K	800	2	75 *1	70	150	2.0	2	10	150	-	TBD	○	K series	
		D3CE20LUS	200	3	105 *1	60	-55 to 150	0.98	3	10	25	-	○	○	-	
DO-214AA similar - M2F	B6	D3CE60K	600	3	78 *1	50	150	1.45	3	10	80	-	○	○	K series	
		M2FL20U	200	1.5	31 *2	50	150	0.92	1.5	10	35	-	-	○	-	
-	B9-1	M3FL20U	200	3	75 *1	75	150	0.95	3	10	35	-	○	○	-	
		D2FL20U	200	1.5	25 *2	50	150	0.98	1.5	10	35	-	○	○	-	
		D2FK60	600	1.5	101 *1	40	150	1.3	1.5	10	75	-	-	○	K series	
-	2F	D2FL40U	400	2	100 *1	95	-55 to 150	1.25	2	10	35	-	-	-	-	
		D3FK60	600	2.1	93 *1	120	150	1.2	2.1	10	75	-	-	○	K series	
		D3FK120	1200	2.2	91 *1	160	-55 to 150	2.1	3	10	80	-	-	-	K series	
SC-63 E-pack	G1-5	DE3L20UA	200	3	137	60	150	0.98	3	10	35	-	-	■	-	
		DE5L60U	600	5	91	60	150	3.0	5	25	25	-	-	■	-	
		DE5L60A	600	5	119	60	150	2.0	5	10	50	-	-	■	-	
TO-277A similar - FY	G4-1	D5FY60K	600	5	130 *1	200	-55 to 150	1.25	5	10	95	○	-	■	K series	
SC-83 similar STO-220	H1-2	DF8L60US	600	8	66	60	150	3.6	8	50	25	-	-	-	US series	
		DF10L60	600	10	105	100	150	1.9	10	10	50	-	-	-	-	
		DF20L60	600	20	84	170	150	1.9	20	25	70	-	-	-	-	
TO-252AA similar - FR	G5	DF20L60U	600	20	93	160	150	3.0	20	25	35	-	-	-	-	
		D10FR60LA	600	10	110	140	-55 to 150	2.1	10	10	28	-	○	■	A series	
		D15FR60LA	600	15	95	220	-55 to 150	2.1	15	10	30	-	○	■	A series	
SC-83 similar FD	H2-1	D8FD60LUS	600	8	120	60	175	3.6	8	50	25	-	-	○	US series	
		D20FD60LU	600	20	93	160	150	3.0	20	25	35	-	○	○	-	
		D30FD60K	600	30	102	300	150	1.7	30	10	95	-	-	■	K series	




★ : Under development *1 : Tl *2 : Ta ■ : Please contact us.

FAST RECOVERY DIODES

Single

Package	JEDEC Code JEITA Code House Name	Fig.	IF(AV) [A]	VRRM[V]				Remarks
				200	400	600	1000	
 3.0 x phi 2.6(mm)	— AX057	A1	0.8			D1NF60 D1NK60	① ← → ②	
			1	D1NL20U	D1NL40U			D1NK100
 5.0 x phi 4.0(mm)	— AX078	A4-1	1.5	D2L20U			① ← → ②	
			2		D2L40U			
 7.0 x phi 4.4(mm)	— AX10	A5-1	1.5	S2L20U		S2L60	① ← → ②	
			2		S2L40U			S2K100
 7.0 x phi 4.4(mm)	— AX14	A7	2.2			S3L60	① ← → ②	
			3	S3L20U	S3L40U	S3K60		

Package	JEDEC Code JEITA Code House Name	Fig.	IF(AV) [A]	VRRM[V]			Remarks
				200	400	600	
 28.5 x 10.0 x 4.5(mm)	— SC-91A FTO-220	J1	3			SF3L60U	① ② → ③
			5			SF5L60U	
			10			SF10L60U	
			20			SF20L60U	
			3			SF3K60M	
 28.5 x 10.0 x 4.5(mm)	— SC-91 FTO-220AG	J3	3		SF5L40UM	SF5K60M	① ② → ③
			5			SF8K60USM SF8K60M	
			8			SF10K60M SF10L60MVM SF10L60MSM SF10L60AM	
			10			SF20K60M SF20L60MVM SF20L60MSM SF20L60AM	
			20				
 28.5 x 10.0 x 4.5(mm)	— SC-91 FTO-220G	J4	5	SG5L20USM			① ② → ③
			10	SG10L20USM			
 41.0 x 16.0 x 5.0(mm)	TO-247AD — MTO-3PT	K2	20			S20K60T	① ②④ → ③
			30			S30K60T	

Package	JEDEC Code JEITA Code House Name	Fig.	IF(AV) [A]	VRRM[V]			Remarks
				600	1000	1200	
 41.0 x 16.0 x 5.0(mm)	TO-247AD — MTO-3PV	K6	20		S20K100V		① ②④ → ③
			30	S30K60V	S30K100V		
 41.0 x 16.0 x 5.0(mm)		K7-2	60			 S60L120V	① ②④ → ③

 : New product


Single

Package		Type No.	Absolute Maximum Ratings					Electrical Characteristics				Halogen free	Based on AEC-Q101	Automotive	Series
JEDEC Code JEITA Code House Name	Fig.		VRRM [V]	IF (AV) [A]	Conditions Ta [°C]	IFSM [A]	Tj [°C]	Vf (max) [V]	Conditions IF [A]	Ir (max) Vr=VRRM [μA]	ttr (max) [ns]				
— AX057	A1	D1NF60	600	0.8	25	50	150	1.3	0.8	10	400	—	—	—	—
		D1NK60	600	0.8	26	35	150	1.3	0.8	10	75	—	—	—	K series
		D1NL20U	200	1	25	25	150	0.98	1	10	35	—	—	—	—
		D1NL40U	400	1	137 *1	50	150	1.25	1	10	25	—	—	—	—
— AX078	A4-1	D2L20U	200	1.5	125 *1	40	150	0.98	1.5	10	35	—	—	—	—
		D2L40U	400	2	108 *1	80	150	1.25	2	10	35	—	—	—	—
— AX10	A5-1	S2L20U	200	1.5	25	50	150	0.98	1.5	10	35	—	—	—	—
		S2L60	600	1.5	125 *1	50	150	1.5	1.5	10	50	—	—	—	—
		S2L40U	400	2	120 *1	100	150	1.25	2	10	35	—	—	—	—
— AX14	A7	S2K100	1000	2	91 *1	65	150	2.1	2	10	75	—	—	—	K series
		S3L60	600	2.2	132 *1	60	150	1.5	2.2	10	50	—	—	—	—
		S3L20U	200	3	128 *1	60	150	0.98	2.1	10	35	—	—	—	—
		S3L40U	400	3	126 *1	150	150	1.25	3	10	35	—	—	—	—
		S3K60	600	3	123 *1	120	150	1.3	3	10	100	—	—	—	K series

*1 : Tl

Package		Type No.	Absolute Maximum Ratings					Electrical Characteristics				Halogen free	Based on AEC-Q101	Automotive	Series
JEDEC Code JEITA Code House Name	Fig.		VRRM [V]	IF (AV) [A]	Conditions Tc [°C]	IFSM [A]	Tj [°C]	Vf (max) [V]	Conditions IF [A]	Ir (max) Vr=VRRM [μA]	ttr (max) [ns]				
— SC-91A FTO-220	J1	SF3L60U	600	3	115	40	150	3.00	3	25	20	—	—	—	—
		SF5L60U	600	5	96	60	150	3.00	5	25	25	—	—	—	—
		SF10L60U	600	10	85	120	150	3.00	10	25	25	—	—	■	—
		SF20L60U	600	20	68	180	150	3.00	20	25	35	—	—	■	—
— SC-91 FTO-220AG	J3	SF3K60M	600	3	132	90	150	1.45	3	10	80	—	—	—	K series
		SF5L40UM	400	5	121	100	150	1.25	5	10	30	—	—	■	—
		SF5K60M	600	5	119	120	150	1.50	5	10	85	—	—	■	K series
		SF8K60USM	600	8	70	60	150	3.60	8	50	25	—	—	—	US series
		SF8K60M	600	8	108	150	150	1.50	8	10	90	—	—	■	K series
		SF10K60M	600	10	106	180	150	1.50	10	10	95	—	—	—	K series
		SF10L60MVM	600	10	119	200	150	1.10	10	10	115	—	—	■	ML series
		SF10L60MSM	600	10	110	160	150	1.37	10	10	60	—	—	■	ML series
		SF10L60AM	600	10	106	180	-55 to 150	2.10	10	10	28	—	—	—	A series
		SF20K60M	600	20	96	240	150	1.50	20	10	95	—	—	—	K series
		SF20L60MVM	600	20	106	250	150	1.10	20	10	130	—	—	■	ML series
		SF20L60MSM	600	20	96	220	150	1.37	20	10	70	—	—	■	ML series
SF20L60AM	600	20	77	260	-55 to 150	2.10	20	10	35	—	—	—	A series		
— SC-91 FTO-220G	J4	SG5L20USM	200	5	125	90	150	0.96	5	10	25	—	—	—	—
		SG10L20USM	200	10	101	200	150	0.96	10	10	25	—	—	—	—
TO-247AD — MTO-3PT	K2	S20K60T	600	20	121	300	150	1.50	20	10	95	—	—	—	K series
		S30K60T	600	30	123	450	150	1.50	30	10	100	—	—	—	K series


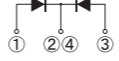


■ : Please contact us.


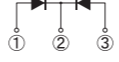

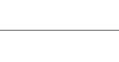

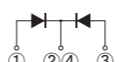

Package		Type No.	Absolute Maximum Ratings					Electrical Characteristics				Halogen free	Based on AEC-Q101	Automotive	Series
JEDEC Code JEITA Code House Name	Fig.		VRRM [V]	IF (AV) [A]	Conditions Tc [°C]	IFSM [A]	Tj [°C]	Vf (max) [V]	Conditions IF [A]	Ir (max) Vr=VRRM [μA]	ttr (max) [ns]				
TO-247AD — MTO-3PV	K6	S20K100V	1000	20	127	550	150	2.10	20	10	120	—	—	○	K series
		S30K60V	600	30	108	450	150	1.50	30	10	100	—	—	○	K series
		S30K100V	1000	30	116	600	150	2.10	30	10	120	—	—	○	K series
	K7-2	 S60L120V	1200	60	63	450	-55 to 150	2.7	60	100	300	—	—	—	—

 : New product

FAST RECOVERY DIODES

Center Tap, Common Cathode

Surface Mount								
Package	JEDEC Code JEITA Code House Name	Fig.	I _{F(AV)} [A]	V _{RRM} [V]				Remarks
				200	300	400	600	
 9.5 × 6.6 × 2.65(mm)	SC-63 E-pack	G1-1	5	DE5LC20U				
 13.2 × 10.2 × 4.7(mm)	SC-83 similar STO-220	H1-1	10	DF10LC20U	DF10LC30			
			20	DF20LC20US	DF20LC30			
 13.2 × 10.2 × 4.6(mm)	SC-83 similar FD	H2-2	20	D20FDC20L D20FDC20LUS				

Three Terminal Type								
Package	JEDEC Code JEITA Code House Name	Fig.	I _{F(AV)} [A]	V _{RRM} [V]				Remarks
				200	300	400	600	
 28.5 × 10.0 × 4.5(mm)	SC-91 FTO-220AG	J8-1	5			SF5LC40UM		
			10			SF10LC40UM	SF10KC60M	
			20		SF20LC30M		SF20KC60M	
 28.5 × 10.0 × 4.5(mm)	SC-91 FTO-220G	J9	5	SG5LC20USM				
			10	SG10LC20USM				
			20	SG20LC20USM				
 41.0 × 16.0 × 5.0(mm)	TO-247AD MTO-3PT	K5-2	20	S20LC20UST	S20LC30T	S20LC40UT	S20LC60UST	
 41.0 × 16.0 × 5.0(mm)	TO-247AD MTO-3PV	K7-1	20			S20LC40UV	S20LC60USV	

Center Tap, Common Cathode

Surface Mount																
Package		Type No.	Absolute Maximum Ratings					Electrical Characteristics					Halogen free	Based on AEC-Q101	Automotive	Series
JEDEC Code JEITA Code House Name	Fig.		V _{RRM} [V]	I _{F(AV)} [A]	Conditions T _C [°C]	I _{FSM} [A]	T _J [°C]	V _F (max) [V]	Conditions I _F [A]	I _R (max) V _R =V _{RRM} [μA]	t _{rr} (max) [ns]					
SC-63 E-pack	G1-1	DE5LC20U	200	5	81	50	150	0.98	2.5	10	35	—	—	■	—	
SC-83 similar STO-220	H1-1	DF10LC20U	200	10	127	80	150	0.98	5	10	35	—	—	—	—	
		DF10LC30	300	10	124	80	150	1.30	5	25	30	—	—	—	—	
		DF20LC20US	200	20	125	180	150	0.96	10	10	25	—	—	—	—	
		DF20LC30	300	20	124	180	150	1.30	10	25	30	—	—	—	—	
SC-83 similar FD	H2-2	D20FDC20L	200	20	113	100	175	1.20	10	10	30	—	○	○	—	
		D20FDC20LUS	200	20	125	180	150	0.96	10	10	25	—	—	○	—	

■ : Please contact us.





Three Terminal Type																
Package		Type No.	Absolute Maximum Ratings					Electrical Characteristics					Halogen free	Based on AEC-Q101	Automotive	Series
JEDEC Code JEITA Code House Name	Fig.		V _{RRM} [V]	I _{F(AV)} [A]	Conditions T _C [°C]	I _{FSM} [A]	T _J [°C]	V _F (max) [V]	Conditions I _F [A]	I _R (max) V _R =V _{RRM} [μA]	t _{rr} (max) [ns]					
SC-91 FTO-220AG	J8-1	SF5LC40UM	400	5	132	80	150	1.25	2.5	10	30	—	—	—	—	
		SF10LC40UM	400	10	120	100	150	1.25	5	10	30	—	—	—	—	
		SF10KC60M	600	10	109	120	150	1.50	5	10	85	—	—	■	K series	
		SF20LC30M	300	20	107	250	150	1.30	10	25	30	—	—	—	—	
		SF20KC60M	600	20	97	180	150	1.50	10	10	95	—	—	■	K series	
SC-91 FTO-220G	J9	SG5LC20USM	200	5	133	70	150	0.96	2.5	10	25	—	—	—	—	
		SG10LC20USM	200	10	122	90	150	0.96	5	10	25	—	—	—	—	
		SG20LC20USM	200	20	95	150	150	0.96	10	10	25	—	—	—	—	
TO-247AD MTO-3PT	K5-2	S20LC20UST	200	20	126	120	150	0.96	10	10	25	—	—	—	—	
		S20LC30T	300	20	124	220	150	1.30	10	25	30	—	—	—	—	
		S20LC40UT	400	20	123	130	150	1.25	10	10	30	—	—	—	—	
		S20LC60UST	600	20	63	60	150	3.60	10	50	25	—	—	—	—	
TO-247AD MTO-3PV	K7-1	S20LC40UV	400	20	123	200	150	1.25	10	10	30	—	—	○	—	
		S20LC60USV	600	20	65	60	150	3.60	10	50	25	—	—	○	—	

■ : Please contact us.

THYRISTORS

The Thyristor, in its normal state, will block an applied voltage in either direction, but when an appropriate current pulse is applied to the gate, current will flow through the anode to the cathode thus turning on power to the load circuit.
 The Thyristor has a planar passivation, and is available in both the general reverse-blocking type and the type without reverse voltage.
 The Thyristor without reverse voltage is suitable for a circuit limiting inrush current.

Thyristors

Package	 10.0 × 6.6 × 2.3(mm)	 28.5 × 10.0 × 4.5(mm)		
JEDEC Code JEITA Code House Name	TO-252AA — FB	— SC-91 FTO-220AG		
Fig.	G2-2	J8-5		
Internal Circuit				
$I_T(AV)$ [A]	3	5	5	8
V_{DRM} [V]	400	KC3FB40H	KC5FB40H	
	600		KC5FB60H KC5FB60HR KC5FB60HRT KC5FB60HV	KC5SF60HRT
	800			KC8SF80

■ : New product

Thyristors

Package		Type No.	Absolute Maximum Ratings						Electrical Characteristics					Halogen free	Based on AEC-Q101	Automotive
JEDEC Code JEITA Code House Name	Fig.		V_{DRM} [V]	V_{RRM} [V]	$I_T(AV)$ [A]	Conditions T_C [°C]	I_{TSM} [A]	T_J [°C]	$V_{TM(max)}$ [V]	Conditions I_{TM} [A]	$V_{GT(max)}$ [V]	$I_{GT(max)}$ [μA]	$I_H(max)$ [mA]			
TO-252AA — FB	G2-2	KC3FB40H	400	400	3	111	40	-40 to 125	1.4	4	0.8	100	5	—	—	—
		KC5FB40H	400	400	5	101	65	-40 to 125	1.6	10	0.8	200	typ.1	—	—	—
		KC5FB60H	600	600	5	98	90	-40 to 125	1.8	15	0.8	100	5	—	—	—
		KC5FB60HR	600	—	5	98	90	-40 to 125	1.8	15	0.8	100	5	—	—	—
		■ KC5FB60HV	600	600	5	100	90	-40 to 125	1.8	15	0.8	50	5	—	—	—
— SC-91 FTO-220AG	J8-5	KC5SF60HRT	600	—	5	127	82	-40 to 150	1.8	15	0.8	100	5	—	—	—
		KC8SF80	800	800	8	130	120	-40 to 150	1.5	20	1.0	15mA	100	—	—	—

■ : New product




SIDACs

SIDAC series are two-terminal bidirectional thyristor energized by the addition of a specific voltage. They are commonly used for switching devices or pulse generating devices.

Bi-directional (K1V series)

- Features**
 - Symmetrical characteristics.
 - Operating directly from the AC mains, and can be used in all kinds of pulse generating circuits.
 - The glass passivation ensures high reliability.




- Applications**
 - Pulse generation : gas igniters, HID (high intensity discharge) lamp drive circuit, etc.
 - AC switching : drive circuit for switching power supplies, voltage detecting circuits, etc.
 - Over voltage protection : AC line surge protection, capacitor rupture prevention, etc.

Package			
JEDEC Code	DO-214AC	-	-
JEITA Code	-	-	-
House Name	1F	AX06	AX10
Fig.	B4-3	A2-1	A5-3, AX10, A6
Internal Circuit	①—N—②		
V _{DRM} [V]	5	K1VZL09	
	15	K1VZL20	
	90		K1V(A)10, K1V(A)11, K1V(A)12, K1V(A)16
	115		K1V10, K1V11, K1V12, K1V14
	180		K1V22, K1V24, K1V26
	270		K1V22(W), K1V24(W), K1V26(W), K1V36(W), K1V38(W)

Uni-directional (G1V series)

- Features**
 - Uni-directional characteristics.
 - Smaller package than bi-directional SIDAC.
 - Switching operation from DC power for pulse generation.
 - The glass passivation ensures high reliability.

- Applications**
 - Pulse generation : gas igniters, negative ion generators, HID (high intensity discharge) lamp drive circuit, etc.
 - Over voltage protection : DC line surge protection.

Package			
JEDEC Code	DO-214AC	-	-
JEITA Code	-	-	-
House Name	1F	AX06	AX078
Fig.	B3-3	A2-3	A4-3
Internal Circuit	①—M—②		
V _{DRM(A)} [V]	70	G1VL8C	G1V(A)8C
	90	G1VL10C	G1V(A)10C
	100		G1V(A)12C
	110		G1V(A)13C
	115		G1V(A)15C
	120	G1VL15C	G1V(A)14C
	170	G1VL20C	G1V(A)20C
	190	G1VL22C, G1VL24C	
210		G1V(B)20C, G1V(B)22C, G1V(B)24C	

Bi-directional (K1V series)

Surface Mount		Type No.	Absolute Maximum Ratings					Electrical Characteristics					Halogen free	Automotive		
JEDEC Code	Fig.		V _{DRM}	I _T	Conditions	T _{stg}	T _j	V _{BO}	I _{DRM}	Conditions	I _{BO}	I _H			V _T	Conditions
JEITA Code	House Name	[V]	[A]	T _L [°C]	[°C]	[°C]	[V]	[μA]	V _D [V]	[mA]	[mA]	[V]	I _T [A]			
DO-214AC	B4-3	K1VZL09	5	0.5	110	-40 to 125	125	8 to 12	5	5	20	20	1.2	0.5	-	-
-	-	K1VZL20	15	0.5	110	-40 to 125	125	18 to 22	5	15	20	20	1.2	0.5	-	-

Axial		Type No.	Absolute Maximum Ratings							Electrical Characteristics					Halogen free	Automotive
JEDEC Code	Fig.		V _{DRM}	I _T	Conditions	I _{TRM}	I _{TRM}	Conditions	di _T /dt	T _j	V _{BO}	I _H	V _T	Conditions		
JEITA Code	House Name	[V]	[A]	T _L [°C]	[A]	[A]	f [Hz]	[A/μs]	[°C]	[V]	[mA]	[V]	I _T [A]			
-	AX06	K1V(A)10	90	1	109	16	60	60	125	95 to 113	50	1.6	1	-	-	
-	-	K1V(A)11	90	1	109	16	60	60	125	104 to 118	50	1.6	1	-	-	
-	-	K1V(A)12	90	1	109	16	60	60	125	110 to 125	50	1.6	1	-	-	
-	-	K1V(A)16	115	1	98	16	60	60	125	145 to 170	50	1.6	1	-	-	
-	AX10	K1V10	90	1	112	20	80	60	125	95 to 113	50	1.5	1	-	-	
-	-	K1V11	90	1	112	20	80	60	125	104 to 118	50	1.5	1	-	-	
-	-	K1V12	90	1	112	20	80	60	125	110 to 125	50	1.5	1	-	-	
-	-	K1V14	115	1	109	20	80	60	125	125 to 150	30	1.5	1	-	-	
-	-	K1V22	180	1	108	20	50	60	125	200 to 230	20	1.5	1	-	-	
-	-	K1V24	180	1	108	20	50	60	125	220 to 250	20	1.5	1	-	-	
-	-	K1V26	180	1	108	20	50	60	125	240 to 270	20	1.5	1	-	-	
-	-	K1V22(W)	180	1	91	16	50	60	125	200 to 230	50	3	1	-	-	
-	-	K1V24(W)	180	1	91	16	50	60	125	220 to 250	50	3	1	-	-	
-	-	K1V26(W)	180	1	91	16	50	60	125	240 to 265	50	3	1	-	-	
-	-	K1V36(W)	270	1	92	13	40	60	125	340 to 380	50	3	1	-	-	
-	-	K1V38(W)	270	1	92	13	40	60	125	360 to 400	50	3	1	-	-	

Uni-directional (G1V series)

Surface Mount		Type No.	Absolute Maximum Ratings					Electrical Characteristics					Halogen free	Automotive	
JEDEC Code	Fig.		V _{DRM(A)}	I _T	Conditions	I _{TRM}	Conditions	di _T /dt	T _j	V _{BO(A)}	I _{H(A),(K)}	V _{T(A),(K)}			Conditions
JEITA Code	House Name	[V]	[A]	T _L [°C]	[A]	f [Hz]	[A/μs]	[°C]	[V]	[mA]	[V]	I _T [A]			
DO-214AC	B3-3	G1VL8C	70	1	98	80	60	150	125	75 to 90	100	1.5	1	-	-
-	-	G1VL10C	90	1	98	150	60	150	125	95 to 110	100	1.5	1	-	-
-	-	G1VL15C	120	1	98	120	60	150	125	142 to 157	60	1.5	1	-	-
-	-	G1VL20C	170	1	98	120	60	150	125	190 to 210	60	1.5	1	-	-
-	-	G1VL22C	190	1	98	280	5	150	125	210 to 230	60	1.5	1	-	-
-	-	G1VL24C	190	1	98	280	5	150	150	230 to 250	60	1.5	1	-	-

Axial		Type No.	Absolute Maximum Ratings							Electrical Characteristics					Halogen free	Automotive
JEDEC Code	Fig.		V _{DRM(A)}	I _T	Conditions	I _{TRM}	Conditions	di _T /dt	T _j	V _{BO(A)}	I _{H(A),(K)}	V _{T(A),(K)}	Conditions			
JEITA Code	House Name	[V]	[A]	T _L [°C]	[A]	f [Hz]	[A/μs]	[°C]	[V]	[mA]	[V]	I _T [A]				
-	AX06	G1V(A)8C	70	1	98	80	60	80	125	75 to 90	100	1.5	1	-	-	
-	-	G1V(A)10C	90	1	98	80	60	80	125	95 to 110	60	1.5	1	-	-	
-	-	G1V(A)12C	100	1	98	80	60	80	125	110 to 130	60	1.5	1	-	-	
-	-	G1V(A)13C	110	1	98	80	60	80	125	120 to 138	60	1.5	1	-	-	
-	-	G1V(A)14C	120	1	98	80	60	80	125	130 to 150	60	1.5	1	-	-	
-	-	G1V(A)15C	115	1	98	80	60	80	125	142 to 157	60	1.5	1	-	-	
-	-	G1V(A)20C	170	1	98	80	60	80	125	190 to 210	60	1.5	1	-	-	
-	AX078	G1V(B)20C	170	1	102	120	60	220	150	190 to 210	60	1.5	1	-	-	
-	-	G1V(B)22C	190	1	98	160	60	220	125	210 to 230	60	1.5	1	-	-	
-	-	G1V(B)24C	210	1	102	120	60	220	150	230 to 250	60	1.5	1	-	-	




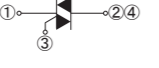
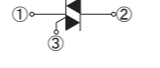
TRIACs

TRIACs are bidirectional Thyristors.

Our TRIACs are easy to use for motor and heater controls due to balanced gate sensitivity and (di/dt)_c.

Our lineup ranges from V_{DRM}=600 or 800V, I_{T(RMS)}=3 to 20A.

TRIACs (Triode for Alternating Current)

Package			
Package	10.0 × 6.6 × 2.3(mm)	28.5 × 10.0 × 4.5(mm)	28.5 × 10.0 × 4.5(mm)
JEDEC Code	TO-252AA	—	—
JEITA Code	—	SC-91	SC-91
House Name	FB	FTO-220A	FTO-220AG
Fig.	G2-3	J7-4	J8-4
Internal Circuit			
V _{DRM} [V]	600		800
I _{T(RMS)} [A]	3	KD3FB60	KD3SF60E KD3SF60
	5		KD5SF60 ★ KD5SF80
	8		KD8SF60 ★ KD8SF80
	12		KD12SF60 ★ KD12SF80
	16	★ KD16SF60A	KD16SF60 ★ KD16SF80
	20	★ KD20SF60A	KD20SF60 ★ KD20SF80
25	★ KD25SF60A		

★ : New product ★ : Under development

TRIACs (Triode for Alternating Current)

Surface Mount		Type No.	Absolute Maximum Ratings			Electrical Characteristics					Halogen free	Based on AEC-Q101	Automotive	
JEDEC Code	Fig.		V _{DRM}	I _{T (RMS)}	T _J	V _{TM (max)}	Conditions I _{TM}	V _{GT (max)}	I _{GT (max)}	(dv/dt) _{c (min)}				Conditions (di/dt) _c
JEITA Code		[V]	[A]	[°C]	[V]	[A]	[V]	[mA]	(T _j =150°C, V _D =2/3V _{DRM})	[A/ms]				
House Name		[V]	[A]	[°C]	[V]	[A]	[V]	[mA]	[V/μs]	[A/ms]				
TO-252AA	G2-3	KD3FB60	600	3	-40 to 150	1.7	4.5	1.5	15	1	-1.5	—	—	—
FB														

* : Operation mode IV is not guaranteed.

Three Terminal Type		Type No.	Absolute Maximum Ratings			Electrical Characteristics					Halogen free	Based on AEC-Q101	Automotive	
JEDEC Code	Fig.		V _{DRM}	I _{T (RMS)}	T _J	V _{TM (max)}	Conditions I _{TM}	V _{GT (max)}	I _{GT (max)}	(dv/dt) _{c (min)}				Conditions (di/dt) _c
JEITA Code		[V]	[A]	[°C]	[V]	[A]	[V]	[mA]	(T _j =150°C, V _D =2/3V _{DRM})	[A/ms]				
House Name		[V]	[A]	[°C]	[V]	[A]	[V]	[mA]	[V/μs]	[A/ms]				
—	J7-4	★ KD16SF60A	600	16	-40 to 150	1.6	20	1.5	30	1	-6	—	—	—
SC-91		★ KD20SF60A	600	20	-40 to 150	1.5	25	1.5	30	1	-8	—	—	—
FTO-220A		★ KD25SF60A	600	25	-40 to 150	1.4	30	1.5	30	1	-10	—	—	—
—	J8-4	KD3SF60E	600	3	-40 to 150	1.5	4.5	1.5	10	—	—	—	—	—
		KD3SF60	600	3	-40 to 150	1.5	4.5	1.5	20	1	-1.5	—	—	—
		KD5SF60	600	5	-40 to 150	1.8	7	1.5	20	1	-2.5	—	—	—
		KD8SF60	600	8	-40 to 150	1.6	12	1.5	30	1	-4.0	—	—	—
		KD12SF60	600	12	-40 to 150	1.6	20	1.5	30	1	-6.0	—	—	—
		KD16SF60	600	16	-40 to 150	1.5	25	1.5	30	1	-8.0	—	—	—
		KD20SF60	600	20	-40 to 150	1.4	30	1.5	30	1	-10.0	—	—	—
		★ KD5SF60S	600	5	-40 to 150	1.5	4.5	1.5	20	1	-1.5	—	—	—
		★ KD8SF60S	600	8	-40 to 150	1.8	7	1.5	20	1	-2.5	—	—	—
		★ KD12SF60S	600	12	-40 to 150	1.6	12	1.5	30	1	-4	—	—	—
		★ KD16SF60S	600	16	-40 to 150	1.6	20	1.5	30	1	-6	—	—	—
		★ KD20SF60S	600	20	-40 to 150	1.5	25	1.5	30	1	-8	—	—	—
		★ KD5SF80	800	5	-40 to 150	1.8	7	1.5	35	1	-1.5	—	—	—
		★ KD8SF80	800	8	-40 to 150	1.6	12	1.5	35	1	-4	—	—	—
		★ KD12SF80	800	12	-40 to 150	1.6	20	1.5	35	1	-4	—	—	—
★ KD16SF80	800	16	-40 to 150	1.5	25	1.5	35	1	-4	—	—	—		
★ KD20SF80	800	20	-40 to 150	1.4	30	1.5	35	1	-4	—	—	—		

★ : New product ★ : Under development * : Operation mode IV is not guaranteed.

Operation Mode	Terminal Characteristics		
	① T1	②④ T2	③ G
I	—	+	+
II	—	+	—
III	+	—	—
IV	+	—	+




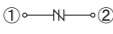
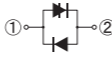
SURGE ABSORBERS

Surge Absorbers are semiconductor devices of the Thyristor type that turns on when triggered by their rated voltage. They are commonly used for lightning surge protection in communications equipment.

Thyristor Surge Suppressors

- Features**
- Bi-directional or uni-directional characteristics.
 - High speed response.
 - Large surge current capacity.
 - Repetitive use against surges is possible.



- Applications**
- Lightning surge adsorption for communications circuits.
 - Lightning surge adsorption for transmitters and switchboards.
 - Surge protection for ISDN terminals.

Series	KL series	KU series	KP series	
Package	 5.0 × 2.5 × 2.0(mm)	 5.1 × 3.75 × 2.0(mm)	 7.6 × 4.0 × 2.8(mm)	
JEDEC Code JEITA Code House Name	DO-214AC - 1F	DO-214AA similar - M2F	- - 2F	
Fig.	B4-3	B7 B8	B9-4	
Internal Circuit				
Off-state Voltage V _D [V]	5	KL3Z07		
	15	KL3Z18		
	58	KL3L07		
	63		KU10L08	
	70		KU4F8	
	90		KU10NU11	
	92			KP20NU11 KP40NU11
	100		KU4F12	
	115		KU10NU13	
	120	KL3N14	KU10N14 KU15N14	
	175	KL3R20		
	180			KP40RU22
	190		KU10R23NS	
	220		KU10R27NS	
250		KU10R29NS		
275		KU5S31NS KU10S31NS KU10S35NS		

Varistor

- Features**
- Bi-directional surge absorption is possible.
 - Low junction capacitance.

- Applications**
- Telephone set surge absorption.
 - Digital communications circuit surge absorption.
 - ISDN terminal surge absorption.

Package	 5.0 × 2.5 × 2.0(mm)
JEDEC Code JEITA Code House Name	DO-214AC - 1F
Fig.	B4-1
Internal Circuit	
V _F [V]	2.3 ± 0.25
	VR61F1

Thyristor Surge Suppressors

Package		Type No.	Absolute Maximum Ratings				Electrical Characteristics			Halogen free	UL	Automotive
JEDEC Code JEITA Code House Name	Fig.		V _{BRM} [V]	I _{ISM} [A]	Conditions [μs]	T _J [°C]	V _{BO} (min) [V]	I _H (min) [mA]	C _t (max) [pF]			
DO-214AC - 1F	B4-3	KL3Z07	5	30	10/1000	125	5.5 *1	50	-	-	-	
		KL3Z18	15	30	10/1000	125	15.5 *1	50	-	-	-	
		KL3L07	58	30	10/1000	125	65	100	90	-	-	
		KL3N14	120	30	10/1000	125	130	100	50	-	-	
		KL3R20	175	30	10/1000	125	180	100	30	-	-	
DO-214AA similar - M2F	B7	KU10L08	63	100	10/1000	125	70	100	180	-	UL	-
		KU4F8	70	40	10/1000	125	75	100	100	-	-	-
	B7	KU10NU11	60	100	10/1000	125	100	150	-	-	-	-
		KU4F12	100	40	10/1000	125	110	100	100	-	-	-
		KU10NU13	60	100	10/1000	125	120	100	-	-	-	-
		KU10N14	120	100	10/1000	125	125	100	140	-	UL	-
		KU15N14	120	150	10/1000	125	125	100	110	-	UL	-
		KU10R23NS	190	100	10/1000	125	290 *2	100	90	-	-	-
		KU10R27NS	220	100	10/1000	125	320 *2	100	70	-	UL	-
		KU10R29NS	250	100	10/1000	125	400 *2	100	70	-	UL	-
B9-4	KU5S31NS	275	50	10/1000	125	420 *2	150	70	-	-	-	
	KU10S31NS	275	100	10/1000	125	420 *2	100	90	-	UL	-	
- - 2F	B9-4	KU10S35NS	275	100	10/1000	125	450 *2	100	90	-	-	-
		KP20NU11	60	325	10/700	125	100	150	295 *3	-	-	-
		KP40NU11	60	500	10/700	125	100	150	485 *3	-	-	-
		KP40RU22	60	500	10/700	125	195	100	285 *3	-	-	-

*1 : V_{BR} *2 : V_{CL(max)} *3 : typ.  : UL497B recognized (UL File No. E183905)

Varistor

Package		Type No.	Absolute Maximum Ratings			Electrical Characteristics		Halogen free	Automotive
JEDEC Code JEITA Code House Name	Fig.		I _{F(RMS)} [A]	I _{FSM(RMS)} [A]	T _J [°C]	V _F [V]	Conditions I _F [mA]		
DO-214AC - 1F	B4-1	VR61F1	0.37(*1)/0.28(*2)	7.5	-55 to 150	2.3 ± 0.25	1	-	-

*1 : On alumina substrate *2 : On glass-epoxy substrate

TVS (Transient Surge Suppressor)

TVSs are low voltage PN junction type devices. These devices utilize technologically stable glass passivation (an in-house design) with a structural advantage that brings high resistance against heat and humidity. They are available with a voltage range between 12 to 320V and peak pulse power from 200 to 8000W.

TVS

- Features**
 - High speed response.
 - Absorption energy tolerance capacity.
 - Narrow clamping voltage width.
 - Lineup of Bi-directional type (DL series) for surge absorption.
- Applications**
 - IC protection for telephones.
 - IC protection against abnormal voltage.
 - Protection for load dump noise.

Peak pulse power	200W		600W	2000W			
Package							
	3.5 x 1.6 x 0.8(mm)	5.0 x 2.5 x 2.0(mm)	4.7 x 2.4 x 0.98(mm)	7.6 x 4.0 x 2.8(mm)		6.5 x 4.5 x 1.1(mm)	
JEDEC Code	DO-219AB similar	DO-214AC	DO-214AC				TO-277A similar
JEITA Code	SC-109	1F	1F			2F	
House Name	G1F						FY
Fig.	B1-2	B3-2	B4-2	B5-2	B9-5	B10	B11
Internal Circuit							
VBR (typ) [V]	12.5	ST02-12G1	ST04-12F1				
	14	ST02-14G1	ST04-14F1				
	16	ST02-16G1	ST04-16F1				
	18	ST02-18G1	ST04-18F1	DL04-18F1	ST06-18CE		★ST20-18FY
	20	ST02-20G1	ST04-20F1				
	24	ST02-24G1	ST04-24F1				
	27	ST02-27G1	ST04-27F1		ST06-27CE	ST20-27F2	DL20B-27F2 ★ST20-27FY
	30	ST02-30G1	ST04-30F1		ST06-30CE	ST20-30F2	DL20B-30F2 ★ST20-30FY
	33	ST02-33G1	ST04-33F1	DL04-33F1	ST06-33CE	ST20-33F2	DL20B-33F2 ★ST20-33FY
	36	ST02-36G1	ST04-36F1	DL04-36F1	ST06-36CE	ST20-36F2	DL20B-36F2 ★ST20-36FY
	39	ST02-39G1	ST04-39F1		ST06-39CE		★ST20-39FY
	43	ST02-43G1	ST03-43F1				
	47	ST02-47G1	ST03-47F1			ST20-47F2	
	58	ST02-58G1	ST03-58F1				
	68		ST03-68F1				
	75		ST02-75F1				
	82		ST02-82F1				
	100		ST02-100F1				
	120		ST02-120F1				
	145		ST02-140F1				
	170		ST02-170F1				
200		ST02-200F1					
240		ST03-240F1					
280		ST02-280F1					
320		ST02-320F1					

DL: New product ★: Under development

TVS







Package	JEDEC Code	JEITA Code	House Name	Fig.	Type No.	Absolute Maximum Ratings				Electrical Characteristics			Halogen free	Based on AEC-Q101	Automotive		
						PrSM [W]	V _R (DC) [V]	I _{RSM} [A]	T _J [°C]	V _{BR} (min) [V]	V _{BR} (max) [V]	Conditions I _R [mA]				I _R (max) [μA]	Conditions V _R [V]
DO-219AB similar SC-109 G1F				B1-2	ST02-12G1	200	9	11.2	-55 to 175	11.5	13.5	5	5	9	-	○	○
					ST02-14G1	200	12.8	10.0	-55 to 175	13.5	15	5	5	12.8	-	○	○
					ST02-16G1	200	13.6	9.1	-55 to 175	14.4	17.6	5	5	13.6	-	○	○
					ST02-18G1	200	13	7.5	-55 to 175	16.8	19.1	5	5	13	-	○	○
					ST02-20G1	200	16	6.7	-55 to 175	18.8	22	5	5	16	-	○	○
					ST02-24G1	200	20	5.8	-55 to 175	22	25.6	5	5	20	-	○	○
					ST02-27G1	200	23	5.5	-55 to 175	25.1	28.9	2	5	23	-	○	○
					ST02-30G1	200	24	5.0	-55 to 175	28	32	2	5	24	-	○	○
					ST02-33G1	200	25	4.5	-55 to 175	31	35	2	5	25	-	○	○
					ST02-36G1	200	27	4.0	-55 to 175	34	38	2	5	27	-	○	○
					ST02-39G1	200	30	3.8	-55 to 175	37	41	2	5	30	-	○	○
					ST02-43G1	200	33	3.5	-55 to 175	40	45	2	5	33	-	○	○
					ST02-47G1	195	37	3.0	-55 to 175	42	52	2	5	37	-	○	○
ST02-58G1	175	45	2.2	-55 to 175	52	64	2	5	45	-	○	○					
DO-214AC 1F				B3-2	ST04-12F1	400	9	24.0	-55 to 175	11.5	13.5	1	5	9	-	○	○
					ST04-14F1	400	12.8	18.0	-55 to 175	13.5	15	1	5	12.8	-	○	○
					ST04-16F1	400	13.6	15.0	-55 to 175	14.4	17.6	1	5	13.6	-	○	○
					ST04-18F1	400	15.3	15.0	-55 to 175	16.8	19.1	1	5	15.3	-	○	○
					ST04-20F1	400	16	15.0	-55 to 175	18.8	21.2	1	5	16	-	○	○
					ST04-24F1	400	20	12.0	-55 to 175	22.8	25.6	1	5	20	-	○	○
					ST04-27F1	400	23	10.0	-55 to 175	24.3	29.7	1	5	23	-	○	○
					ST04-30F1	400	24	8.5	-55 to 175	28	32	1	5	24	-	○	○
					ST04-33F1	400	25	8.0	-55 to 175	31	35	1	5	25	-	○	○
					ST04-36F1	400	27	7.5	-55 to 175	34	38	1	5	27	-	○	○
					ST04-39F1	400	30	7.0	-55 to 175	37	41	1	5	30	-	○	○
					ST03-43F1	300	33	5.0	-55 to 150	40	45	1	5	33	-	○	○
					ST03-47F1	300	37	5.0	-55 to 150	42	52	1	5	37	-	○	○
					ST03-58F1	300	45	4.0	-55 to 150	52	64	1	5	45	-	○	○
					ST03-68F1	300	58	3.0	-55 to 150	64.4	71.2	1	5	58	-	○	○
					ST02-75F1	200	61	2.0	-55 to 150	70	79	1	5	61	-	○	○
					ST02-82F1	200	67	2.0	-55 to 150	74	90	1	5	67	-	○	○
					ST02-100F1	200	80	1.7	-55 to 150	90	110	1	5	80	-	○	○
					ST02-120F1	200	100	1.4	-55 to 150	110	130	1	5	33	-	○	○
					ST02-140F1	200	120	1.0	-55 to 150	130	160	1	5	120	-	○	○
ST02-170F1	200	145	0.75	-55 to 150	155	185	1	5	145	-	○	○					
ST02-200F1	200	170	0.7	-55 to 150	185	215	1	5	170	-	○	○					
ST03-240F1	310	200	1.0	-55 to 175	220	250	1	5	200	-	○	○					
ST02-280F1	200	230	0.5	-55 to 175	250	300	1	5	230	-	○	○					
ST02-320F1	150	260	0.38	-55 to 175	300	350	1	5	260	-	○	○					
DO-214AC 1F				B4-2	DL04-18F1	400	13	-	-55 to 150	16.8	19.1	5	5	13	-	○	○
					DL04-33F1	400	25	9.5	-55 to 175	31	35	1	5	25	-	○	○
					DL04-36F1	400	27	8.0	-55 to 175	34	38	1	5	27	-	○	○
SC-110B CE				B5-2	ST06-18CE	600	13	26.0	-55 to 175	16.8	19.1	1	5	13	-	○	○
					ST06-27CE	600	23	17.3	-55 to 175	25	29	1	5	23	-	○	○
					ST06-30CE	600	24	15.0	-55 to 175	28	32	1	5	24	-	○	○
					ST06-33CE	600	25	14.0	-55 to 175	31	35	1	5	25	-	○	○
					ST06-36CE	600	27	12.4	-55 to 175	34	38	1	5	27	-	○	○
- 2F				B9-5	ST20-47F2	1700	37	31.0	-55 to 175	42	52	1	5	37	-	○	○
					ST20-27F2	2000	23	54.0	-55 to 175	24.3	29.7	1	5	23	-	○	○
					ST20-30F2	2000	24	50.0	-55 to 175	28	32	1	5	24	-	○	○
					ST20-33F2	2000	25	45.0	-55 to 175	31	35	1	5	25	-	○	○
					ST20-36F2	2000	27	40.0	-55 to 175	34	38	1	5	27	-	○	○
					DL20B-27F2	2000	23	51	-55 to 175	25	29	1	5	23	-	○	○
					DL20B-30F2	2000	24	46	-55 to 175	28	32	1	5	24	-	○	○
					DL20B-33F2	2000	25	41	-55 to 175	31	35	1	5	25	-	○	○
TO-277A similar FY				G4-2	★ST20-18FY	TBD	16	TBD	-55 to 175	17.2	19.1	1	5	16	-	■	○
					★ST20-27FY	TBD	23	TBD	-55 to 175	25.0	29.0	1	5	23	-	■	○
					★ST20-30FY	TBD	24	TBD	-55 to 175	28.0	32.0	1	5	24	-	■	○
					★ST20-33FY	TBD	25	TBD	-55 to 175	31.0	35.0	1	5	25	-	■	○
					★ST20-36FY	TBD	27	TBD	-55 to 175	34.0	38.0	1	5	27	-	■	○

DL: New product ★: Under development ■: Please contact us.

TVS (Transient Surge Suppressor)

TVS






- Features
 - High speed response.
 - Absorption energy tolerance capacity.
 - Narrow clamping voltage width.
 - Lineup of Bi-directional type (DL series) for surge absorption.
- Applications
 - IC protection for telephones.
 - IC protection against abnormal voltage.
 - Protection for load dump noise.

Peak pulse power		6000 ~ 8000W (Load Dump Surge Protecting)		
Package				
	9.0 × 7.0 × 9.0(mm)	13.2 × 10.2 × 4.7(mm)	15.0 × 10.2 × 4.0(mm)	
JEDEC Code JEITA Code House Name	- - MCP	- SC-83 similar STO-220	- TO-263AB - FZ	
Fig.	E1	H1-6	H6	
Internal Circuit				
VBR (typ) [V]	14	ST80-14MF		
	22	ST70-22MF		
	27	ST70-27MF	ST70-27F	ST70-27FZ
	30	ST70-30MF		
	40	ST60-40MF		
48	ST60-48MF			

■ : New product

Power Clampers

- Features
 - High speed response.
 - Absorption energy tolerance capacity.
 - Narrow clamping voltage width.
 - Reverse blocking type.
- Application
 - Snubber circuit in the primary side of switch-mode power supplies.

Package				
	7.6 × 4.0 × 2.8(mm)	5.0 × φ 4.0(mm)	7.0 × φ 4.4(mm)	
JEDEC Code JEITA Code House Name	- - 2F	- - AX078	- - AX10	
Fig.	B9-3	A4-2	A5-2	
Internal Circuit				
VBR (typ) [V]	82		ST02D-82	ST03D-82
	145	ST02D-140F2	ST02D-140	ST03D-140
	170	ST02D-170F2	ST02D-170	ST03D-170
	200		ST02D-200	ST03D-200
	240			ST03DH-240

TVS

Package		Type No.	Absolute Maximum Ratings				Electrical Characteristics					Halogen free	Based on AEC-Q101	Automotive
JEDEC Code JEITA Code House Name	Fig.		PrSM [W]	V _R (DC) [V]	I _{RSM} [A]	T _J [°C]	V _{BR} (min) [V]	V _{BR} (max) [V]	Conditions I _R [mA]	I _R (max) [μA]	Conditions V _R [V]			
-	MCP	ST80-14MF	8000	12	400	-40 to 150	13	15	1	10	12	-	-	○
		ST70-22MF	7000	18	220	-40 to 150	20.8	23.6	1	5	18	-	-	○
		ST70-27MF	7000	23	180	-40 to 150	24.3	29.7	1	5	23	-	-	○
		ST70-30MF	7000	26	160	-40 to 150	27.5	33	1	5	26	-	-	○
		ST60-40MF	6000	32	100	-40 to 150	36.5	44	1	5	32	-	-	○
SC-83 similar STO-220	H1-6	ST70-27F	7000	23	180	-40 to 150	24.3	29.7	1	5	23	-	-	○
TO-263AB - FZ	H6	ST70-27FZ	7000	23	180	-55 to 175	25	29	1	5	23	○	○	○

■ : New product

Power Clampers

Surface Mount		Type No.	Absolute Maximum Ratings				Electrical Characteristics						Halogen free	Automotive
JEDEC Code JEITA Code House Name	Fig.		PrSM [W]	ZD V _{RRM} [V]	Di V _R (DC) [V]	T _J [°C]	ZD V _{BR} (min) [V]	ZD V _{BR} (max) [V]	ZD Conditions I _R [mA]	ZD I _R (max) [μA]	Di I _R (max) [μA]	Di Conditions V _R [V]		
-	B9-3	ST02D-140F2	200	120	600	-40 to 150	130	160	1	5	5	600	-	-
		ST02D-170F2	200	145	600	-40 to 150	155	185	1	5	5	600	-	-

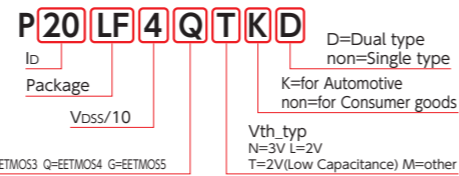
Axial		Type No.	Absolute Maximum Ratings				Electrical Characteristics						Halogen free	Automotive
JEDEC Code JEITA Code House Name	Fig.		PrSM [W]	ZD V _{RRM} [V]	Di V _R (DC) [V]	T _J [°C]	ZD V _{BR} (min) [V]	ZD V _{BR} (max) [V]	ZD Conditions I _R [mA]	ZD I _R (max) [μA]	Di I _R (max) [μA]	Di Conditions V _R [V]		
-	AX078	ST02D-82	200	67	600	-40 to 150	74	90	1	5	5	600	-	-
		ST02D-140	200	120	600	-40 to 150	130	160	1	5	5	600	-	-
		ST02D-170	200	145	600	-40 to 150	155	185	1	5	5	600	-	-
		ST02D-200	200	170	600	-40 to 150	185	215	1	5	5	600	-	-
-	AX10	ST03D-82	300	67	600	-40 to 150	74	90	1	5	5	600	-	-
		ST03D-140	300	120	600	-40 to 150	130	160	1	5	5	600	-	-
		ST03D-170	300	145	600	-40 to 150	155	185	1	5	5	600	-	-
		ST03D-200	300	170	600	-40 to 150	185	215	1	5	5	600	-	-
		ST03DH-240	300	200	1000	-40 to 150	220	250	1	5	10	1000	-	-

POWER MOSFETs

The EETMOS series offer world-class performance applying a trench-gate structure with an optimized layout hence lowered Qg.

Series	Feature
EETMOS2	Evenly balanced Ron and Qg
EETMOS3/3Z	Low Ron, Low Qg
EETMOS4	Ultra Low Ron, Low Qg
EETMOS5	Ultra Low Ron, Low Qg

How to read



EETMOS Series (Nch Single)

Surface Mount		JEDEC Code JEITA Code House Name	Fig.	Id [A]	Vdss [V]				Remarks		
Package	Id [A]				40	60	75	100		120	
6.0 x 4.9 x 1.0(mm)	LA	-	G6	15					P15LA12SL		
				18					P18LA12SL		
				19					P19LA10SL		
				23					P23LA10SL		
				25					P25LA12SL		
				30					P30LA10SL		
				56	P56LA4SN						
				18							N P18LF6QLK N P18LF6QNK
24						N P24LF4QLK N P24LF4QMK N P24LF4QNK					
25						P25LF12SLK P25LF12SL P25LF12SNK P25LF12SN					
26						★ P26LF6GLK					
32						P32LF10SLK P32LF10SL P32LF10SNK P32LF10SN					
38						N P38LF6QLK N P38LF6QL N P38LF6QNK N P38LF6QN					
40						P40LF12SLK P40LF12SL P40LF12SNK P40LF12SN					
46						P46LF7R5SLK P46LF7R5SL P46LF7R5SNK P46LF7R5SN					
50						P50LF10SLK P50LF10SL P50LF10SNK P50LF10SN					
56						★ P56LF6GMK					
58						★ P58LF6GLK					
64						N P64LF6QLK N P64LF6QL N P64LF6QNK N P64LF6QN					
70						N P70LF4QLK N P70LF4QL N P70LF4QNK N P70LF4QN					
72						P72LF7R5SLK P72LF7R5SL P72LF7R5SNK P72LF7R5SN					
88						★ P88LF6GMK					
90						★ P90LF6GLK					
98						N P98LF6QLK N P98LF6QL N P98LF6QNK N P98LF6QN					
105						N P105LF4QLK N P105LF4QL N P105LF4QNK N P105LF4QN					
120						★ P120LF6GLK ★ P120LF6GMK					
140						N P140LF4QLK N P140LF4QL N P140LF4QNK N P140LF4QN					

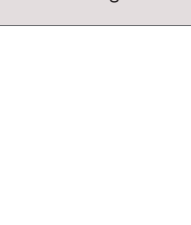
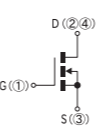

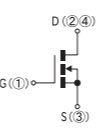
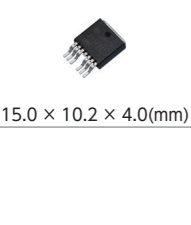
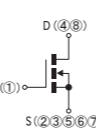

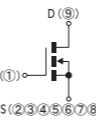
N : New product ★ : Under development

EETMOS Series (Nch Single)

Surface Mount		JEDEC Code JEITA Code House Name	Fig.	Type No.	Absolute Maximum Ratings					Electrical Characteristics					Halogen free	Based on AEC-Q101	Automotive	Series		
Package	Id [A]				Vdss [V]	Id [A]	Idp [A]	Pr [W]	Tch [°C]	Rds(on) [mΩ]	Rds(on) [mΩ]	Ciss [pF]	Qg [nC]	Vth [V]						
LA	G6	-	-	P56LA4SN	40	56	168	99	-55 to 150	4.5	5.7	1680	38	3.0	○	-	-	EETMOS3		
				P19LA10SL	100	19	57	83	-55 to 150	28	35	1730	38	2.0	○	-	-	-	EETMOS3	
				P23LA10SL	100	23	69	99	-55 to 150	23	29	2080	46	2.0	○	-	-	-	EETMOS3	
				P30LA10SL	100	30	90	142	-55 to 150	16.8	21.0	2890	61	2.0	○	-	-	-	EETMOS3	
				P15LA12SL	120	15	45	83	-55 to 150	40	50	1735	38.5	2.0	○	-	-	-	EETMOS3	
				P18LA12SL	120	18	54	99	-55 to 150	35	44	2090	47	2.0	○	-	-	-	EETMOS3	
				P25LA12SL	120	25	75	142	-55 to 150	24	30	2900	61	2.0	○	-	-	-	EETMOS3	
				N P24LF4QLK	40	24	72	50	-55 to 175	10.6	13.2	884	21	2.0	○	○	○	○	○	EETMOS4
				N P24LF4QMK	40	24	72	50	-55 to 175	10.5	13.2	856	22	1.6	○	○	○	○	○	EETMOS4
				N P24LF4QNK	40	24	72	50	-55 to 175	11.3	14.1	756	17	3.0	○	○	○	○	○	EETMOS4
				N P70LF4QL	40	70	210	123	-55 to 175	3.6	4.5	2360	49	2.0	○	○	○	○	○	EETMOS4
				N P70LF4QNK	40	70	210	123	-55 to 175	3.9	4.9	1890	38	3.0	○	○	○	○	○	EETMOS4
				N P70LF4QN	40	70	210	123	-55 to 175	3.9	4.9	1890	38	3.0	○	○	○	○	○	EETMOS4
				N P105LF4QLK	40	105	315	168	-55 to 175	2.1	2.7	4090	76	2.0	○	○	○	○	○	EETMOS4
N P105LF4QL	40	105	315	168	-55 to 175	2.1	2.7	4090	76	2.0	○	○	○	○	○	EETMOS4				
N P105LF4QNK	40	105	315	168	-55 to 175	2.2	2.8	3400	62	3.0	○	○	○	○	○	EETMOS4				
N P105LF4QN	40	105	315	168	-55 to 175	2.2	2.8	3400	62	3.0	○	○	○	○	○	EETMOS4				
N P140LF4QLK	40	140	560	217	-55 to 175	1.17	1.42	6630	122	2.0	○	○	○	○	○	EETMOS4				
N P140LF4QL	40	140	560	217	-55 to 175	1.17	1.42	6630	122	2.0	○	○	○	○	○	EETMOS4				
N P140LF4QNK	40	140	560	217	-55 to 175	1.22	1.48	5530	96	3.0	○	○	○	○	○	EETMOS4				
N P140LF4QN	40	140	560	217	-55 to 175	1.22	1.48	5530	96	3.0	○	○	○	○	○	EETMOS4				
N P18LF6QLK	60	18	54	50	-55 to 175	22	28	920	21	2.0	○	○	○	○	○	EETMOS4				
N P18LF6QNK	60	18	54	50	-55 to 175	22	28	757	17	3.0	○	○	○	○	○	EETMOS4				
★ P26LF6GLK	60	26	78	50	-55 to 175	14.7	18.4	629	11	2.0	TBD	TBD	○	○	○	EETMOS5				
N P38LF6QLK	60	38	114	123	-55 to 175	7.9	9.9	2340	49	2.0	○	○	○	○	○	EETMOS4				
N P38LF6QL	60	38	114	123	-55 to 175	7.9	9.9	2340	49	2.0	○	○	○	○	○	EETMOS4				
N P38LF6QNK	60	38	114	123	-55 to 175	8.3	10.4	1875	35	3.0	○	○	○	○	○	EETMOS4				
N P38LF6QN	60	38	114	123	-55 to 175	8.3	10.4	1875	35	3.0	○	○	○	○	○	EETMOS4				
★ P56LF6GMK	60	56	168	123	-55 to 175	5.9	7.3	1615	29	3.0	TBD	TBD	○	○	○	EETMOS5				
★ P58LF6GLK	60	58	174	123	-55 to 175	5.4	6.7	1615	29	2.0	TBD	TBD	○	○	○	EETMOS5				
N P64LF6QLK	60	64	192	168	-55 to 175	4.5	5.7	4260	77	2.0	○	○	○	○	○	EETMOS4				
N P64LF6QL	60	64	192	168	-55 to 175	4.5	5.7	4260	77	2.0	○	○	○	○	○	EETMOS4				
N P64LF6QNK	60	64	192	168	-55 to 175	4.5	5.7	3540	61	3.0	○	○	○	○	○	EETMOS4				
N P64LF6QN	60	64	192	168	-55 to 175	4.5	5.7	3540	61	3.0	○	○	○	○	○	EETMOS4				
★ P88LF6GMK	60	88	264	168	-55 to 175	3.20	4.00	2764	50	3.0	TBD	TBD	○	○	○	EETMOS5				
★ P90LF6GLK	60	90	270	168	-55 to 175	3.10	3.80	2764	50	2.0	TBD	TBD	○	○	○	EETMOS5				
N P98LF6QLK	60	98	392	217	-55 to 175	2.5	3.2	6770	126	2.0	○	○	○	○	○	EETMOS4				
N P98LF6QL	60	98	392	217	-55 to 175	2.5	3.2	6770	126	2.0	○	○	○	○	○	EETMOS4				
N P98LF6QNK	60	98	392	217	-55 to 175	2.6	3.3	5650	96	3.0	○	○	○	○	○	EETMOS4				
N P98LF6QN	60	98	392	217	-55 to 175	2.6	3.3	5650	96	3.0	○	○	○	○	○	EETMOS4				
★ P120LF6GLK	60	120	480	217	-55 to 175	1.70	2.30	4800	78	2.0	TBD	TBD	○	○	○	EETMOS5				
★ P120LF6GMK	60	120	480	217	-55 to 175	1.83	2.3	4950	70	3.0	TBD	TBD	○	○	○	EETMOS5				
P46LF7R5SLK	75	46	138	168	175	8.2	10.3	2890	61	2.0	○	○	○	○	○	EETMOS3				
P46LF7R5SL	75	46	138	168	-55 to 175	8.2	10.3	2890	61	2.0	○	○	○	○	○	EETMOS3				
P46LF7R5SNK	75	46	138	168	175	8	10	2380	48	3.0	○	○	○	○	○	EETMOS3				
P46LF7R5SN	75	46	138	168	-55 to 175	8	10	2380	48	3.0	○	○	○	○	○	EETMOS3				
P72LF7R5SLK	75	72	288	217	175	4.6	5.8	4870	100	2.0	○	○	○	○	○	EETMOS3				
P72LF7R5SL	75	72	288	217	-55 to 175	4.6	5.8	4870	100	2.0	○	○	○	○	○	EETMOS3				
P72LF7R5SNK	75	72	288	217	175	4.5	5.7	4080	78	3.0	○	○	○	○	○	EETMOS3				
P72LF7R5SN	75	72	288	217	-55 to 175	4.5	5.7	4080	78	3.0	○	○	○	○	○	EETMOS3				
P32LF10SLK	100	32	96	168	175	15.7	19.7	2890	61	2.0	○	○	○	○	○	EETMOS3				
P32LF10SL	100	32	96	168	-55 to 175	15.7	19.7	2890	61	2.0	○	○	○	○	○	EETMOS3				
P32LF10SNK	100	32	96	168	175	14.4	18.0	2430	48	3.0	○	○	○	○	○	EETMOS3				
P32LF10SN	100	32	96	168	-55 to 175	14.4	18.0	2430	48	3.0	○	○	○	○	○	EETMOS3				
P50LF10SLK	100	50	200	217	175	9.0	11.3	4900	102	2.0	○	○	○	○	○	EETMOS3				
P50LF10SL	100	50	200	217	-55 to 175	9.0	11.3	4900	102	2.0	○	○	○	○	○	EETMOS3				
P50LF10SNK	100	50	200	217	175	8.3	10.4	4130	80	3.0	○	○	○	○	○	EETMOS3				
P50LF10SN	100	50	200	217	-55 to 175	8.3	10.4	4130	80	3.0	○	○	○	○	○	EETMOS3				
P25LF12SLK	120	25	75	168	175	23	29	2930	61	2.0	○	○	○	○	○					

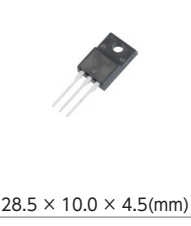
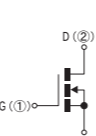
POWER MOSFETS

EETMOS Series (Nch Single)

Surface Mount											Remarks						
Package	JEDEC Code JEITA Code House Name	Fig.	Id [A]	Vbss [V]													
				40	60	75	100	120	150	200							
	TO-252AA - FB	G2-1	8														
			16		■ P16B6SBK P16B6SB												
			20					■ P20B12SLK P20B12SL P20B12SN									
			24	★ P24B4SBK P24B4SB							■ P24B15SL						
			25		P25B6EB												
			26					■ P26B10SLK P26B10SL P26B10SN									
			30					P30B10EL									
			32								■ P32B12SLK P32B12SN						
			40		★ P40B6SLK P40B6SL				P40B10SL P40B10SN								
			54	★ P54B4SLK P54B4SN													
			60	P60B4EL P60B4SN	P60B6EL P60B6EN P60B6SN												
				TO-252AB similar SC-63 FE	G3-2	8											
						12				P12FE7R5SBK							
						14				P14FE6SBK							
						20								P20FE12SLK			
22							P22FE4SBK										
26										P26FE10SLK							
	TO-263SC - FZ-7p	H7	170														
			240		■ P170FZ6QNKA												
	MO-299B - LG	G9 (TOLL)	92														
			104										★ P92LG20GNK				
			120											★ P104LG20GNK			
			130											★ P130LG10GN ★ P130LG10GNK			
			168											★ P168LG10GN ★ P168LG10GNK			
			200											★ P200LG10GN			
232											★ P232LG10GN ★ P232LG10GNK						

■ : New product ★ : Under development

THD (Through Hole Device)

Package	JEDEC Code JEITA Code House Name	Fig.	Id [A]	50			60			75			100			120			Remarks	
	SC-91 FTO-220AG	J8-2	22																	
			32																	
			34																	
			40																	
			42																	
			50																	
			55																	
			66																	
			70																	
			82																	
86																				

EETMOS Series (Nch Single)

Surface Mount																		
JEDEC Code JEITA Code House Name	Fig.	Type No.	Absolute Maximum Ratings					Electrical Characteristics					Halogen free	Based on AEC-Q101	Automotive	Series		
			Vbss [V]	Id [A]	Idp [A]	Pt [W]	Tch [°C]	Rds(on) (typ) [mΩ]	Rds(on) (max) [mΩ]	Ciss (typ) [pF]	Qg (typ) [nC]	Vth (typ) [V]						
TO-252AA - FB	G2-1	★ P24B4SBK	40	24	72	23	-55 to 175	14.8	18.5	645	16.5	2.0	-	-	-	EETMOS3		
		P24B4SB	40	24	72	20	-55 to 150	14.8	18.5	645	16.5	2.0	-	-	-	EETMOS3		
		★ P54B4SLK	40	54	162	46	-55 to 175	6.3	8	2020	TBD	2.0	-	-	-	EETMOS3		
		P54B4SN	40	54	162	44	-55 to 150	5.0	6.3	1650	36	3.0	-	-	-	EETMOS3		
		P60B4EL	40	60	240	62.5	-55 to 150	3.3	4.2	2900	57	2.0	-	-	-	EETMOS2		
		P60B4SN	40	60	180	62.5	-55 to 150	3.2	4.0	2830	59	3.0	-	-	-	EETMOS3		
		■ P16B6SBK	60	16	48	23	-55 to 175	29	37	655	17	2.0	○	○	○	EETMOS3		
		P16B6SB	60	16	48	20	-55 to 150	29	37	655	17	2.0	-	-	-	EETMOS3		
		P25B6EB	60	25	70	35	-55 to 150	23	29	785	14.5	2.0	-	-	-	EETMOS2		
		★ P40B6SLK	60	40	120	46	-55 to 175	9.5	12	2050	43	2.0	-	-	-	EETMOS3		
		P40B6SL	60	40	120	44	-55 to 150	9.5	12.0	2050	43	2.0	-	-	-	EETMOS3		
		P60B6EL	60	60	240	62.5	-55 to 150	6.1	7.7	2920	55	2.0	-	-	-	EETMOS2		
		P60B6EN	60	60	240	62.5	-55 to 150	6.4	8.0	2550	44	3.0	-	-	-	EETMOS2		
		P60B6SN	60	60	180	62.5	-55 to 150	5.3	6.7	2780	55	3.0	-	-	-	EETMOS3		
		■ P8B10SBK	100	8	24	23	-55 to 175	75	94	665	16.5	2.0	○	○	○	EETMOS3		
		P8B10SB	100	8	24	20	-55 to 150	75	94	665	16.5	2.0	-	-	-	EETMOS3		
		■ P26B10SLK	100	26	78	46	-55 to 175	24	30	1975	43	2.0	○	○	○	EETMOS3		
		P26B10SL	100	26	78	44	-55 to 150	24	30	1975	43	2.0	-	-	-	EETMOS3		
		P26B10SN	100	26	78	44	-55 to 150	22	28	1700	35	3.0	-	-	-	EETMOS3		
		P30B10EL	100	30	90	44	-55 to 150	24	30	2000	37	2.0	-	-	-	EETMOS2		
		P40B10SL	100	40	120	62.5	-55 to 150	14.8	18.5	3210	66	2.0	-	-	-	EETMOS3		
		P40B10SN	100	40	120	62.5	-55 to 150	13.4	16.8	2880	56	3.0	-	-	-	EETMOS3		
		■ P20B12SLK	120	20	60	46	-55 to 175	35	44	2110	48	2.0	-	-	-	EETMOS3		
		P20B12SL	120	20	60	44	-55 to 150	35	44	2110	46	2.0	-	-	-	EETMOS3		
		P20B12SN	120	20	60	44	-55 to 150	33	42	1740	37	3.0	-	-	-	EETMOS3		
		■ P32B12SLK	120	32	96	75	-55 to 175	19.9	25	3513	69	2.0	○	○	○	EETMOS3		
		P32B12SN	120	32	96	62.5	-55 to 150	20	25	2915	57	3.0	-	-	-	EETMOS3		
		■ P24B15SL	150	24	72	62.5	-55 to 150	32	40	3466	71	2.0	-	-	-	EETMOS3		
		TO-252AB similar SC-63 FE	G3-2	■ P22FE4SBK	40	22	66	24	-55 to 175	15.2	19.0	645	16.5	2.0	-	○	○	EETMOS3
				P30FE4SLK	40	30	90	44	-55 to 175	6.3	8.0	2020	44	2.0	-	○	○	EETMOS3
				P14FE6SBK	60	14	42	24	-55 to 175	31	39	655	16.3	2.0	-	○	○	EETMOS3
				P30FE6SLK	60	30	90	44	-55 to 175	10.9	13.8	2050	43	2.0	-	○	○	EETMOS3
				■ P12FE7R5SBK	75	12	36	24	-55 to 175	40	50	660	16.6	2.0	-	○	○	EETMOS3
P30FE7R5SLK	75			30	90	44	-55 to 175	14.1	17.8	2020	45	2.0	-	○	○	EETMOS3		
P8FE10SBK	100			8	24	24	-55 to 175	79	99	665	16.5	2.0	-	○	○	EETMOS3		
■ P26FE10SLK	100			26	78	44	-55 to 175	24	30	1975	43	2.0	-	○	○	EETMOS3		
P20FE12SLK	120			20	60	44	-55 to 175	35	44	2110	46	2.0	-	○	○	EETMOS3		
TO-263SC - FZ-7p	H7			■ P240FZ4QLA	40	240	720	178	-55 to 175	1.03	1.29	9675	171	2.0	○	-	-	EETMOS4
				■ P240FZ4QNKA	40	240	720	178	-55 to 175	1.07	1.34	7915	133	3.0	○	○	○	EETMOS4
				■ P170FZ6QNKA	60	170	510	178	-55 to 175	1.93	2.4	8090	130	3.0	○	○	○	EETMOS4
MO-299B - LG	G9 (TOLL)			★ P130LG10GN	100	130	520	TBD	-55 to 175	4.0	5.0	3500	69	3.0	-	-	-	EETMOS5
				★ P130LG10GNK	100	130	520	TBD	-55 to 175	4.0	5.0	3500	69	3.0	-	-	-	EETMOS5
				★ P168LG10GN	100	168	672	TBD	-55 to 175	2.5	3.1	TBD	96	3.0	-	-	-	EETMOS5
		★ P168LG10GNK	100	168	672	365	-55 to 175	2.5	3.1	6035	96	3.0	-	-	-	EETMOS5		
		★ P200LG10GN	100	200	680	TBD	-55 to 175	2.2	2.7	6954	102	3.0	-	-	-	EETMOS5		
		★ P232LG10GN	100	232	696	441	-55 to 175	1.83	2.20	8140	120	3.0	-	-	-	EETMOS5		
		★ P232LG10GNK	100	232	696	517	-55 to 175	1.83	2.20	8140	120	3.0	-	-	-	EETMOS5		
		★ P92LG20GNK	200	92	368	TBD	-55 to 175	10.3	12.9	4570	TBD	3.0	-	-	-	EETMOS5		
		★ P104LG20GNK	200	104	416	TBD	-55 to 175	9.1	11.4	5415	TBD	3.0	-	-	-	EETMOS5		
		★ P120LG20GNK	200	120	480	TBD	-55 to 175	7.8	9.8	5822	TBD	3.0	-	-	-	EETMOS5		


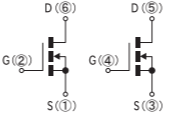
■ : New product ★ : Under development

THD (Through Hole Device)

JEDEC Code JEITA Code House Name	Fig.	Type No.	Absolute Maximum Ratings					Electrical Characteristics					Halogen free	Based on AEC-Q101	Automotive	Series
			Vbss [V]	Id [A]	Idp [A]	Pt [W]	Tch [°C]	Rds(on) (typ) [mΩ]	Rds(on) (max) [mΩ]	Ciss (typ) [pF]	Qg (typ) [nC]	Vth (typ) [V]				
SC-91 FTO-220AG	J8-2	P70F5EN	50	70	280	53	150	2.7	3.2	5500	100	3.0	-	-	-	EETMOS2
		P34F6EL	60	34	136	35	-55 to 150	9.0	11.0	1960	41	2.0	-	-	-	EETMOS2
		P4														

POWER MOSFETs


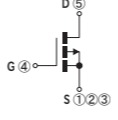
EETMOS Series (Nch Dual)

Surface Mount							
Package	JEDEC Code JEITA Code House Name	Fig.	Id [A]	Vdss [V]			Remarks
	MO-235B - LF-Dual	G8	12			N P12LF10SLKD	
			15		N P15LF6QTKD		
			17		N P17LF10SLKD		
			20	N P20LF4QTKD			
			33	N P33LF6QLKD N P33LF6QTKD			
			39	N P39LF6QTKD			
			41	N P41LF4QTKD			
			50	N P50LF4QTKD			

6.05 × 5.00 × 1.05(mm)

N : New product

EETMOS Series (Pch Single)

Surface Mount						
Package	JEDEC Code JEITA Code House Name	Fig.	Id [A]	Vdss [V]		Remarks
	MO-235B similar - LF	G7-2	-56	★ P56LF4PQLK		
			-74	★ P74LF4PQLK		
			-96	★ P96LF4PQLK		

6.05 × 5.00 × 1.05(mm)

★ : Under development

EETMOS Series (Nch Dual)

Surface Mount																
Package		Type No.	Absolute Maximum Ratings					Electrical Characteristics					Halogen free	Based on AEC-Q101	Automotive	Series
JEDEC Code JEITA Code House Name	Fig.		Vdss [V]	Id [A]	Idp [A]	Pt [W]	Tch [°C]	Rd(s ON) (typ) [mΩ] Vgs=10V	Rd(s ON) (max) [mΩ] Vgs=10V	Ciss (typ) [pF]	Qg (typ) [nC]	Vth (typ) [V]				
MO-235B - LF-Dual	G8	N P20LF4QTKD	40	20	60	35	-55 to 175	12.3	15.3	630	16	2	○	○	○	EETMOS4
		N P41LF4QTKD	40	41	123	50	-55 to 175	5.3	6.7	1478	31	2	○	○	○	EETMOS4
		N P50LF4QTKD	40	50	150	62	-55 to 175	4.4	5.5	1748	35	2	○	○	○	EETMOS4
		N P15LF6QTKD	60	15	45	35	-55 to 175	24	30	632	15	2	○	○	○	EETMOS4
		N P33LF6QLKD	60	33	99	50	-55 to 175	10.5	13.1	1913	37	2	○	○	○	EETMOS4
		N P33LF6QTKD	60	33	99	50	-55 to 175	10	12.5	1495	30	2	○	○	○	EETMOS4
		N P39LF6QTKD	60	39	117	62	-55 to 175	8.3	10.4	1765	35	2	○	○	○	EETMOS4
		N P12LF10SLKD	100	12	36	50	-55 to 175	34	42	1420	32	2	○	■	○	EETMOS3
		N P17LF10SLKD	100	17	51	62	-55 to 175	29	36	1685	36	2	○	■	○	EETMOS3

N : New product ■ : Please contact us.

EETMOS Series (Pch Single)

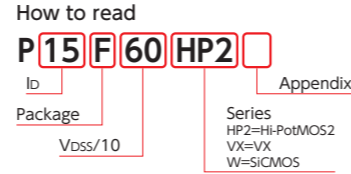
Surface Mount																
Package		Type No.	Absolute Maximum Ratings					Electrical Characteristics					Halogen free	Based on AEC-Q101	Automotive	Series
JEDEC Code JEITA Code House Name	Fig.		Vdss [V]	Id [A]	Idp [A]	Pt [W]	Tch [°C]	Rd(s ON) (typ) [mΩ] Vgs=10V	Rd(s ON) (max) [mΩ] Vgs=10V	Ciss (typ) [pF]	Qg (typ) [nC]	Vth (typ) [V]				
MO-235B similar - LF	G7-2	★ P56LF4PQLK	-40	-56	-168	124	175	9.3	11.6	2200	47	-2.0	TBD	TBD	○	EETMOS4
		★ P74LF4PQLK	-40	-74	-222	169	175	5.5	6.9	3555	78.2	-2.0	TBD	TBD	○	EETMOS4
		★ P96LF4PQLK	-40	-96	-384	217	175	3.1	3.9	5413	129	-2.0	TBD	TBD	○	EETMOS4

★ : Under development

POWER MOSFETs

The Hi-PotMOS series are MOSFETs with a high breakdown strength, and they are 100% screened using di/dt & avalanche testing.

Series	Feature
HP2 (Hi-PotMOS2)	High breakdown resistance, Avalanche rated, di/dt inspection(all parts)
VX3	Automotive qualified, Avalanche rated, di/dt inspection(all parts), High Breakdown resistance, High ESD Capability
SiCMOS	SiC MOSFET, Low Ron, High Speed Switching



HP2 • VX • SiC Series (Nch Single)

Surface Mount											
Package	JEDEC Code JEITA Code House Name	Fig.	Id [A]	Vds [V]					Remarks		
				280/300	400	500/525	600/650	900			
	TO-252AA - FB	G2-1	0.5					P0R5B60HP2			
			1					P1B52HP2	★ P1B90VX3K		
			1.5		P1R5B40HP2						
			2					P2B60HP2F			
			2.5					P2R5B52HP2F			
			3	P3B28HP2							
			4		P4B40HP2			P4B60HP2F			
			5				Ⓝ P5B50HP2F P5B52HP2				
			6	P6B28HP2 P8B28HP2 P8B30HP2	P6B40HP2		P6B52HP2				
			8								
9	P9B30HP2F	P9B40HP2									
10	P10B28HP2										
10.0 × 6.6 × 2.3(mm)											
	TO-252AB similar SC-63 FE	G3-2	1						P1FE90VX3		
9.5 × 6.6 × 2.65(mm)											
	MO-299B - LG	G10 (Kelvin Source)	37					★ P37LG65W3S			
11.68 × 9.8 × 2.3(mm)											

Ⓝ : New product ★ : Under development

THD (Through Hole Device)

THD (Through Hole Device)											
Package	JEDEC Code JEITA Code House Name	Fig.	Id [A]	Vds [V]					Remarks		
				250/280	400	500	600	900			
	SC-91 FTO-220AG	J8-2	3					P3F60HP2			
			4					P4F60HP2	Ⓝ P4F90VX3		
			5					P5F50HP2	P5F60HP2		
			6					P6F50HP2			
			7					P7F60HP2	Ⓝ P7F90VX3		
			8	P8F28HP2			P8F50HP2				
			10				P10F50HP2	P10F60HP2			
			12					P12F60HP2			
			13	P13F28HP2			P13F50HP2				
			15				P15F50HP2	P15F60HP2 P15F60HP2F			
			17	P17F28HP2							
			20				P20F50HP2				
			21	P21F28HP2							
			26	P26F28HP2							
			36	Ⓝ P36F25HP2 P36F28HP2							
			28.5 × 10.0 × 4.5(mm)								
	SC-91 FTO-220A	J7-2	23		P23F40HP2FM						
28.5 × 10.0 × 4.5(mm)											
	TO-247AD - MTO-3PV	K7-4	30				P30W60HP2V				
41.0 × 16.0 × 5.0(mm)											
	TO-247AD - GC	K8	85	Ⓝ P85GC28HP2F							
41.02 × 15.94 × 5.02(mm)											

Ⓝ : New product

HP2 • VX • SiC Series (Nch Single)

Surface Mount																	
JEDEC Code JEITA Code House Name	Package	Fig.	Type No.	Absolute Maximum Ratings				Electrical Characteristics					Body Diode trr (typ) [ns]	Halogen free	Based on AEC-Q101	Automotive	Series
				Vds [V]	Id [A]	Pt [W]	Tch [°C]	Rds(ON) (typ) [Ω] Vgs=10V	Rds(ON) (max) [Ω] Vgs=10V	Ciss (typ) [pF]	Qg (typ) [nC]	Vth (typ) [V]					
	TO-252AA - FB	G2-1	P3B28HP2	280	3	35	150	1.7	2.0	120	3.6	3.75	-	-	-	-	HP2
P6B28HP2			280	6	35	150	0.66	0.85	240	5.7	3.75	-	-	-	-	-	HP2
P8B28HP2			280	8	54	150	0.38	0.50	400	9.8	3.75	-	-	-	-	-	HP2
P8B30HP2			300	8	54	150	0.42	0.50	400	9.8	3.75	-	-	-	-	-	HP2
P9B30HP2F			300	9	54	-55 to 150	0.44	0.55	402	14.0	4.5 *1	72	-	-	-	-	HP2
P10B28HP2			280	10	70	150	0.30	0.40	500	11.4	3.75	-	-	-	-	-	HP2
P1R5B40HP2			400	1.5	35	150	4.2	5.0	120	3.9	3.75	-	-	-	-	-	HP2
P4B40HP2			400	4	35	150	1.54	1.90	245	6.5	3.75	-	-	-	-	-	HP2
P6B40HP2			400	6	54	150	0.84	1.05	400	10	3.75	-	-	-	-	-	HP2
P9B40HP2			400	9	40	150	0.65	0.80	575	14.5	3.75	-	-	-	-	-	HP2
P1B52HP2			525	1	35	150	6.0	7.2	125	4.3	3.75	-	-	-	-	-	HP2
P2R5B52HP2F			525	2.5	35	150	2.5	3.2	240	6.7	3.25	52	-	-	-	-	HP2
Ⓝ P5B50HP2F			500	5	54	-55 to 150	1.20	1.65	382	10.5	4.5 *1	72	-	-	-	-	HP2
P5B52HP2			525	5	54	150	1.4	1.7	400	10.5	3.75	-	-	-	-	-	HP2
P6B52HP2			525	6	70	150	1.10	1.35	520	15	3.75	-	-	-	-	-	HP2
P0R5B60HP2			600	0.5	35	150	8.3	10.0	120	4.3	3.75	-	-	-	-	-	HP2
P2B60HP2F			600	2	35	150	3.4	4.2	240	6.8	3.25	52	-	-	-	-	HP2
P4B60HP2F			600	4	70	150	1.6	1.9	520	13	3.25	75	-	-	-	-	HP2
★ P1B90VX3K			900	1	36	150	9.5	14.0	201	10.5	3.5	-	-	TBD	TBD	○	VX3
			TO-252AB similar SC-63 FE	G3-2	P1FE90VX3	900	1	36	-55 to 150	9.5	14.0	193	10.8	3.5	-	-	○
	MO-299B - LG	G10 (Kelvin Source)	★ P37LG65W3S	650	37	TBD	175	60.0	79.0	1151	43	2.6	TBD	-	-	-	SiCMOS

Ⓝ : New product ★ : Under development *1 : max.

THD (Through Hole Device)

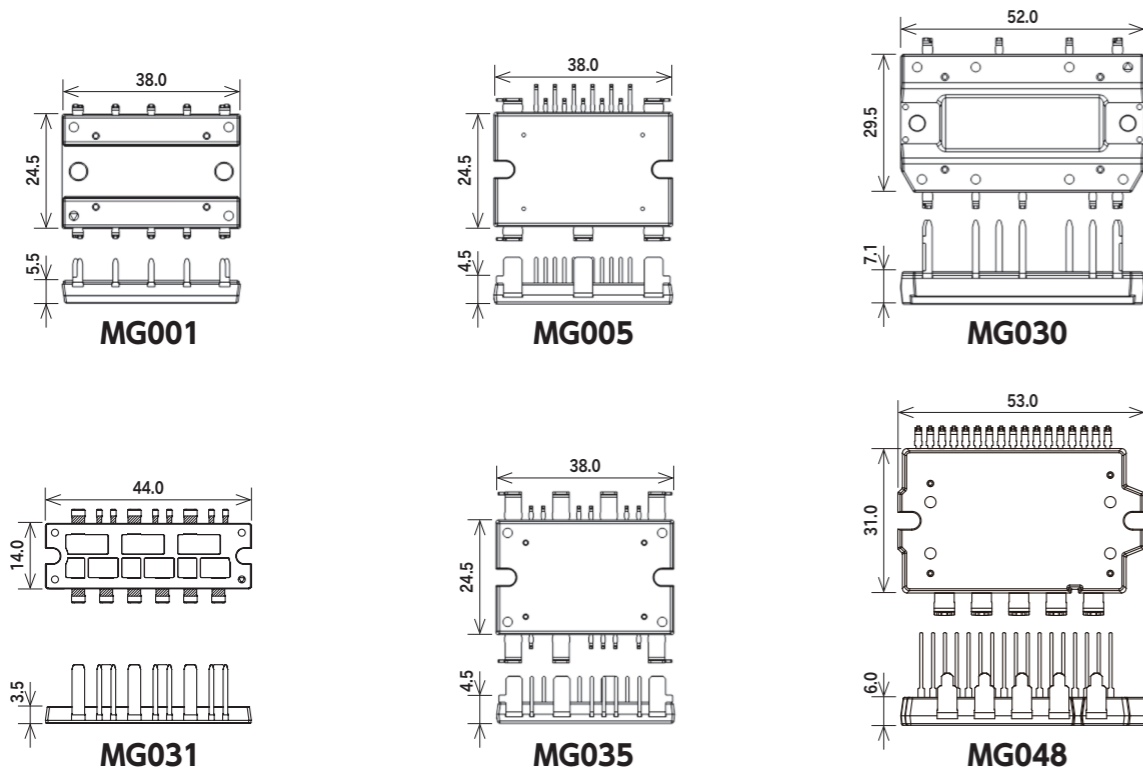
THD (Through Hole Device)																			
JEDEC Code JEITA Code House Name	Package	Fig.	Type No.	Absolute Maximum Ratings				Electrical Characteristics					Body Diode trr (typ) [ns]	Halogen free	Based on AEC-Q101	Automotive	Series		
				Vds [V]	Id [A]	Pt [W]	Tch [°C]	Rds(ON) (typ) [Ω] Vgs=10V	Rds(ON) (max) [Ω] Vgs=10V	Ciss (typ) [pF]	Qg (typ) [nC]	Vth (typ) [V]							
	SC-91 FTO-220AG	J8-2	Ⓝ P36F25HP2	250	36	77	-55 to 150	0.08	0.12	1313	35	4.5 *1	-	-	-	-	HP2		
P8F28HP2			280	8	52.5	-55 to 150	0.38	0.5	400	9.8	3.75	-	-	-	-	-	HP2		
P13F28HP2			280	13	65	150	0.23	0.3	630	15	3.75	-	-	-	-	-	HP2		
P17F28HP2			280	17	79	150	0.17	0.23	830	19.5	3.75	-	-	-	-	-	HP2		
P21F28HP2			280	21	85	150	0.13	0.18	1000	20.5	3.75	-	-	-	-	-	HP2		
P26F28HP2			280	26	90	150	0.11	0.15	1200	24.5	3.75	-	-	-	-	-	HP2		
P36F28HP2			280	36	95	150	0.08	0.12	1730	35	3.75	-	-	-	-	-	HP2		
P5F50HP2			500	5	52.5	150	1.3	1.6	400	10.5	3.75	-	-	-	-	-	HP2		
P6F50HP2			500	6	62.5	150	1.00	1.25	500	12.5	3.75	-	-	-	-	-	HP2		
P8F50HP2			500	8	65	150	0.8	1.0	610	15	3.75	-	-	-	-	-	HP2		
P10F50HP2			500	10	79	-55 to 150	0.60	0.75	820	20	3.75	-	-	-	-	-	HP2		
P13F50HP2			500	13	85	150	0.48	0.60	1050	25	3.75	-	-	-	-	-	HP2		
P15F50HP2			500	15	90	150	0.4	0.5	1340	27	3.75	-	-	-	-	-	HP2		
P20F50HP2			500	20	95	150	0.29	0.36	1735	40	3.75	-	-	-	-	-	HP2		
P3F60HP2			600	3	52.5	150	1.92	2.30	400	10	3.75	-	-	-	-	-	HP2		
P4F60HP2			600	4	62.5	150	1.5	1.8	505	12.5	3.75	-	-	-	-	-	HP2		
P5F60HP2			600	5	65	150	1.17	1.40	615	15	3.75	-	-	-	-	-	HP2		
P7F60HP2			600	7	79	150	0.88	1.05	810	19	3.75	-	-	-	-	-	HP2		
P10F60HP2			600	10	85	150	0.67	0.80	1040	23	3.75	-	-	-	-	-	HP2		
P12F60HP2			600	12	90	150	0.56	0.67	1230	26.5	3.75	-	-	-	-	-	HP2		
P15F60HP2			600	15	95	-55 to 150	0.41	0.49	1750	37	3.75	-	-	-	-	-	HP2		
P15F60HP2F			600	15	95	-55 to 150	0.44	0.53	1720	34	3.25	88	-	-	-	-	HP2		
Ⓝ P4F90VX3			900	4	79	150	2.8	3.6	595	21	4.0 *1	-	-	-	-	-	VX3		
Ⓝ P7F90VX3			900	7	95	150	1.2	1.7	1375	42	4.0 *1	-	-	-	-	-	VX3		
			SC-91 FTO-220A	J7-2	P23F40HP2FM	400	23	104	150	0.17	0.24	1620	40	3.25	68	-	-	-	HP2
			TO-247AD - MTO-3PV	K7-4	P30W60HP2V	600	30	310	-55 to 150	0.185	0.23	3935	70	3.75	-	-	-	-	HP2
			TO-247AD - GC	K8	Ⓝ P85GC28HP2F	280	85	430	-55 to 150	0.035	0.045	4375	110	4.5 *1	83	○	-	-	HP2

Ⓝ : New product *1 : max. ■ : Please contact us.

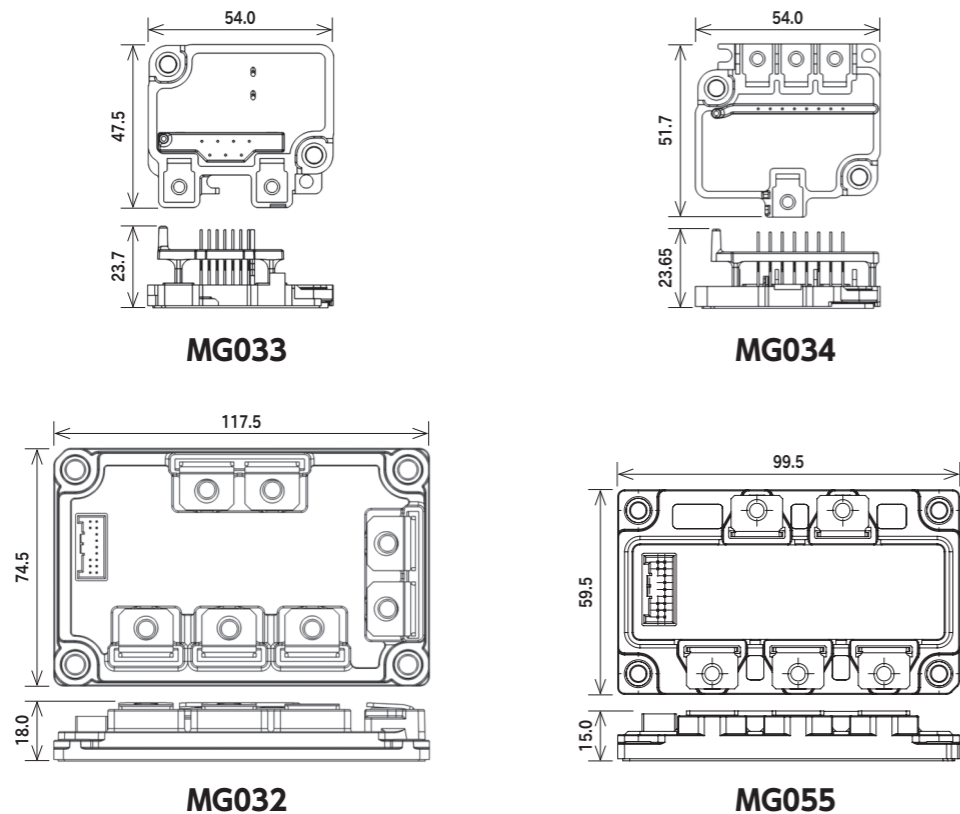
POWER MODULES

Power Modules include combinations of various power semiconductors. They are easy to design, reduce the number of components needed in the device, are suitable for device downsizing, and mitigate heat-dissipation concerns. At Shindengen, a multitude of packages allow us to meet customer needs of MOSFET, diodes, and other products. Semi customizable support and customizable package design support are available.

Transfer Type Package Sample



Potting Type Package Sample



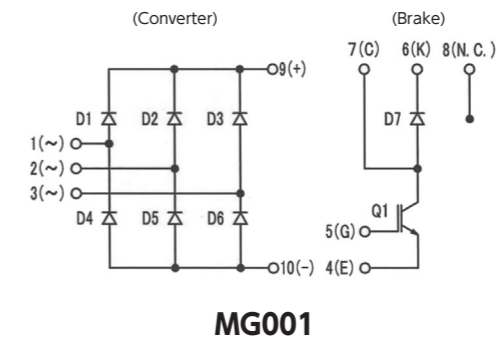
CB Module Series

Converter + Brake Modules

Package	JEDEC Code JEITA Code House Name	Fig.	Type No.	Converter Diode					Brake IGBT				Brake FRD					Halogen free	UL	Automotive	
				Absolute Maximum Ratings			Electric Characteristics		Absolute Maximum Ratings		Electric Characteristics		Absolute Maximum Ratings			Electric Characteristics					
				V _{RRM} [V]	I _F (AV) [A]	Conditions T _c [°C]	V _F (max) [V]	Conditions I _F [A]	V _{CEs} [V]	I _c [A]	V _{CE} (sat) (typ) [V]	Conditions I _c [A]	V _{RRM} [V]	I _F (AV) [A]	Conditions T _c [°C]	V _F (max) [V]	Conditions I _F [A]				t _{rr} (max) [ns]
-	-	F4	MG001AK028060A	600	20	137	1.05	7	600	28	1.70	28	600	3	137	1.65	3	50	○	UL	-
-	-	F4	MG001AL030060A	600	30	136	1.05	10	600	30	1.5	30	600	3	137	1.65	3	50	○	UL	-

■ : New product UL : UL recognized (UL File No. E142422)

Equivalent Circuit Schematic



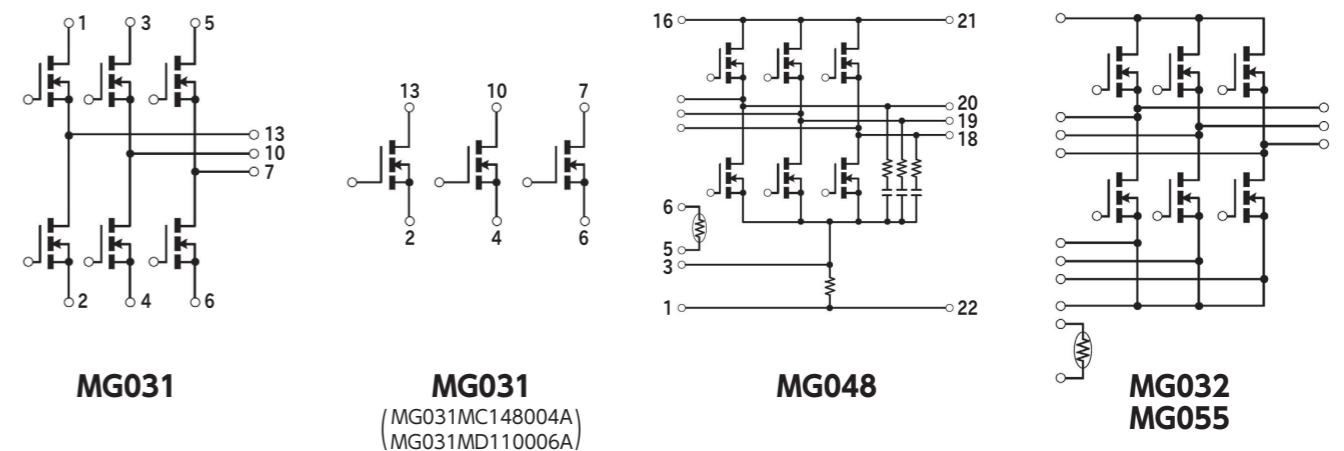
INV Module Series

Inverter Modules

Package	JEDEC Code JEITA Code House Name	Fig.	Type No.	Absolute Maximum Ratings							Electrical Characteristics						Halogen free	UL	Automotive
				V _{DSS} [V]	I _D [A]	I _{DP} [A]	P _T [W]	T _{ch} [°C]	R _{DS(ON)} (typ) [mΩ] V _{GS} =10V	R _{DS(ON)} (max) [mΩ] V _{GS} =10V	C _{iss} (typ) [pF]	Q _g (typ) [nC]	V _{th} (typ) [V]	R _{th(j-c)} (max) [°C/W]					
-	-	F5	MG031B090004A	40	90	360	125	175	2.34	3.2	4180	76	2.0	1.2	○	-	○		
			MG031E120004A	40	120	480	125	175	2.4	3.1	3297	61	3.0	1.2	○	-	○		
			MG031G148004A	40	148	592	154	175	1.75	2.2	5330	96	3.0	0.97	○	-	○		
			MG031L080006A	60	80	320	125	175	4.2	5.6	3381	60	3.0	1.2	○	-	○		
			MG031N110006A	60	110	440	154	175	2.9	3.8	5535	96	3.0	0.97	○	-	○		
			MG031MC148004A	40	148	592	154	175	1.75	2.2	5330	96	3.0	0.97	○	-	○		
-	-	F8	MG048A150004A	40	150	600	147	150	2.1	2.7	5900	111	3.0	0.85	○	-	■		
			MG048B100006A	60	100	400	147	150	2.92	3.65	8100	129	3.0	0.85	○	-	■		
-	-	F6	MG032A4207R5A	75	420	840	500	150	-	0.98	80120	505	3.0	0.25	-	-	○		
			MG032B420010A	100	420	840	500	150	0.99	1.37	91800	500	3.0	0.25	-	-	○		
-	-	F11	★ MG055A	75	420	840	TBD	150	0.63(chip)	TBD	TBD	TBD	3	TBD	-	-	○		
			★ MG055B	100	320	640	TBD	150	1.21(chip)	TBD	25480	500	3	TBD	-	-	○		
			★ MG055F	100	420	840	TBD	150	0.64(chip)	TBD	52910	840	3	TBD	-	-	○		
			★ MG055J	200	190	380	TBD	150	3.3(chip)	TBD	55050	799	3	TBD	-	-	○		

■ : New product ★ : Under development ■ : Please contact us.

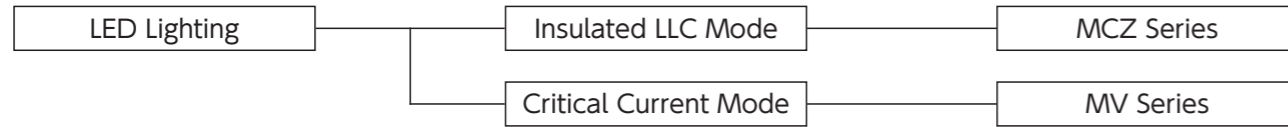
Equivalent Circuit Schematic



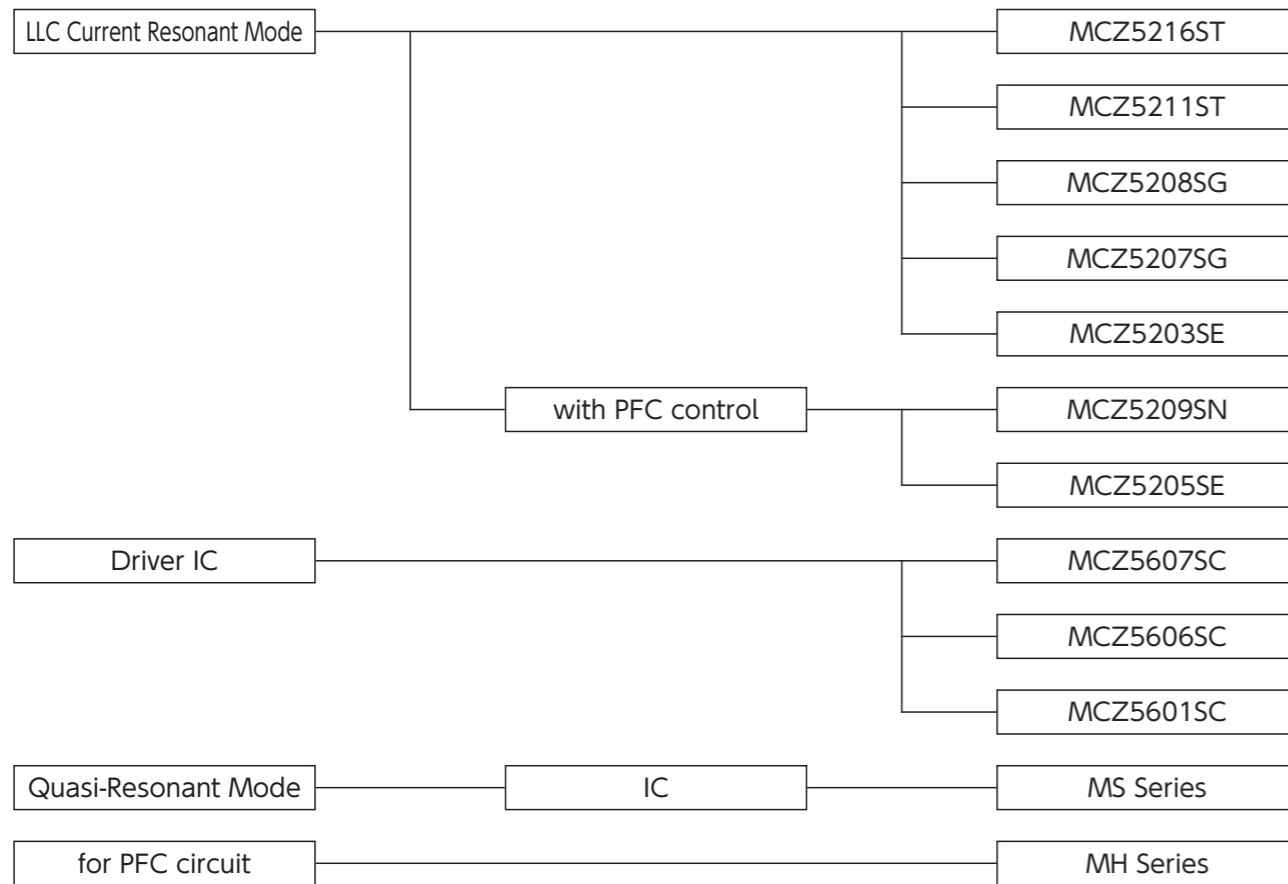
POWER ICs

Line up

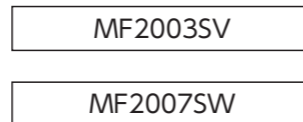
IC for LED Lighting



IC for Power Supply



Ideal Diode IC





IC for LED Lighting

Current Mode Power Supply ICs for LED Lighting : MV Series

- Outline The MV series has a specialized function for LED lighting with PWM & Linear dimming that operates critical current mode without auxiliary winding. On and off width modulation function allows for smooth deep dimming of 1% or less.

MV Series

Critical Current Mode Power Supply ICs for LED Lighting

Package		JEDEC Code JEITA Code House Name	Fig.	Type No.	HV Startup	Vcc [V]	Output	ON/OFF	Built-in Regulator Voltage [V]	Linear Dimming	PWM Dimming	Halogen free	Automotive
	— SOP8J												
				MV1002SC	No	—	—						
				MV1011SC	Yes	—	—						
				MV1012SC	No	—	—						
	— SOP16		L5	MV2002SG	No	10 to 16	2ch	Cont. by REF Voltage	3.3	Yes	Yes	—	—
				MV2052SG	No				5			—	—

POWER ICs

IC for Power Supply

LLC Current Resonant Mode Controller ICs for Bridge Converter : MCZ Series

- Outline** The MCZ series is an advanced symmetric LLC current resonant mode controller for bridge converters. Symmetric LLC resonant converter applications are greatly expanding due to their extremely high efficiency and low noise characteristics.

High/Low Side Driver IC

- Outline** A driving IC for MOSFET and IGBT power devices. With built-in high-withstand voltage components, it can be used for a variety of uses such as inverter and power supply, etc.

Low Power Standby Quasi-Resonant Power Supply ICs : MS Series

- Outline** The MS series consumes much less power in standby mode. The ICs incorporate various functions to make it more user-friendly and easier to design a power supply with fewer external components.

PFC ICs : MH Series

- Outline** The MH series is a PFC circuit control IC which enables multistage interleave. An efficient, high power operation is possible by utilizing a follower IC composed of multistage interleave and a leader IC that can be used alone.








Ideal Diode IC

Ideal Diode IC V-Diode™ MF Series

- Outline** This is an ideal diode IC with a built-in reverse connection and reverse current protection it is used for electronic units with batteries as input sources. By using a built-in or a separate MOSFET to control the IC, it allows reducing the size of the circuit board as well as lowering loss and increasing heat dissipation.




MCZ Series

LLC Current Resonant Mode Controller ICs for Bridge Converter

Package		Type No.	Type	HV Startup	High-side Drive	Vcc (max) [V]	Vin Sensing	Burst Mode	Maximum Frequency [kHz]	X-cap. discharge	Capacitive Mode Protection	Over Voltage Protection	Over Current Protection	Halogen free	Automotive										
JEDEC Code JEITA Code House Name	Fig.																								
	—	L6	 MCZ5216ST	LLC Current Resonant Mode	Yes	35	Yes	Yes	500	Yes	Yes	Latch	Timer Latch	○	—										
	SOP18		 MCZ5211ST	LLC Current Resonant Mode	Yes			Yes	500	No				○	—										
	—	L8	MCZ5209SN	LLC Current Resonant Mode with PFC Control	Yes			35	Yes	Yes				300	No	Yes	Latch	Timer Latch	○	—					
	SOP24		MCZ52075G	LLC Current Resonant Mode	No					Yes				300	No				—	—					
	—	L5	MCZ52085G	LLC Current Resonant Mode	No					35				Yes	Yes				500	No	Yes	Latch	Timer Latch	○	—
	SOP16		MCZ52055E	LLC Current Resonant Mode with PFC Control	No										No				300	No				—	—
	—	L7	MCZ52055E	LLC Current Resonant Mode with PFC Control	No	35	Yes				No	300	No		Yes				Latch	Timer Latch				—	—
	SOP22		MCZ52035E	LLC Current Resonant Mode	No						No	300	No											—	—
	—	L7	MCZ52035E	LLC Current Resonant Mode	No			35	Yes		No	300	No			Yes	Latch	Timer Latch						—	—
	SOP22		MCZ52035E	LLC Current Resonant Mode	No						No	300	No											—	—

 : New product


High/Low Side Driver ICs


Package		Type No.	Output	High-side Floating Supply Voltage [V]	Vcc (max) [V]	Input/Output Channel	Vcc_UVLO [V]	VBS_UVLO [V]	Source [mA]	Sink [mA]	Halogen free	Automotive	
JEDEC Code JEITA Code House Name	Fig.												
	—	L2	High-side/ Low-side	622	22	2/2	8.2 to 8.9	8.2 to 8.9	220	450	○	—	
	SOP8J			 MCZ56065C	622	22	2/2	8.2 to 8.9	8.2 to 8.9	220	450	○	—
				 MCZ56015C	600	22	2/2	8.2 to 9.0	7.2 to 8.0	400	400	○	—

 : New product

MS Series


Low Power Standby Quasi-Resonant Power Supply ICs

Package		Type No.	Vin [V]	Vcc [V]	Over Voltage Protection	Over Current Protection	Stand-by Operation	Bottom Skip	Halogen free	Automotive	
JEDEC Code JEITA Code House Name	Fig.										
	—	L3	95 to 450	11 to 21	Auto restart	Auto restart	Auto Burst Mode	1 skip	○	—	
	SOP8/7J			MS1004SH	11 to 24	Vcc Latch	Timer Latch 2sec. (typ)	Auto Burst Mode/ S-Stby Mode	2 skip	—	—
				MS1003SH	11 to 24	Vcc Latch	Timer Latch 2sec. (typ)	Auto Burst Mode/ S-Stby Mode	1 skip	—	—

 : New product





MH Series


PFC ICs

Package		Type No.	Type	Operation Mode	Vin Sensing	Vcc [V]	Zero Current Detection	Diodes Short Protection	FB Open Short Protection	Over Voltage Protection	Halogen free	Automotive
JEDEC Code JEITA Code House Name	Fig.											
	—	L2	MH2501SC	Critical Current Mode	Leader	13 to 23	Auxiliary Winding	Yes	Yes	Yes	—	—
	SOP8J		MH2511SC	Synchronizes with Leader IC	Follower		Unnecessary	11 to 23	—	No	No	No

MF Series

Ideal Diode IC

Package		Type No.	Featured Type	Operating Voltage [V]	Reverse Connection Protection	Reverse Current Prevention	Ron(typ.) [mΩ]	Quiescent Current/ Shutdown Supply Current	Halogen free	Automotive
JEDEC Code JEITA Code House Name	Fig.									
	—	L9	 MF2003SV	2.5 to 40	Yes	Yes	53	Quiescent Current = 3μA	○	○
	WS0N8									
	—	L10	 MF2007SW	4.5 to 65	Yes	Yes	—	Shutdown Supply Current = 5μA	○	○
	TSSOP10									

 : New product

PACKAGE LIST

A	A1 Package:AX057	A2 Package:AX06	A3 Package:AX06	A4 Package:AX078	A5 Package:AX10	A6 Package:AX10		A7 Package:AX14							
	B	B1 Package:DO-219AB similar <small>CE</small>	B2 Package:DO-219AA similar <small>ME</small>	B3 Package:DO-214AC <small>IE,CE</small>	B4 Package:DO-214AC <small>IE</small>	B5 Package:SC-110B <small>CE</small>	B6 Package:DO-214AA similar <small>ME</small>		B7 Package:DO-214AA similar <small>ME</small>	B8 Package:DO-214AA similar <small>ME</small>	B9 Package:2F	B10 Package:2F	B11 Package:2F		
		C	C1 Package:SOPA-4	C2 Package:TO-269AA <small>IZ,ME,CE</small>	C3 Package:1Z (DIP)	C4 Package:1N (SMD)	C5 Package:1N (DIP)	C6 Package:1NA (SMD)		C7 Package:1NA (DIP)	C8 Package:1W (SMD)	C9 Package:1W (DIP)			
			D	D1 Package:D3K	D2 Package:2S	D3 Package:3S	D4 Package:5S	D5 Package:JB	D6 Package:JA		D7 Package:TSB(4pin),JC(4pin)	D8 Package:TSB(5pin),JC(5pin)	D9 Package:JF	D10 Package:JH	D11 Package:D6K
				E	E1 Package:MCP	E2 Package:D30VC	E3 Package:S2VB	E4 Package:S4VB	E5 Package:S5VB	E6 Package:S10VB		E7 Package:S15VB	E8 Package:S25VB	E9 Package:S50VB	E10 Package:S3WB
			E13 Package:S20WB		E14 Package:SVTA	E15 Package:SVT									

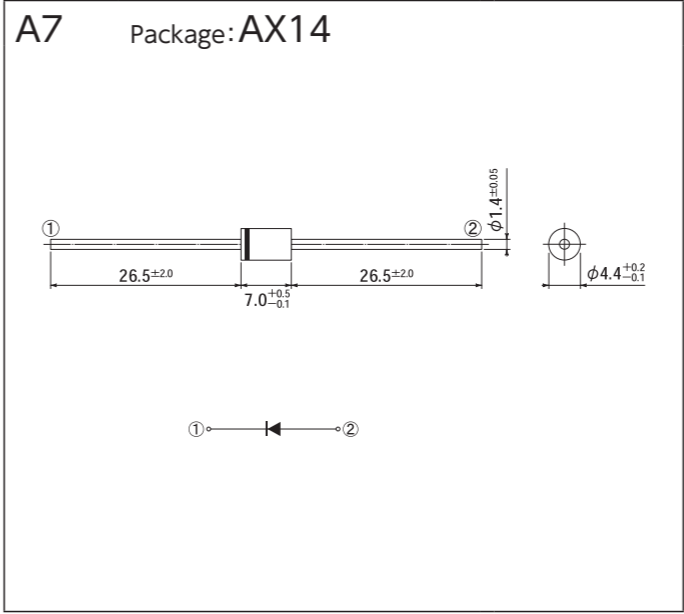
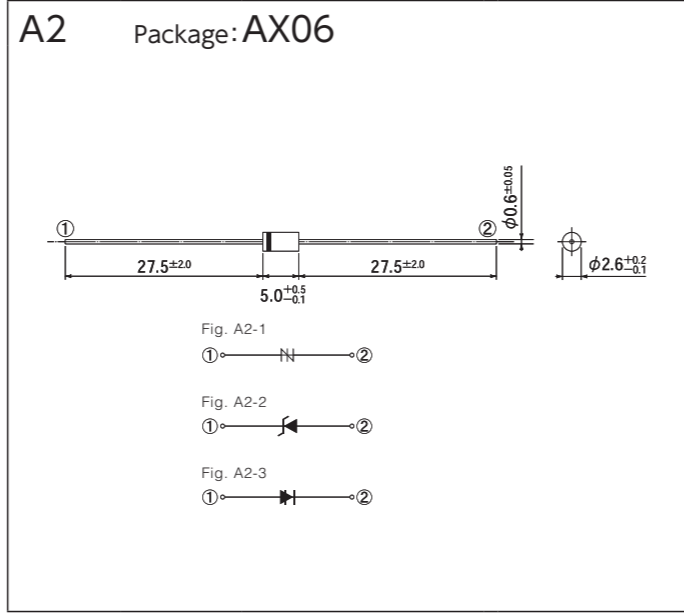
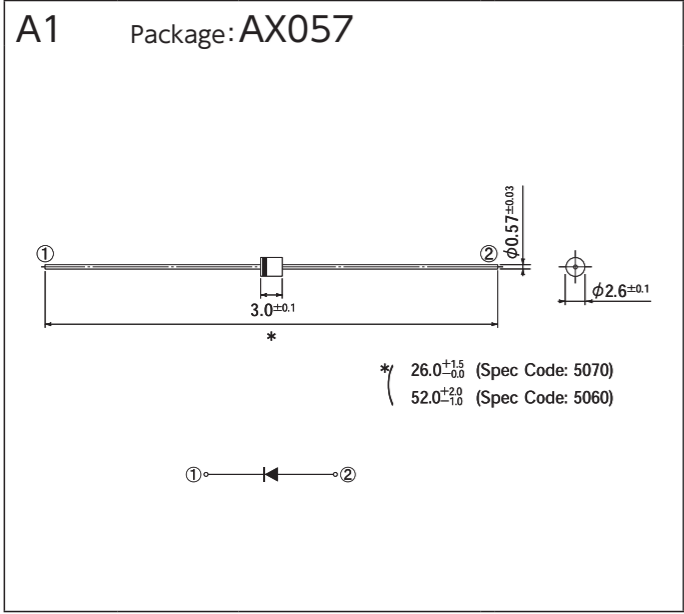
PACKAGE LIST

F	F1 Package:Module	F2 Package:Module	F3 Package:Module	F4 Package:MG001	F5 Package:MG031	F6 Package:MG032		F7 Package:MG038	F8 Package:MG048	F9 Package:MG060	F10 Package:MG061	F11 Package:MG055	F12 Package:MG073
G	G1 Package:SC-63 <small>ESpack</small>	G2 Package:TO-252AA <small>ES</small>	G3 Package:TO-252AB similar <small>ES</small>	G4 Package:TO-277A similar <small>ES</small>	G5 Package:TO-252AA similar <small>ES</small>	G6 Package:LA		G7 Package:MO-235B similar <small>LE</small>	G8 Package:MO-235B <small>LE_Dual</small>	G9 Package:MO-299B <small>LS(TOUL)</small>	G10 Package:MO-299B <small>LS(Ketiv Source)</small>		
H	H1 Package:SC-83 similar <small>STO-220</small>	H2 Package:SC-83 similar <small>ES</small>	H6 Package:TO-263AB <small>EZ</small>	H7 Package:TO-263-SC <small>FZ-2p</small>									
J	J1 Package:SC-91A <small>FTO-220(2pin)</small>	J2 Package:SC-91 <small>FTO-220A(2pin)</small>	J3 Package:SC-91 <small>FTO-220AG(2pin)</small>	J4 Package:SC-91 <small>FTO-220G(2pin)</small>	J6 Package:SC-91A <small>FTO-220(3pin)</small>	J7 Package:SC-91 <small>FTO-220A(3pin)</small>		J8 Package:SC-91 <small>FTO-220AG(3pin)</small>	J9 Package:SC-91 <small>FTO-220G(3pin)</small>				
K	K2 Package:TO-247AD <small>MTO-3P(2pin)</small>	K4 Package:TO-247AD <small>MTO-3P(3pin)</small>	K5 Package:TO-247AD <small>MTO-3P(3pin)</small>	K6 Package:TO-247AD <small>MTO-3Pv</small>	K7 Package:TO-247AD <small>MTO-3Pv</small>	K8 Package:TO-247AD <small>GC</small>							
L	L1 Package:SOP8	L2 Package:SOP8J	L3 Package:SOP8/7J	L5 Package:SOP16	L6 Package:SOP18	L7 Package:SOP22		L8 Package:SOP24	L9 Package:WSON8	L10 Package:TSSOP10			

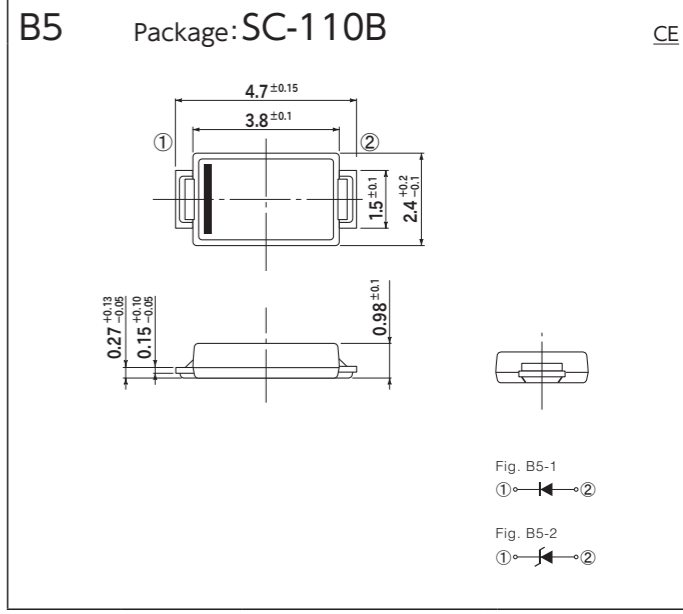
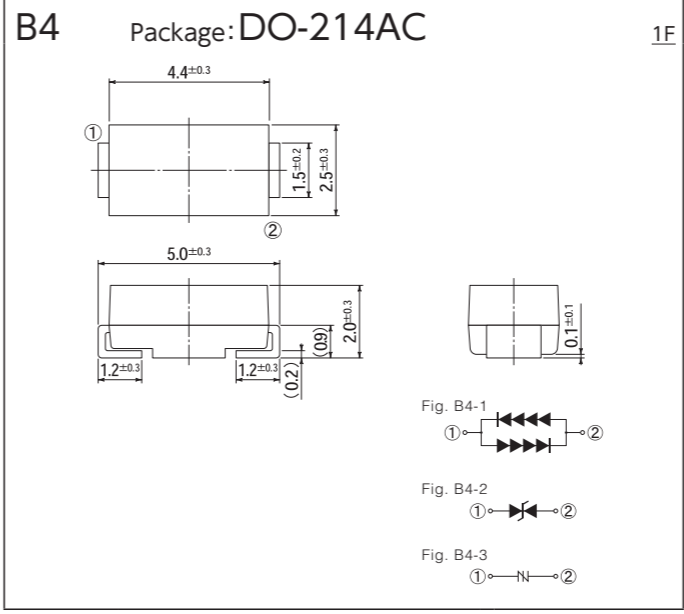
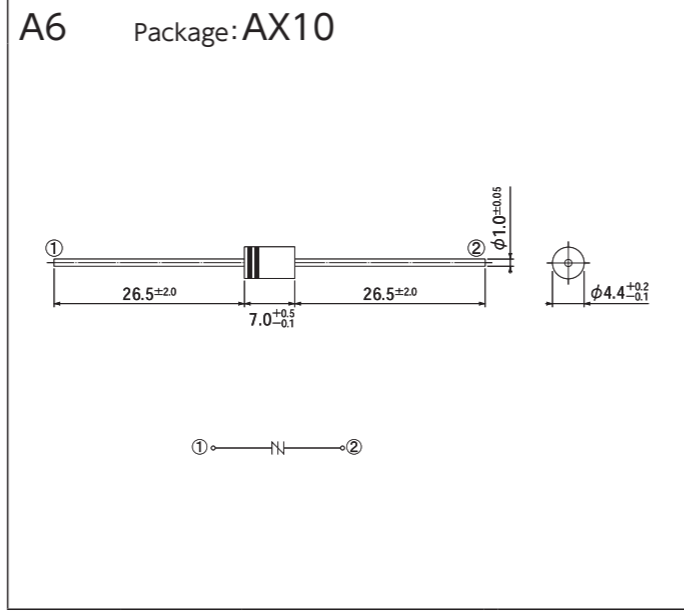
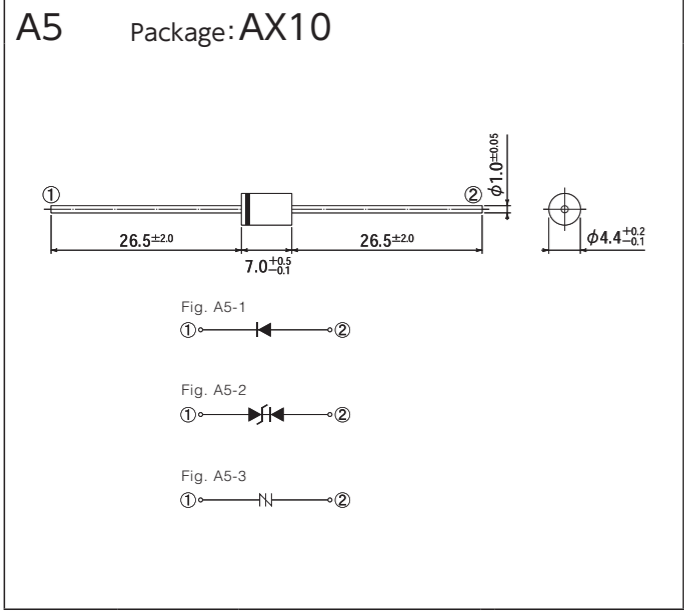
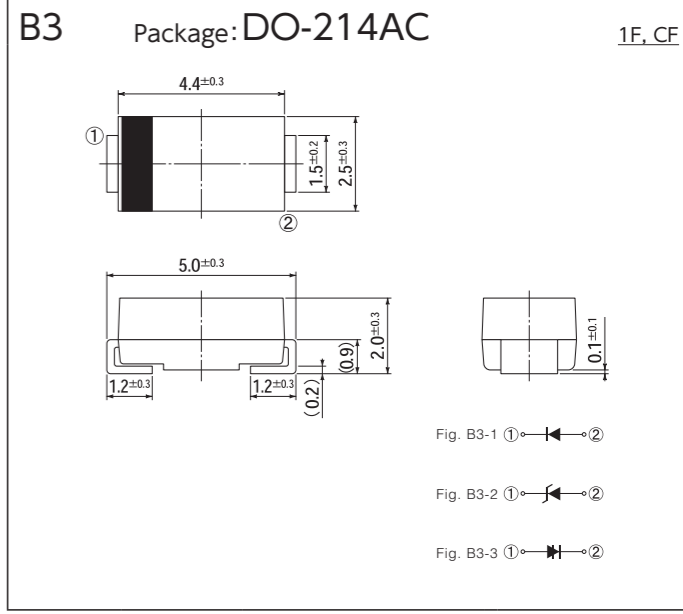
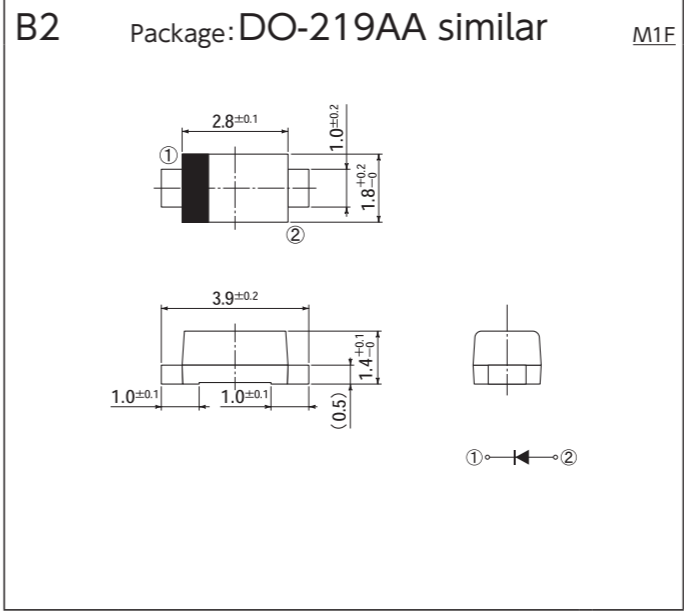
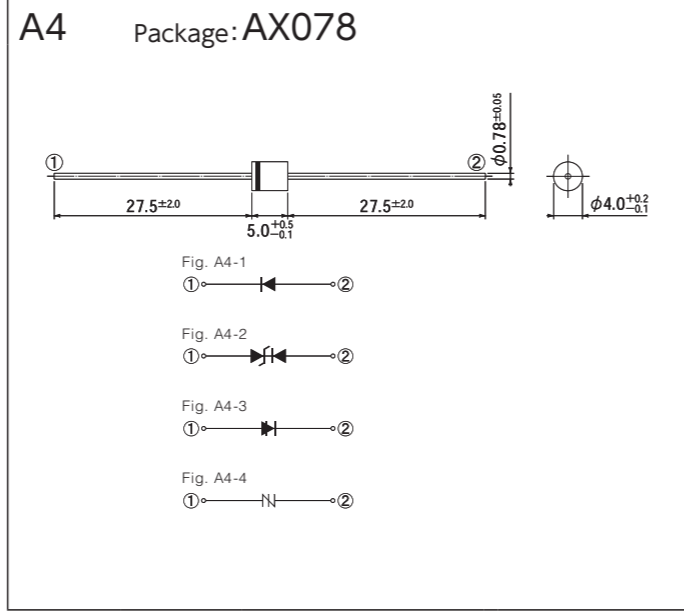
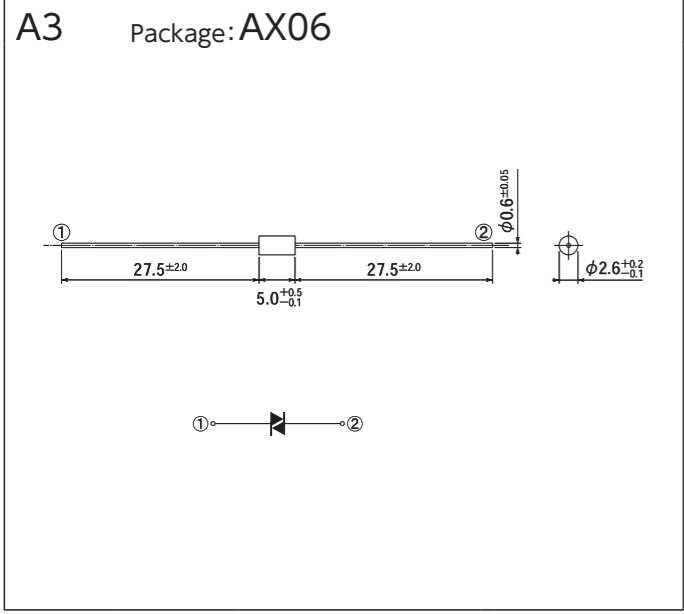
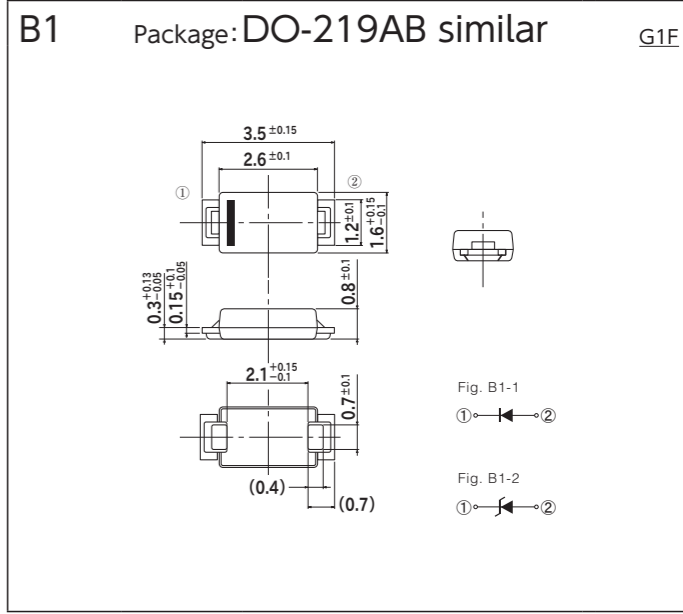
PACKAGE LIST

OUTLINE DIMENSIONS

[Unit:mm]



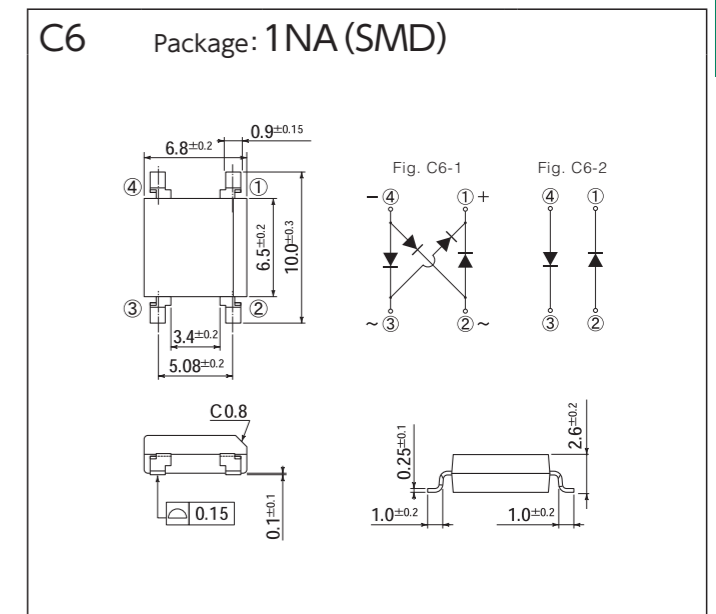
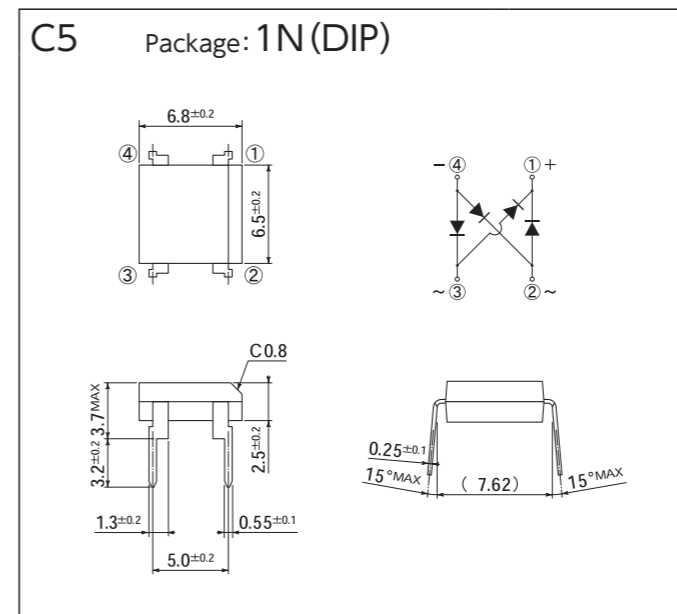
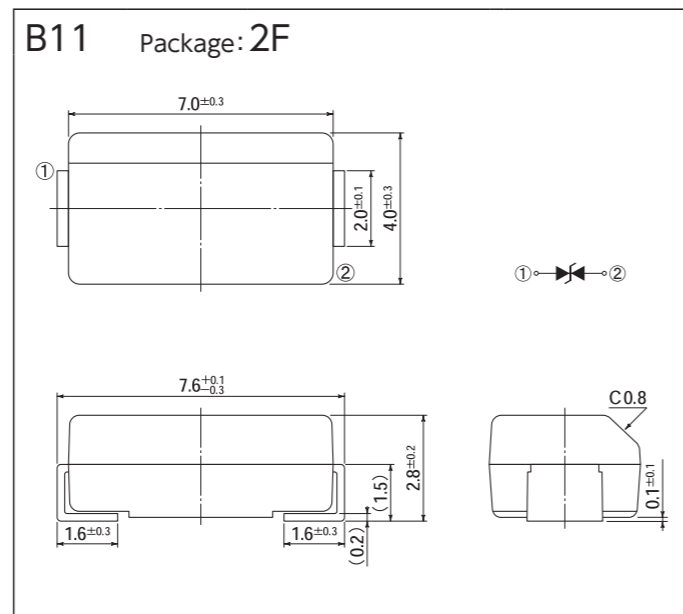
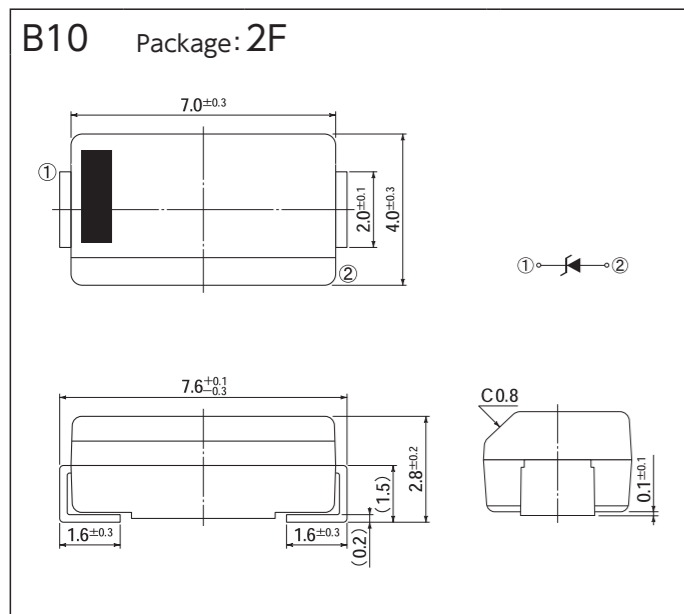
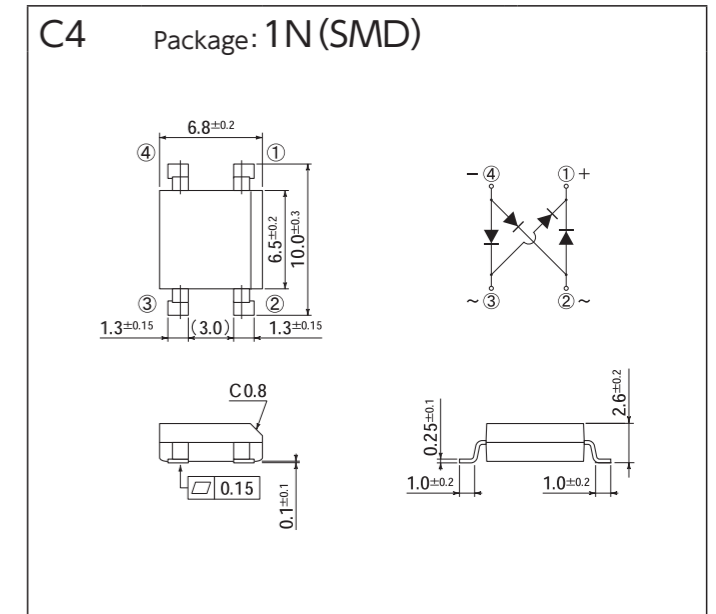
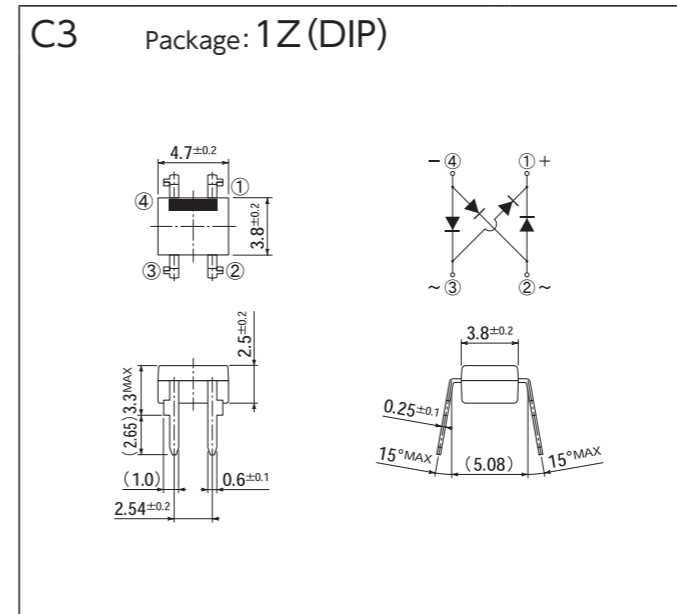
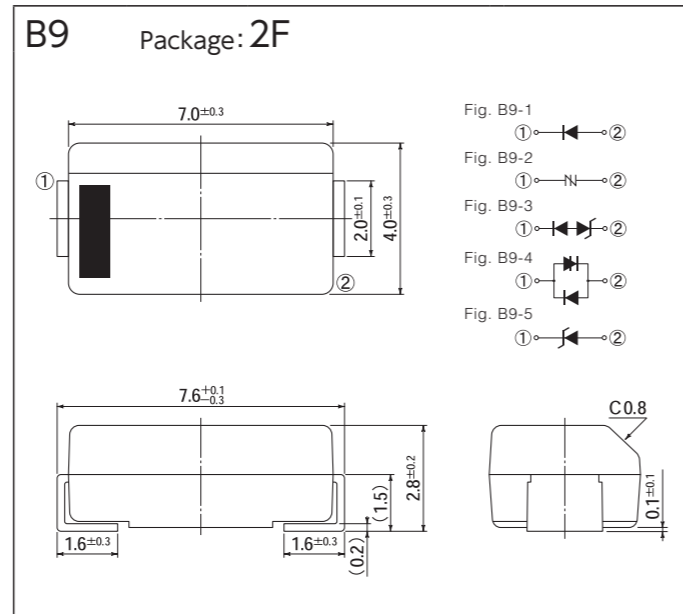
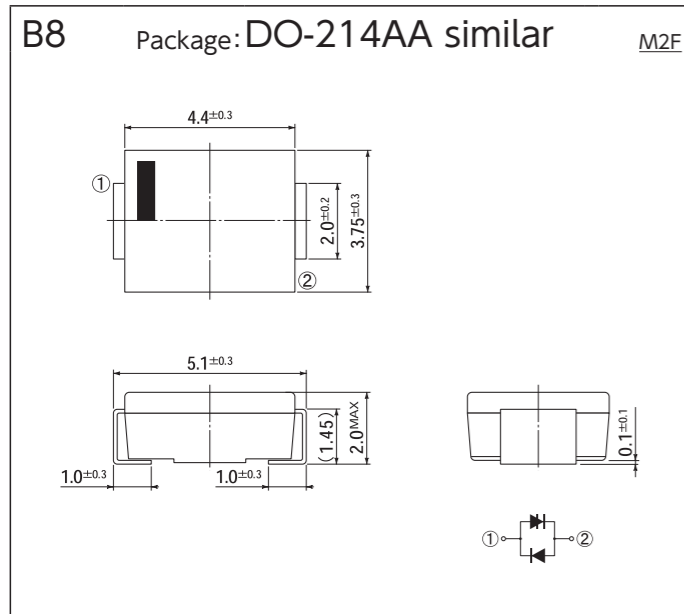
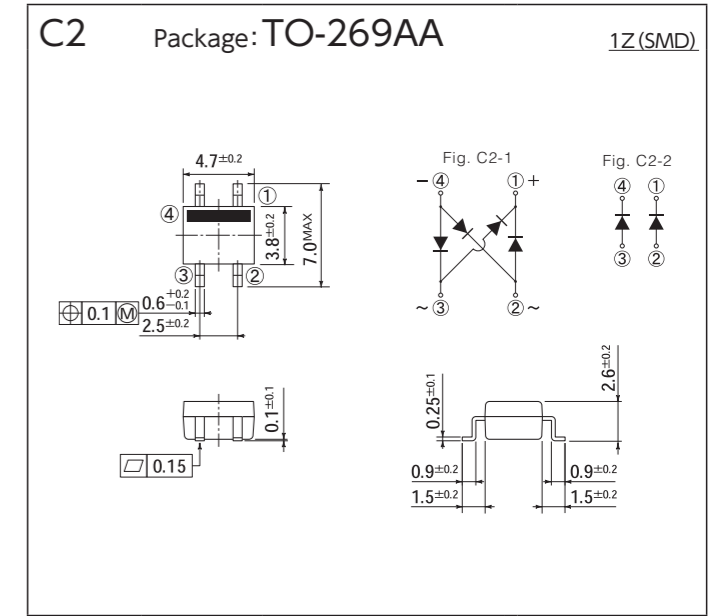
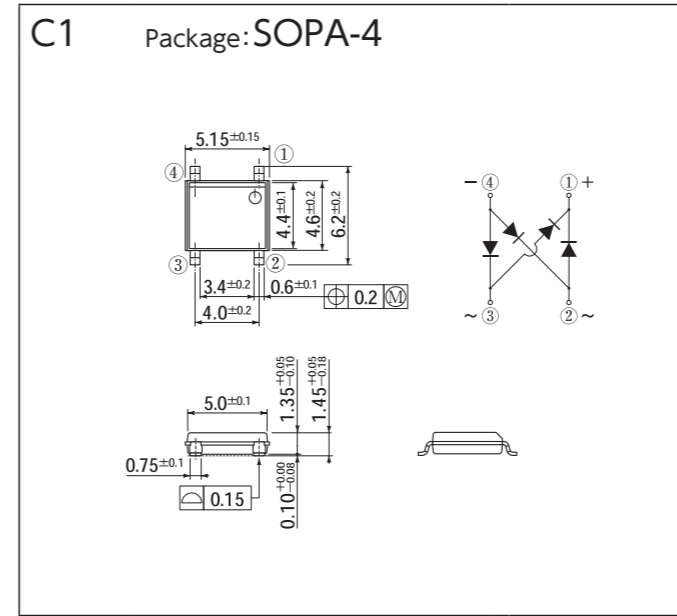
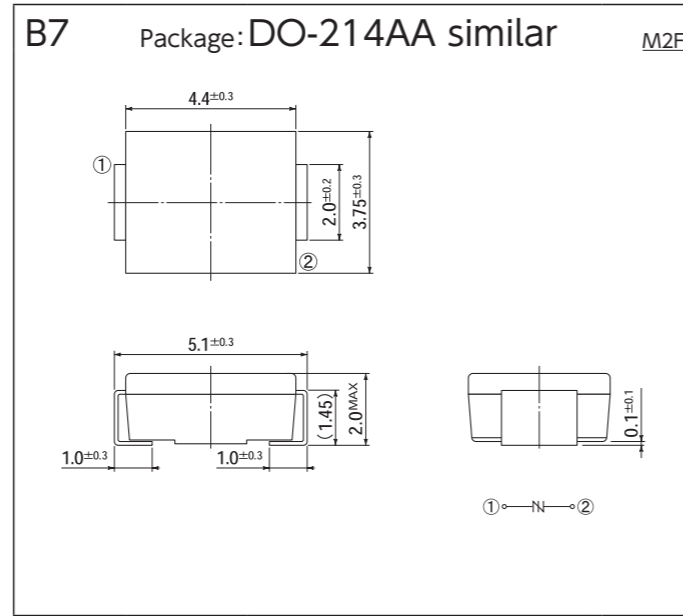
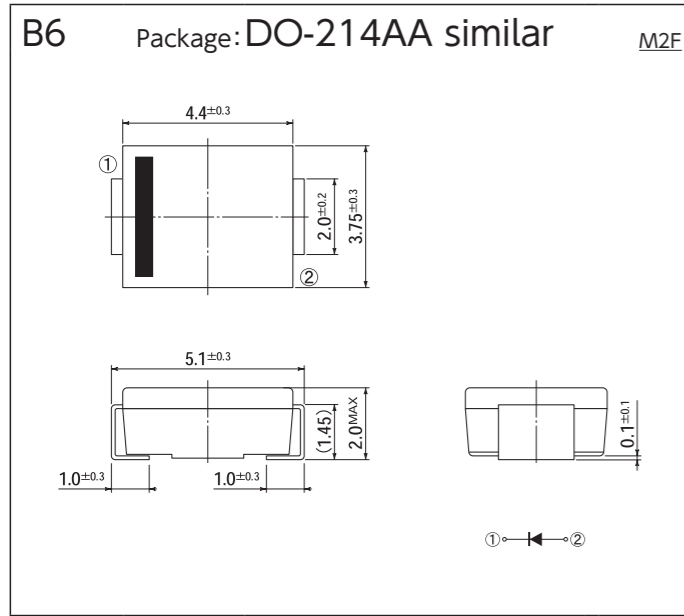
[Unit:mm]



OUTLINE DIMENSIONS

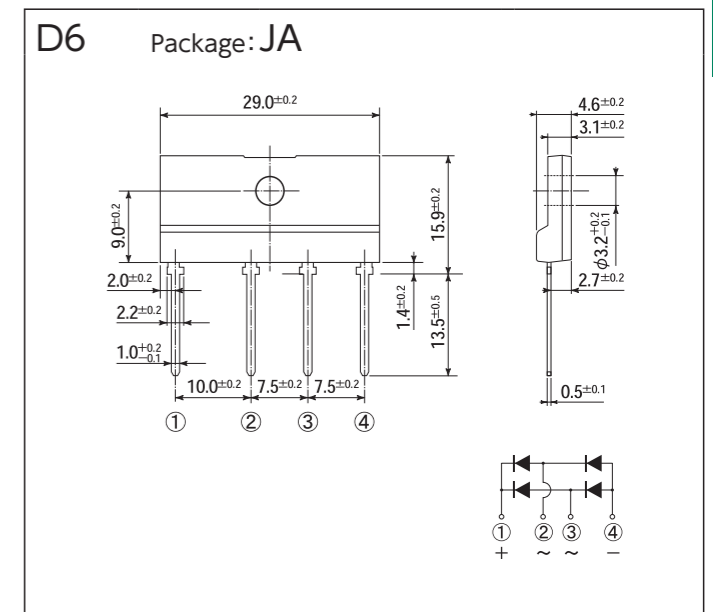
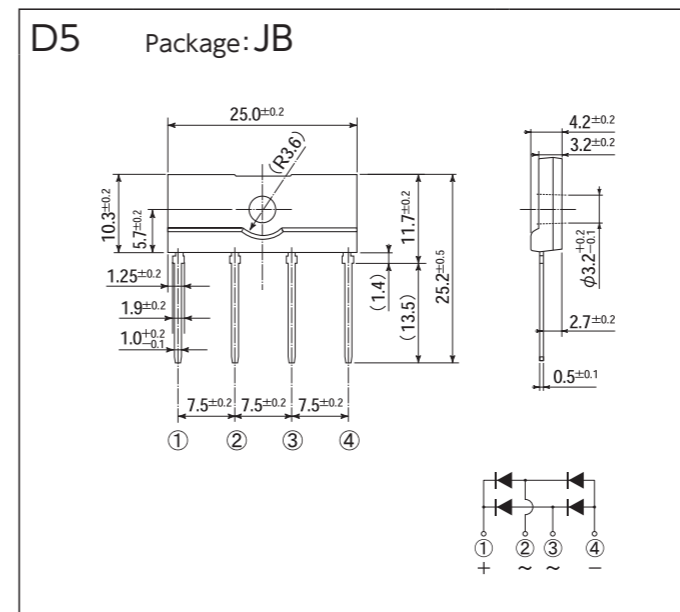
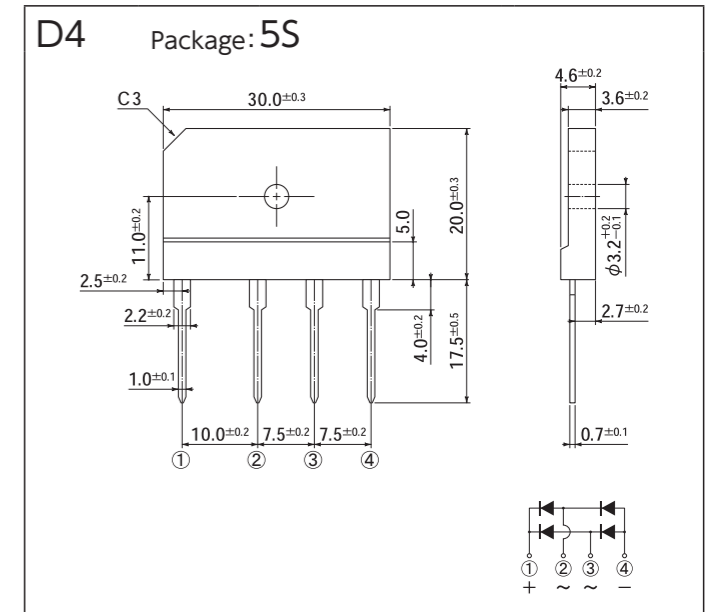
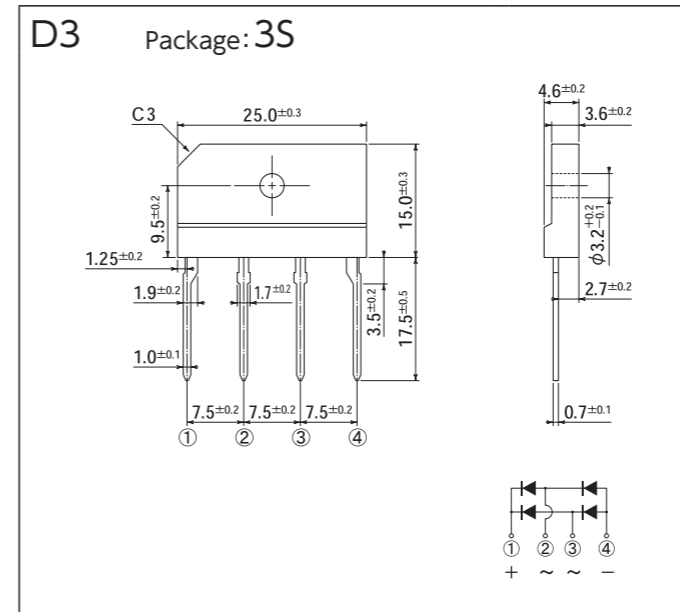
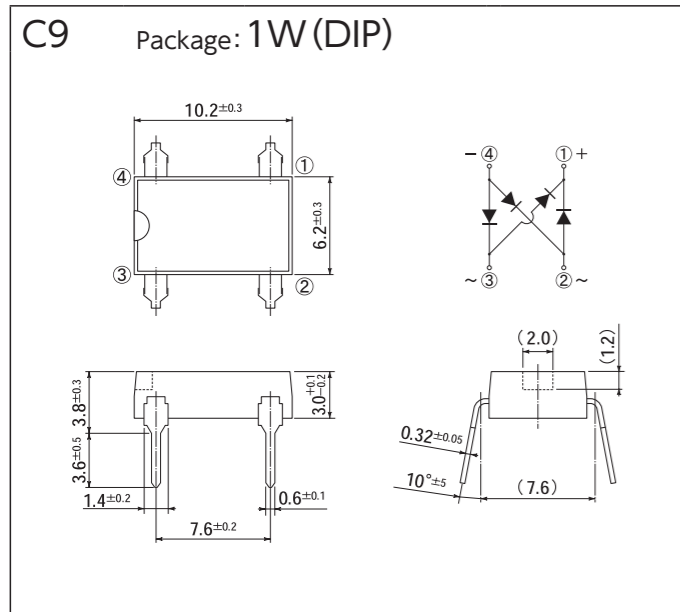
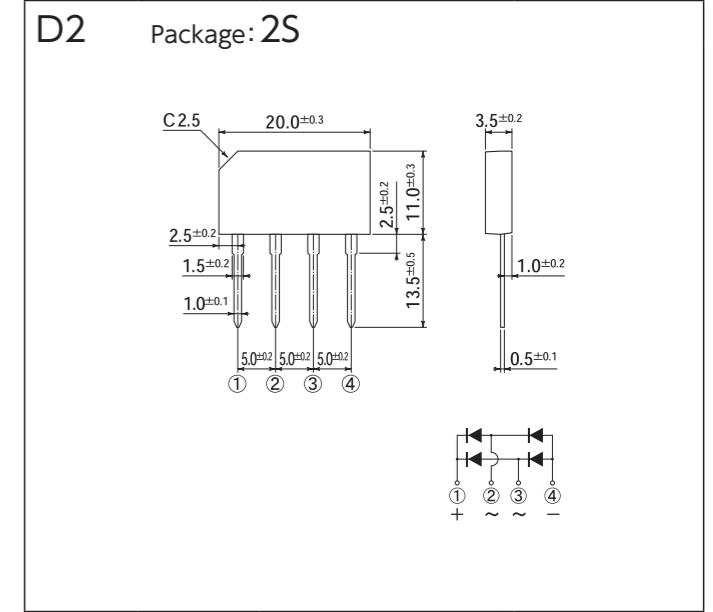
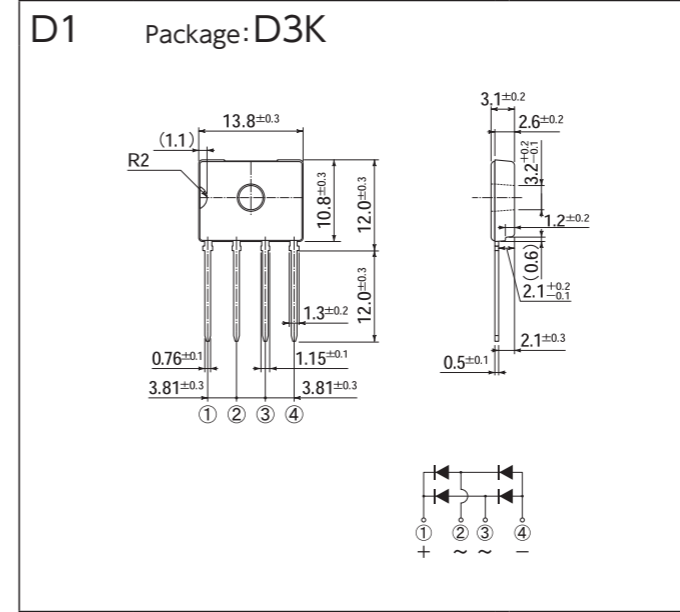
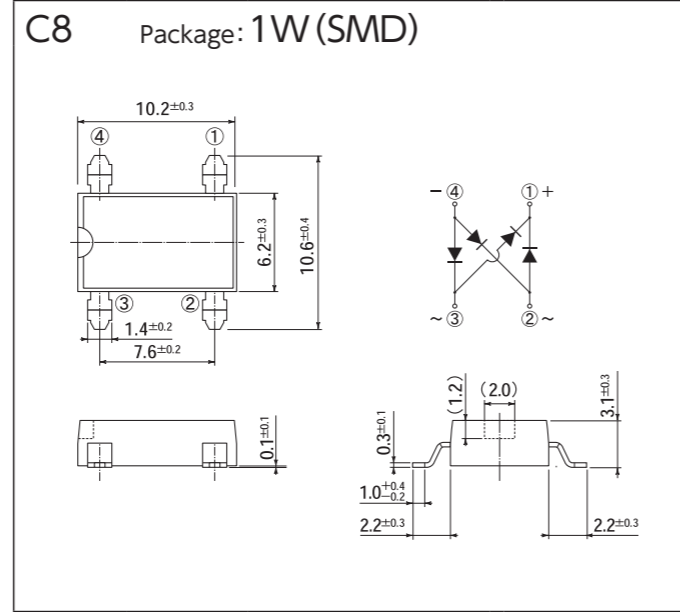
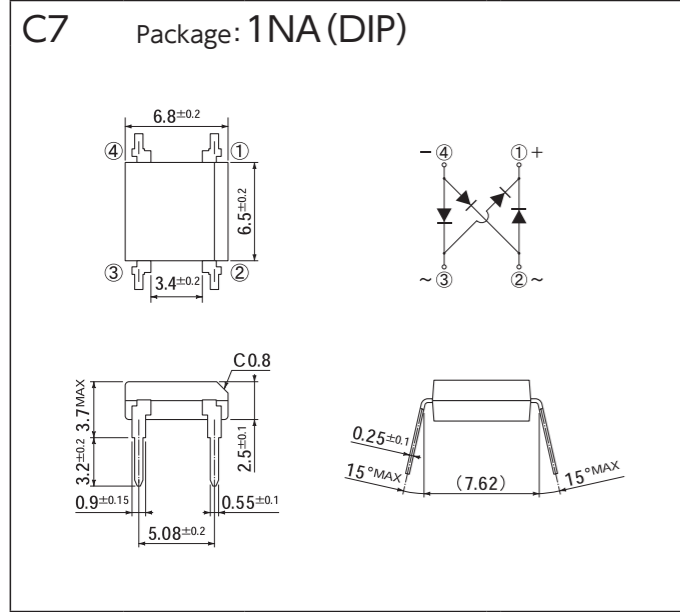
OUTLINE DIMENSIONS

[Unit:mm]



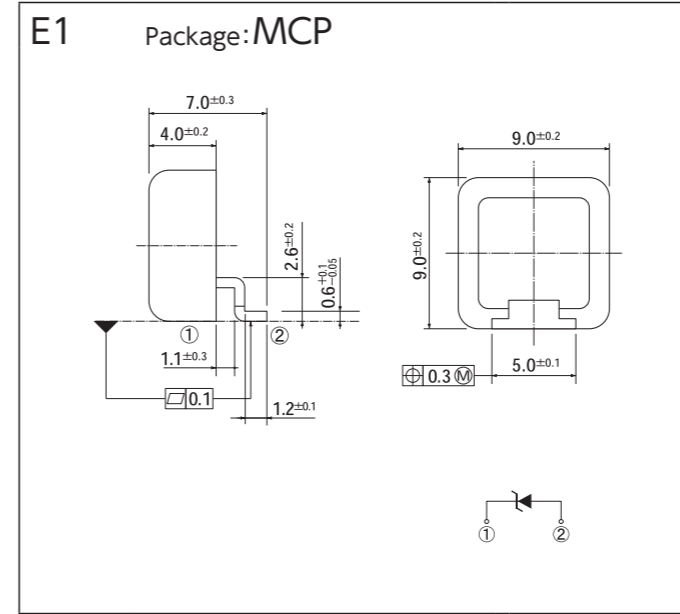
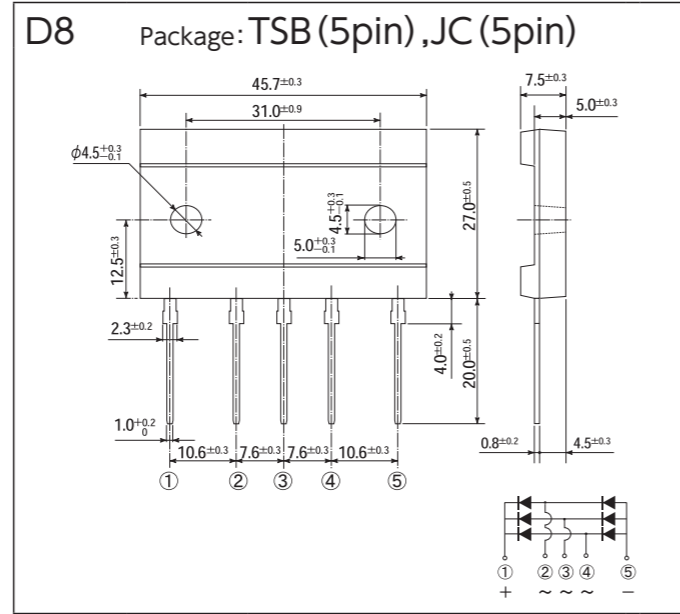
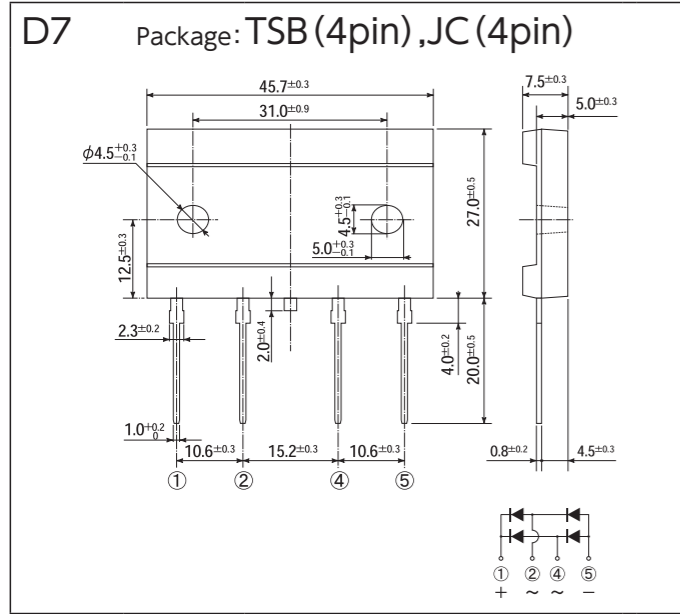
OUTLINE DIMENSIONS

[Unit:mm]

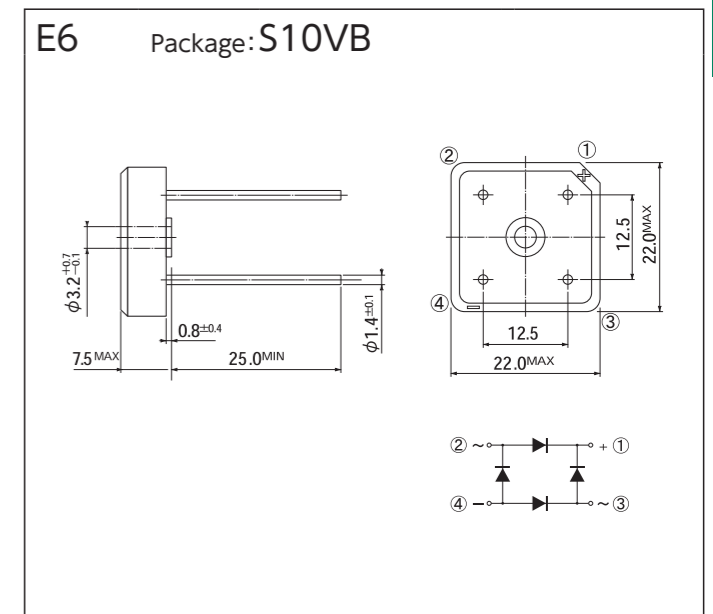
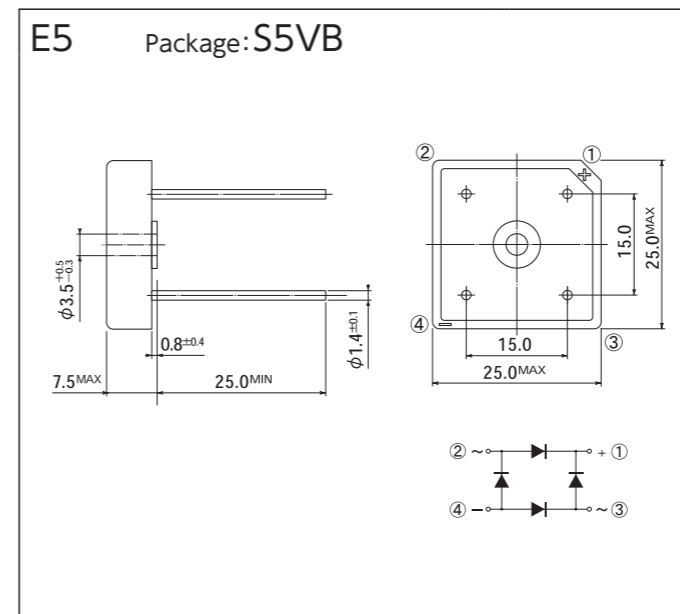
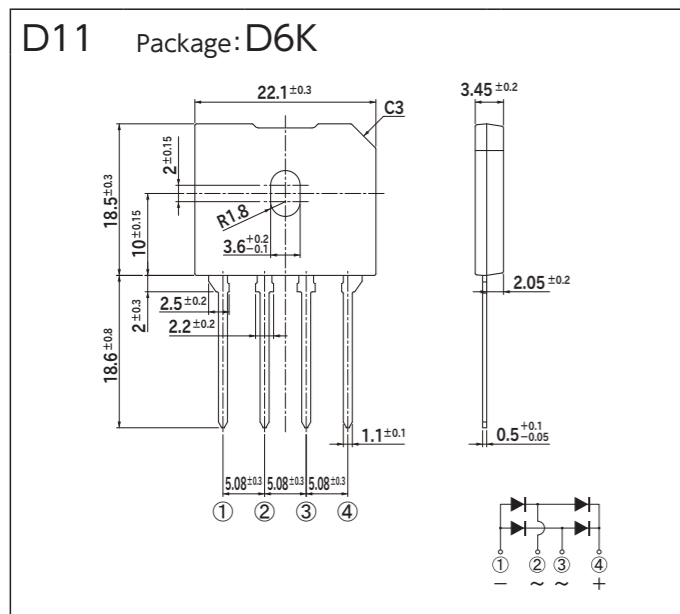
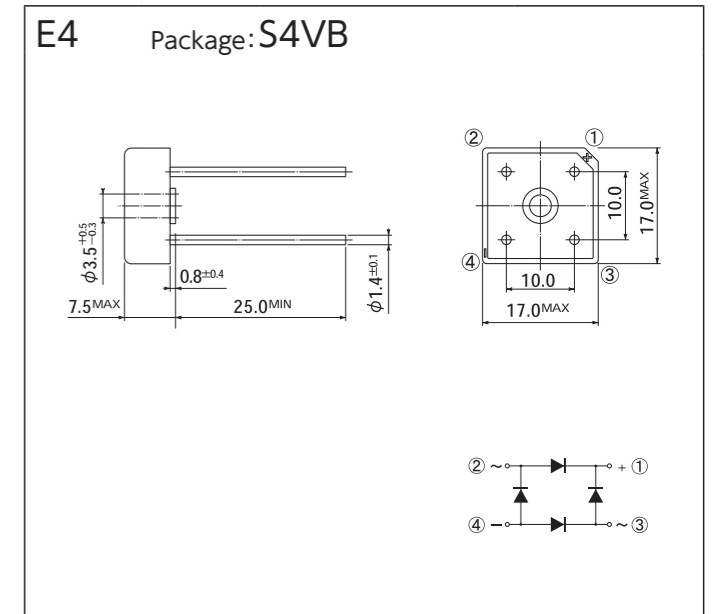
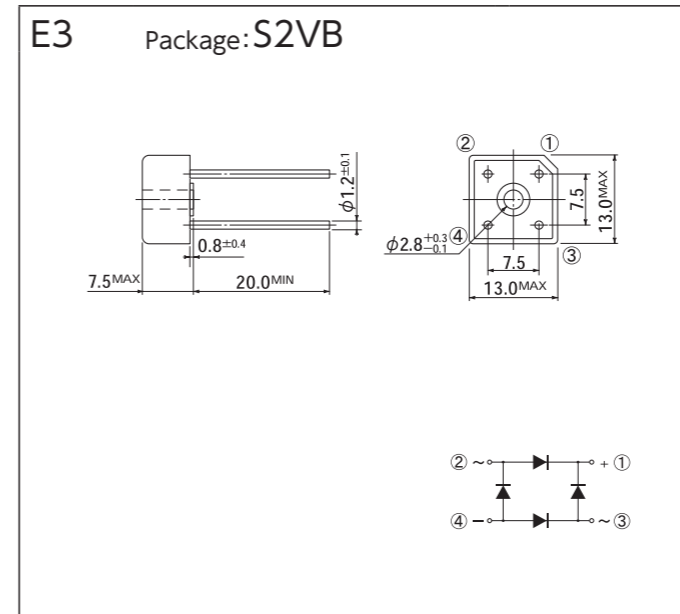
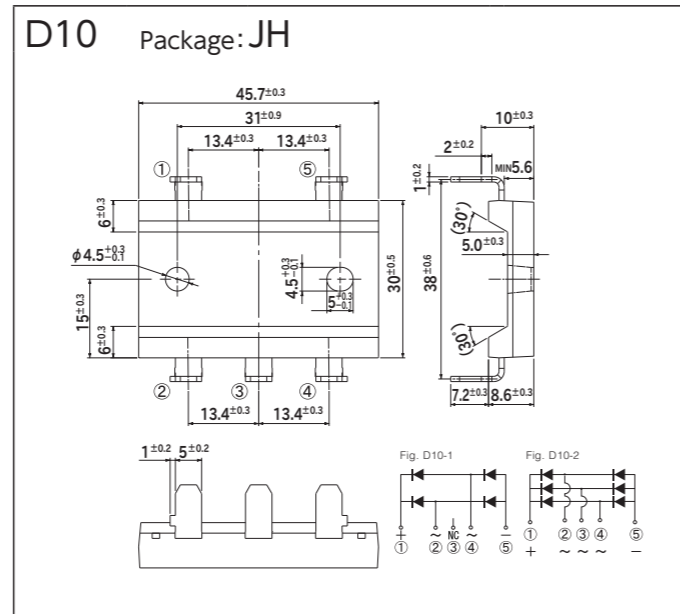
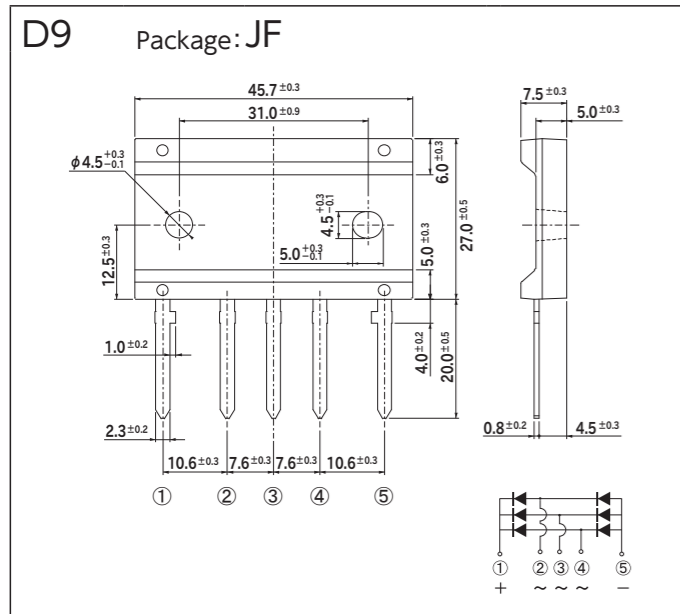
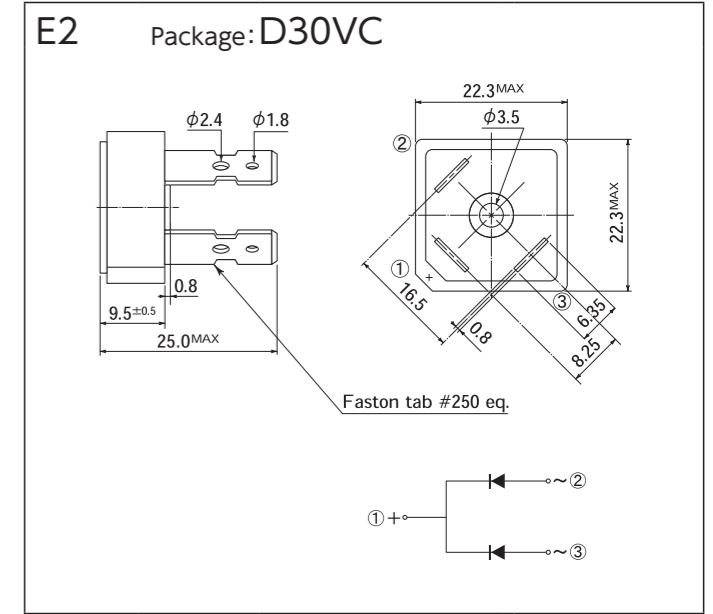


OUTLINE DIMENSIONS

[Unit:mm]



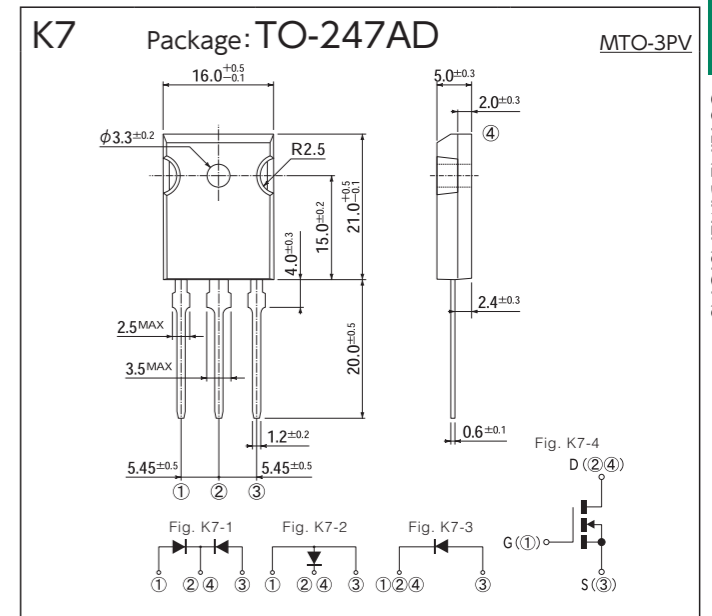
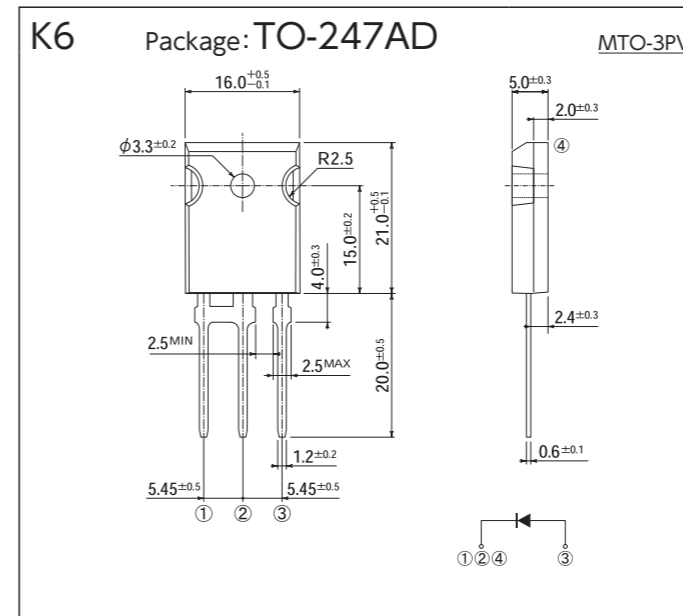
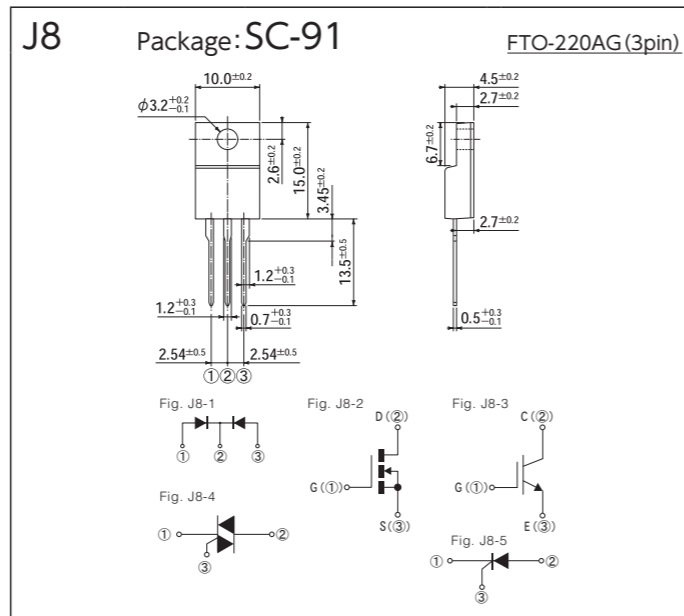
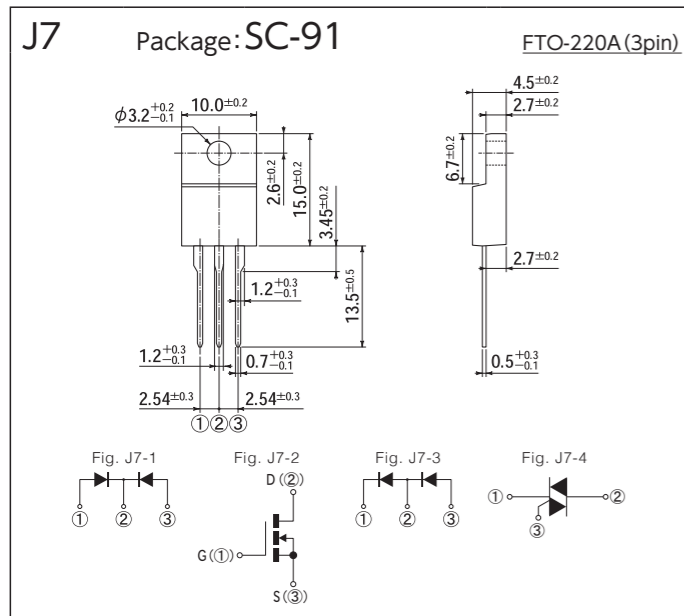
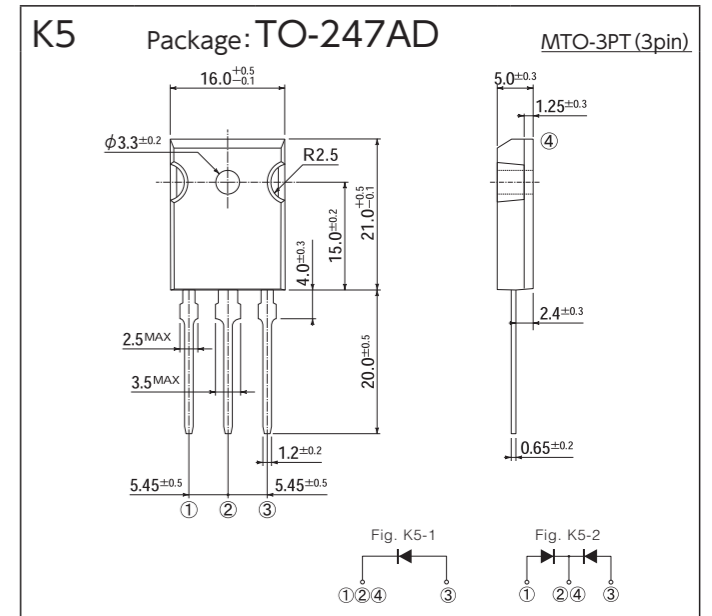
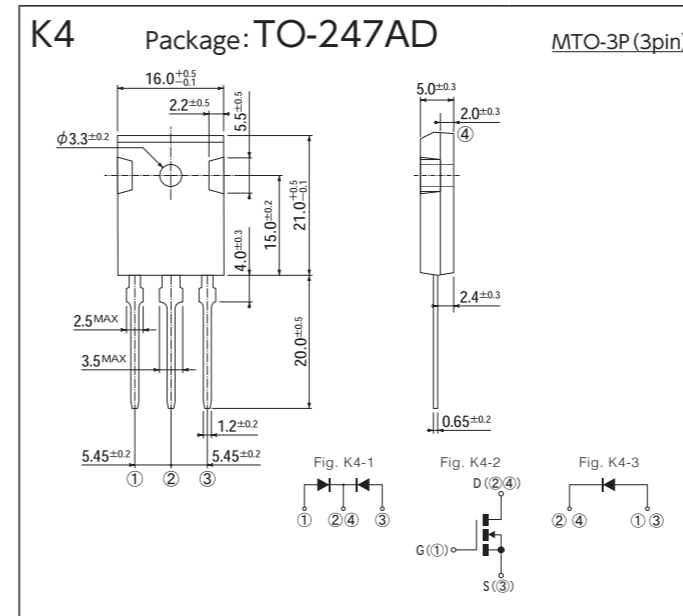
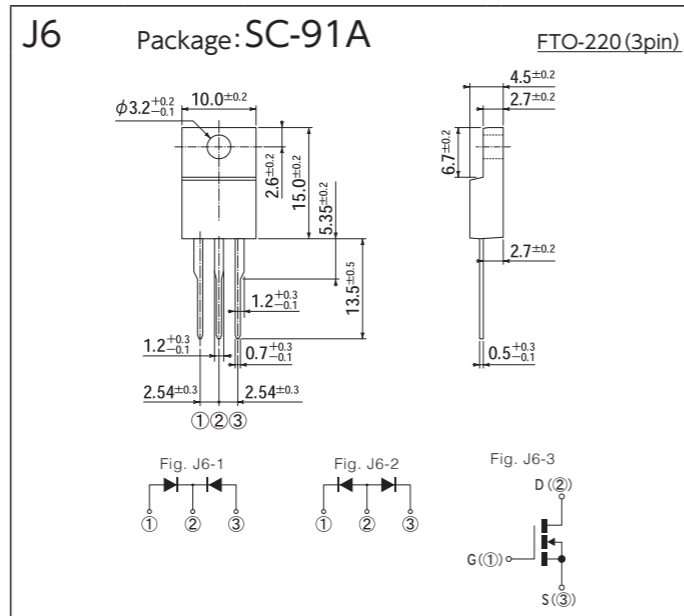
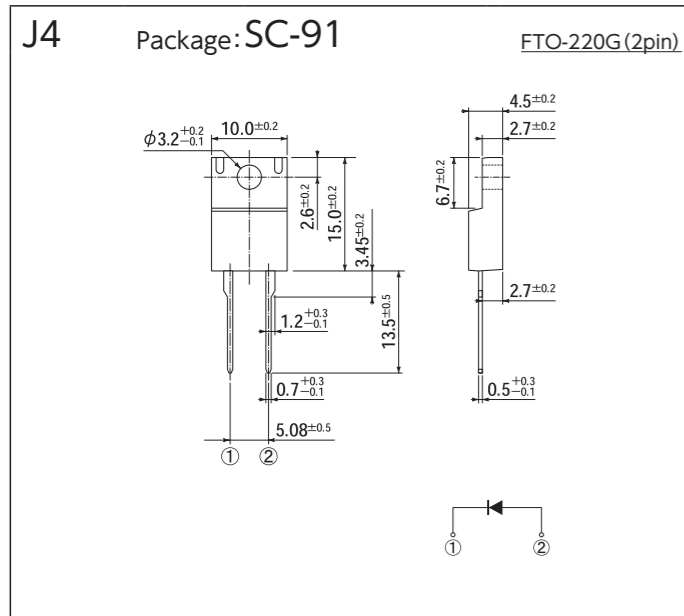
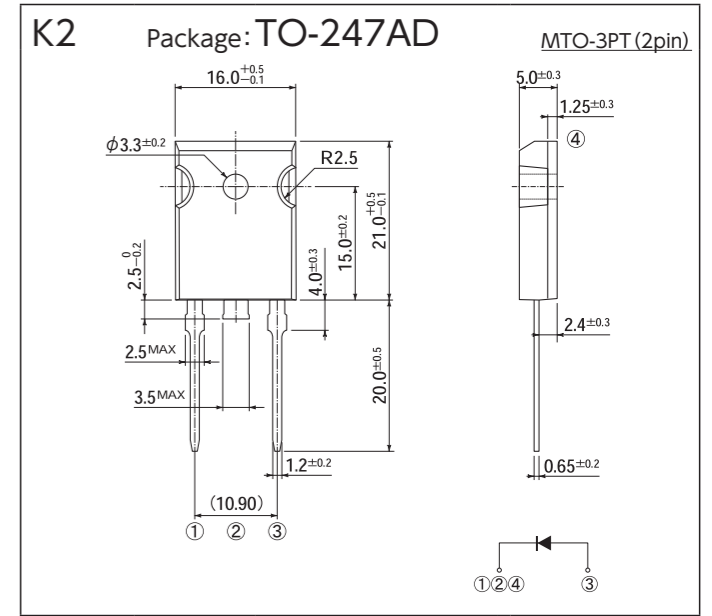
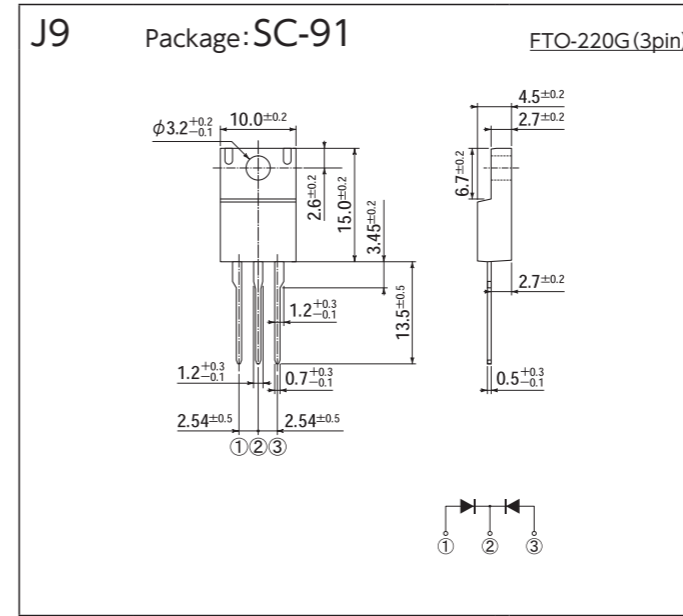
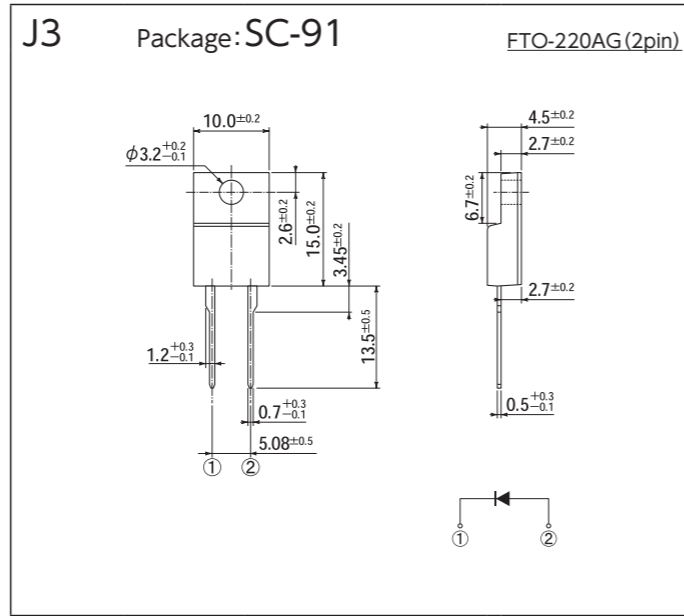
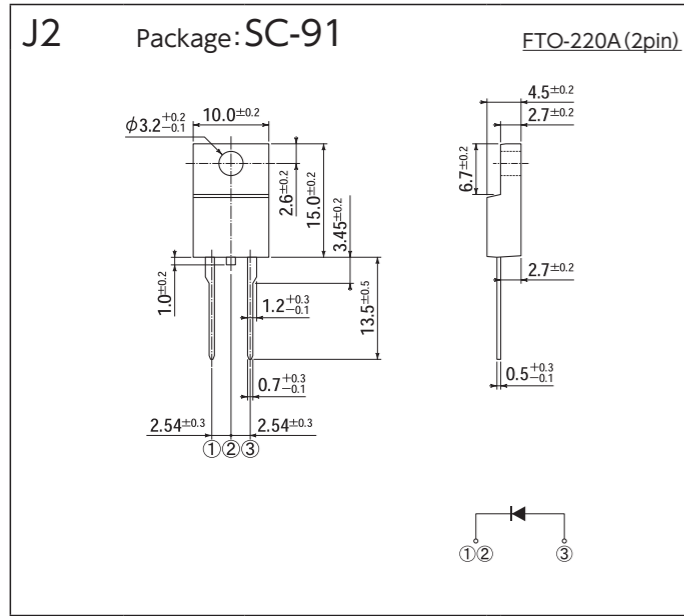
[Unit:mm]



OUTLINE DIMENSIONS

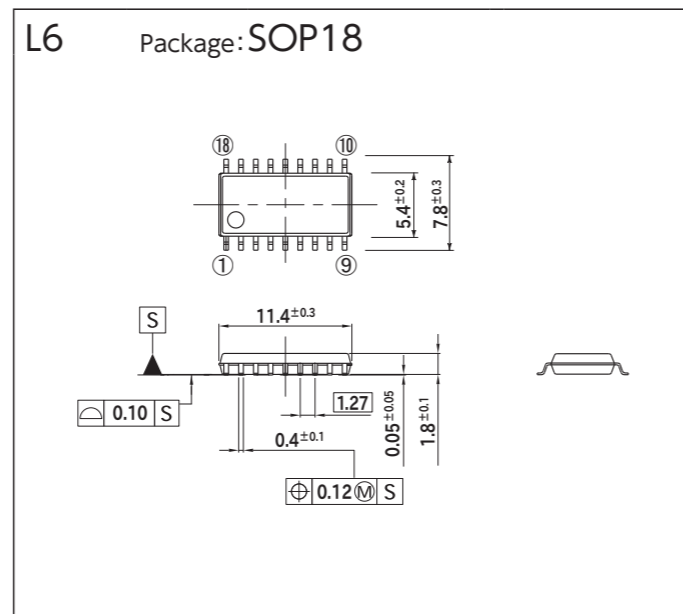
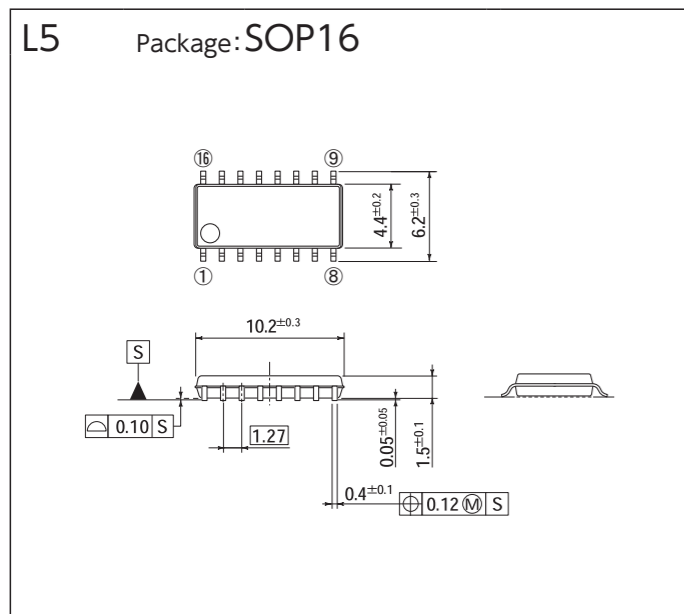
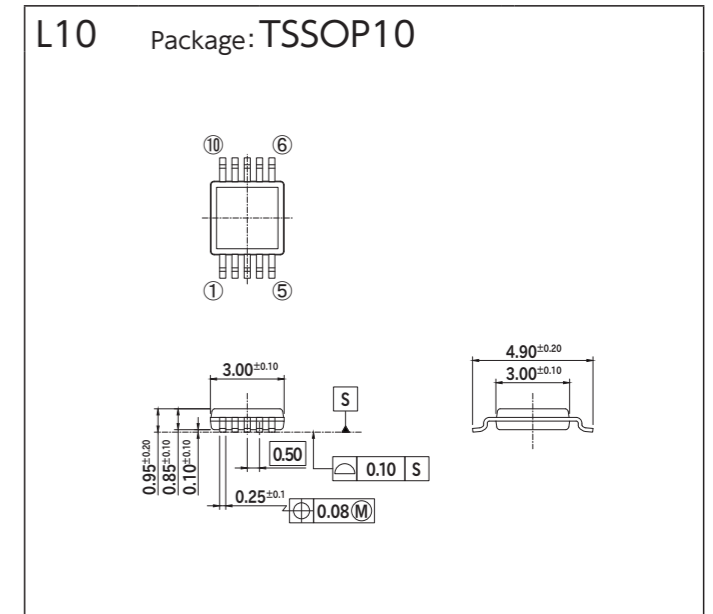
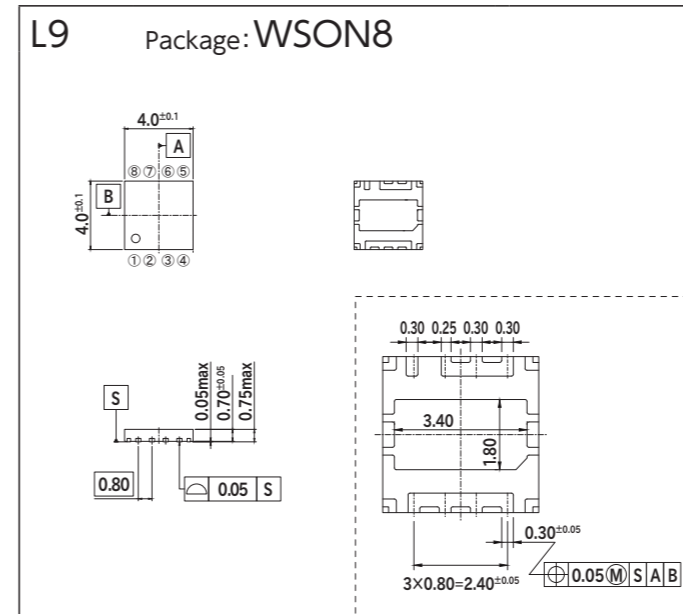
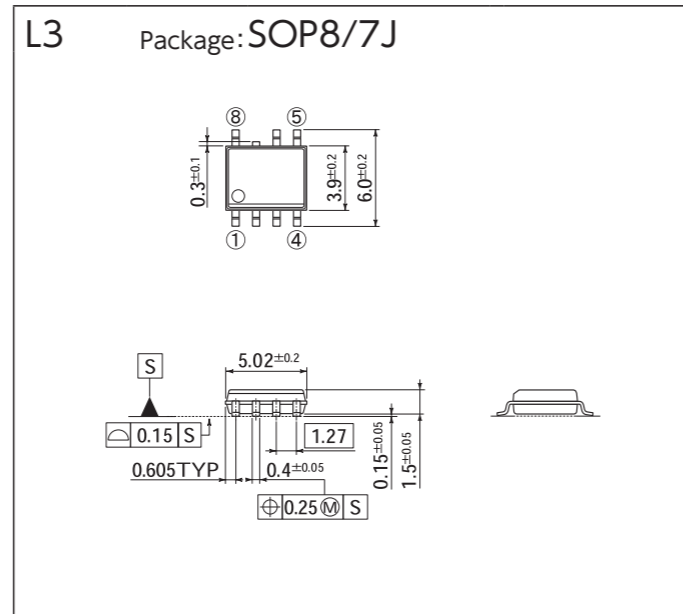
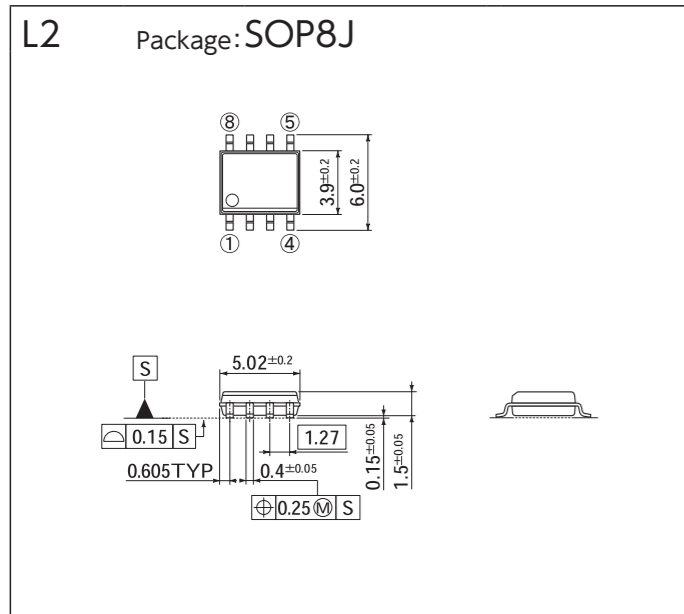
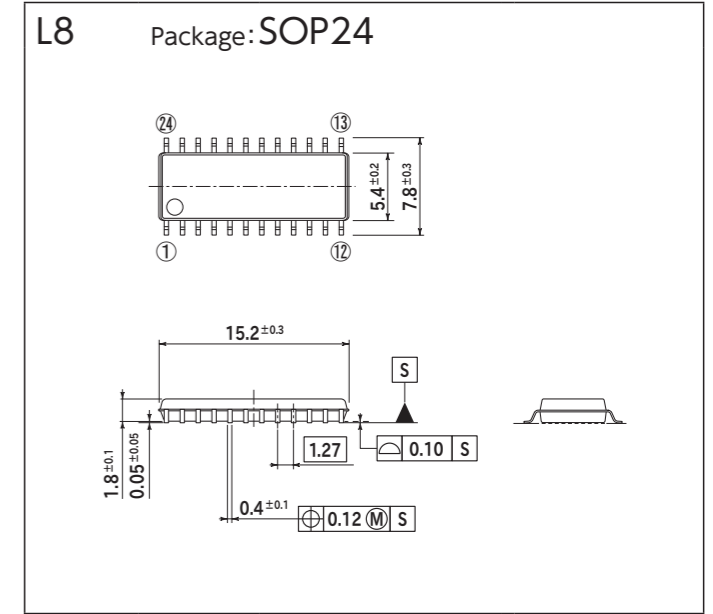
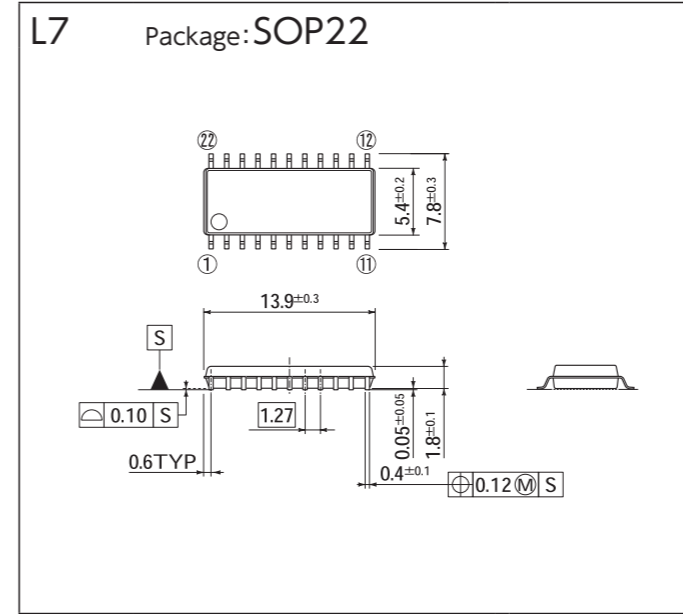
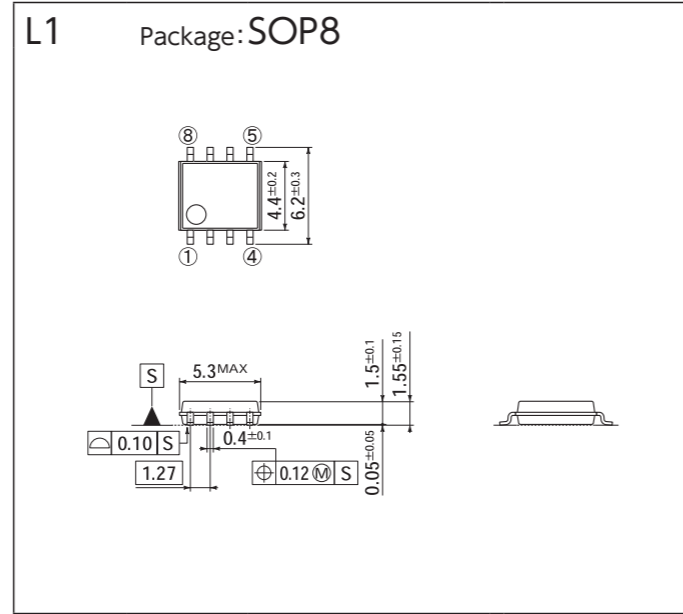
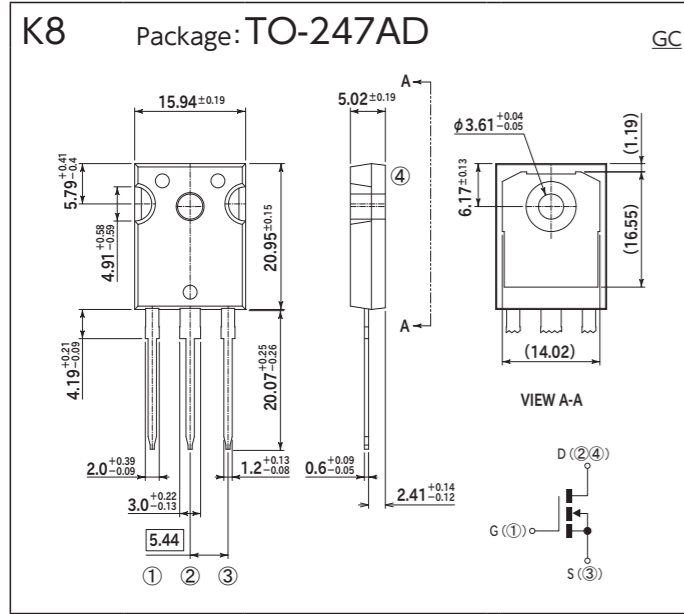
OUTLINE DIMENSIONS

[Unit:mm]



OUTLINE DIMENSIONS

[Unit:mm]



OUTLINE DIMENSIONS

PACKING SPECIFICATION

Please make your order: 'more than Inner Box Quantities' and 'a multiple of each Packing Unit'

Order Quantity & Packing Dimensions List

Please make your order: 'more than Inner Box Quantities' and 'a multiple of each Packing Unit'

Package			Fig.	Spec Code	Terminal Plating	Weight (aprx.)	MSL	Remarks	Quantity	Inner Box			Standard Packing			Packing Box (mm)		
JEDEC Package Code	JEITA Code	House Name								Method	Quantity (Pcs./Box)	Pcs./Box	Weight (kg)	L	W	H		
-	-	AX057	A1	-5060	Sn	190mg	-	Standard	4,000	Tape,Ammo-Pack	52mm	4,000	32,000	7.5	330	280	270	
-	-	AX06	A2	-5070	Sn-Bi	210mg	-	Standard	3,000	Tape,Ammo-Pack	26mm	3,000	36,000	6.2	340	275	230	
-	-	AX078	A4	-7000	Sn-Bi	390mg	-	Standard	200	Bulk		200	20,000	5.9	480	355	230	
-	-	AX10	A5	-7060	Sn-Bi	640mg	-	Standard	4,000	Tape,Ammo-Pack	52mm	4,000	64,000	14.0	325	325	420	
-	-	AX14	A7	-7061	Sn	1.1g	-	Standard	4,000	Tape&Reel,Diameter 300 φ	52mm	4,000	20,000	6.3	325	325	420	
-	-	AX078	A4	-7070	Sn-Bi	390mg	-	Standard	3,000	Tape,Ammo-Pack	26mm	3,000	72,000	15.7	325	325	420	
-	-	AX10	A5	-5000	Sn	640mg	-	Standard	200	Bulk		200	16,000	7.9	480	355	230	
-	-	AX14	A7	-5060	Sn	1.1g	-	Standard	2,000	Tape,Ammo-Pack	52mm	2,000	32,000	14.7	325	325	420	
-	-	AX14	A7	-5061	Sn	1.1g	-	Standard	1,500	Tape,Ammo-Pack	26mm	1,500	18,000	7.2	325	325	260	
-	-	AX14	A7	-5061	Sn	1.1g	-	Standard	200	Bulk		200	16,000	7.9	480	355	230	
-	-	AX14	A7	-5061	Sn	1.1g	-	Standard	1,200	Tape,Ammo-Pack	52mm	1,200	9,600	7.3	325	325	260	
-	-	AX14	A7	-5061	Sn	1.1g	-	Standard	2,500	Tape&Reel,Diameter 300 φ	52mm	2,500	12,500	10.8	325	325	420	
-	-	AX14	A7	-5061	Sn	1.1g	-	Standard	200	Bulk		200	16,000	17.5	480	355	230	
-	-	AX14	A7	-5061	Sn	1.1g	-	Standard	1,200	Tape,Ammo-Pack	52mm	1,200	9,600	11.2	325	325	260	
-	-	AX14	A7	-5061	Sn	1.1g	-	Standard	2,500	Tape&Reel,Diameter 300 φ	52mm	2,500	10,000	13.0	350	355	350	
DO-219AB similar	SC-109	G1F	SMD	B1	-5063R	Sn	12mg	1	4,000	Tape&Reel,Diameter 180 φ		24,000	48,000	1.6	180	205	210	
DO-219AA similar	-	M1F	SMD	B2	-6063	Sn	25mg	1	2,500	Tape&Reel,Diameter 180 φ		15,000	75,000	4.5	405	210	220	
DO-214AC	-	1F CF	SMD	B3 B4	-5103	Sn	60mg	1	100	Magazine		100	15,000	2.3	545	145	110	
-	SC-110B	CE	SMD	B5	-5063R	Sn	30mg	-	2,000	Tape&Reel,Diameter 180 φ		8,000	40,000	4.1	340	195	205	
-	SC-110B	CE	SMD	B5	-5063R	Sn	30mg	-	7,500	Tape&Reel,Diameter 330 φ		45,000	90,000	10.8	395	245	395	
DO-214AA similar	-	M2F	SMD	B6 B7 B8	-5063	Sn	75mg	1	3,000	Tape&Reel,Diameter 180 φ		12,000	24,000	1.6	180	205	210	
-	-	2F	SMD	B9 B10 B11	-5103	Sn	180mg	1	1,000	Tape&Reel,Diameter 180 φ		4,000	20,000	3.4	340	195	205	
-	-	2F	SMD	B9 B10 B11	-5063	Sn	180mg	1	4,000	Tape&Reel,Diameter 330 φ		4,000	48,000	8.6	395	245	395	
-	-	2F	SMD	B9 B10 B11	-5073	Sn	180mg	1	60	Magazine		60	18,000	5.2	545	145	110	
-	-	2F	SMD	B9 B10 B11	-5063	Sn	180mg	1	750	Tape&Reel,Diameter 180 φ		3,000	15,000	4.2	340	195	205	
-	-	2F	SMD	B9 B10 B11	-5073	Sn	180mg	1	3,000	Tape&Reel,Diameter 330 φ		3,000	36,000	9.2	395	245	395	
-	-	2F	SMD	B9 B10 B11	-5073	Sn	180mg	1	1,000	Tape&Reel,Diameter 180 φ		1,000	20,000	3.6	340	195	205	
TO-269AA	-	1Z	SMD	C2	-7102	Sn-Bi	130mg	1	100	Magazine		100	15,000	3.2	545	145	110	
-	-	1Z	SMD	C2	-7062	Sn-Bi	130mg	1	S1ZA	750	Tape&Reel,Diameter 180 φ	3,000	15,000	4.0	340	195	205	
-	-	1Z	SMD	C2	-7062	Sn-Bi	130mg	1	S1ZB	750	Tape&Reel,Diameter 180 φ	3,000	15,000	4.0	405	210	220	
-	-	1Z	SMD	C2	-7072	Sn-Bi	130mg	1	Standard	3,000	Tape&Reel,Diameter 330 φ	3,000	15,000	4.6	340	340	120	
-	-	1N	SMD	C4	-7102	Sn-Bi	290mg	1	S1ZB	100	Magazine	100	10,000	2.1	545	145	110	
-	-	1N	SMD	C4	-7062	Sn-Bi	290mg	1	70	Magazine		70	5,600	4.1	545	145	100	
-	-	1N	SMD	C4	-7101	Sn-Bi	290mg	1	1,000	Tape&Reel,Diameter 250 φ		1,000	10,000	5.5	275	285	295	
-	-	1NA	SMD	C6	-7102	Sn-Bi	290mg	1	70	Magazine		70	5,600	4.1	545	145	100	
-	-	1NA	SMD	C6	-7062	Sn-Bi	290mg	1	Standard	1,000	Tape&Reel,Diameter 250 φ	1,000	10,000	5.5	275	285	295	
-	-	1NA	SMD	C6	-7101	Sn-Bi	290mg	1	70	Magazine		70	5,600	4.1	545	145	100	
-	-	1W	SMD	C8	-7102	Sn-Bi	500mg	1	50	Magazine		50	4,000	4.4	545	145	110	
-	-	1W	SMD	C8	-7062	Sn-Bi	500mg	1	1,000	Tape&Reel,Diameter 330 φ		3,000	6,000	5.5	395	245	395	
-	-	1W	SMD	C8	-7072	Sn-Bi	500mg	1	2,000	Tape&Reel,Diameter 380 φ		2,000	10,000	7.8	395	245	395	
-	-	1W	THD	C9	-7101	Sn-Bi	500mg	-	50	Magazine		50	4,000	4.4	545	145	110	
-	-	D3K	THD	D1	-7000	Sn-Bi	1.5g	-	500	Bulk		500	2,500	4.0	210	188	200	
-	-	2S	THD	D2	-7000	Sn-Bi	2.1g	-	100	Bulk		100	6,000	14.4	410	380	170	
-	-	3S	THD	D3	-7000	Sn-Bi	3.9-4.5g	-	50	Bulk		250	2,000	9.5	310	285	196	
-	-	5S	THD	D4	-7000	Sn-Bi	6.3-7.5g	-	50	Bulk		250	2,000	14.5	330	330	215	
-	-	JB	THD	D5	-7000	Sn-Bi	2.7g	-	250	Bulk		250	2,000	7.4	287	301	169	
-	-	JA	THD	D6	-7000	Sn-Bi	4.5g	-	250	Bulk		250	2,000	9.0	327	329	185	
-	-	TSB	THD (4pin)	D7	-7000	Sn-Bi	20g	-	100	Bulk		100	400	9.8	351	269	164	
-	-	TSB	THD (5pin)	D8	-7000	Sn-Bi	20g	-	100	Bulk		100	400	9.8	351	269	164	
-	-	JC	THD (4pin)	D7	-7500	Sn-Bi	20g	-	40	Tray		40	200	5.6	503	356	135	
-	-	JC	THD (5pin)	D8	-7500	Sn-Bi	20g	-	40	Tray		40	200	5.6	503	356	135	
-	-	JF	THD	D9	-7500	Sn-Bi	25g	-	40	Tray		40	200	5.6	503	356	135	
-	-	JH	THD	D10	-7501	Sn-Bi	31g	-	40	Tray		40	200	5.6	503	356	135	
-	-	D6K	THD	D11	-7000	Sn-Bi	4g	-	500	Bulk		500	2,000	8.0	260	220	222	
-	-	MCP	SMD	E1	-4062	Ni	1.9g	1	300	Tape&Reel,Diameter 255 φ		300	1,500	5.0	280	275	190	
-	-	MCP	SMD	E1	-4072	Ni	1.9g	1	Standard	600	Tape&Reel,Diameter 330 φ	600	1,800	5.5	335	345	110	

Package			Fig.	Spec Code	Terminal Plating	Weight (aprx.)	MSL	Remarks	Quantity	Inner Box			Standard Packing			Packing Box (mm)		
JEDEC Package Code	JEITA Code	House Name								Method	Quantity (Pcs./Box)	Pcs./Box	Weight (kg)	L	W	H		
-	-	D30VC	THD	E2	-4000	Ag	12g	-	100	Tray		100	500	7.0	375	285	160	
-	-	S2VB	THD	E3	-5000	Sn-Ag-Cu	3.0g	-	100	Tray		100	1,000	3.6	265	255	170	
-	-	S4VB	THD	E4	-5000	Sn-Ag-Cu	5.2g	-	100	Tray		100	1,000	5.9	315	285	220	
-	-	S5VB	THD	E5	-5000	Sn-Ag-Cu	9.1g	-	100	Tray		100	1,000	10.4	415	285	300	
-	-	S10VB	THD	E6	-5000	Sn-Ag-Cu	8.0g	-	100	Tray		100	1,000	9.3	375	285	270	
-	-	S15VB	THD	E7	-4000	Ag	16g	-	100	Tray		100	500	9.0	415	285	180	
-	-	S25VB	THD	E8	-4000	Ag	21g	-	60	Bulk		60	300	7.0	335	205	165	
-	-	S50VB	THD	E9	-4000	Ag	28g	-	50	Tray		50	200	6.2	335	205	165	
-	-	S3WB	THD	E10	-5000	Sn-Ag-Cu	5.1g	-	100	Tray		100	1,000	6.1	315	285	220	
-	-	S10WB	THD	E11	-5000	Sn-Ag-Cu	9.0g	-	100	Tray		100	1,000	9.3	375	285	270	
-	-	S15WB	THD	E12	-5000	Sn-Ag-Cu	16g	-	100	Tray		100	1,000	15.1	415	285	300	
-	-	S20WB	THD	E13	-5000	Sn-Ag-Cu	20g	-	100	Tray		100	700	15.0	415	285	300	
-	-	SVTA	THD	E14	-5000	Sn-Ag-Cu	30g	-	50	Tray		50	250	8.7	460	295	240	
-	-	SVT	THD	E15	-4000	Ag	31g	-	45	Bulk		200	200	13.6	335	205	165	
-	-	Module	-	F1 F2 F3	-4000	Ni	42-66g	-	25	Tray		100	200	13.4	480	330	210	
-	-	MG001	THD	F4	-7101	Sn-Bi	10g	-	15	Magazine		15	450	7.1	623	232	144	
-	-	MG031	THD	F5	-7													

NOTES

How to Order

1. Indication of Spec. Code when ordering

Please specify the Spec. Code when ordering semiconductors.
For the Spec. Code, Please refer to as follows and "PACKING SPECIFICATION".

Example Ordering THD type of S1ZB60
S1ZB60-7101

2. Spec Code

The code specifies each packing form, lead forming and terminal plate material.

Please refer to "PACKING SPECIFICATION".

Example 5 0 0 0

- Terminal forming
 - 0 : Straight terminal
 - 1 to 9 : Each number shows type of form
- Packing form
 - 0 : Standard
 - In case of surface mounting devices
 - 5, 6 : Small reel
 - 7 : Large reel
 - In case of axial device
 - 6 : Lead length 52mm (T52)
 - 7 : Lead length 26mm (T26)
- Minimum packing unit
 - 0 : Bulk, tray or taping
 - 1 : Magazine
 - 5 : Tray
 - 6 : Packed (FTO-220 Package)
- Terminal plate material
 - 3 : Ni/Pd/Au, Sn-Ag
 - 4 : Ni, Ag
 - 5 : Sn-Ag-Cu, Sn, Ag, Sn-Cu
 - 6 : Sn
 - 7 : Sn-Bi

Outline of Packing Form

1. Minimum packing unit

- Bulk : The form in which parts are inserted into plastic bags or cardboard boxes.
- Tray : The form in which parts are inserted in to containers made of resin.



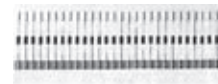
- Magazine : The form in which parts are inserted into resin cartridges designated for automatic inserters.



- Taping
 - Reel (Surface mounting devices)

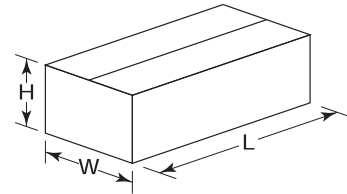


- Box (Axial devices)



2. Packing Box Dimensions

See the following pages for the dimensions of each cardboard box.



About AEC-Q101 & Automotive Grade

1. AEC-Q101

These products are based on AEC-Q101.

2. Automotive Grade

These products are produced on a designated production line qualified for internal automotive standards.

Sales Offices

U.S.A.

Shindengen America, Inc.

1540E, Dundee Road Suite 350 Palatine IL.60074. U.S.A.
Phone:+1-847-444-1363 FAX:+1-847-444-0654

Europe

Shindengen UK Ltd.

Head Office

6th Floor, 2 Kingdom Street. London, W2 6BD, U.K.
Phone:+44-20-8187-4997 FAX:+44-20-3725-6855

German Branch

Prinzenallee 1, 40549 Dusseldorf, Germany
Phone:+49-211-5206590 FAX:+49-211-4986499

Asia

Shindengen Singapore Pte Ltd.

4 Shenton Way #09-05/06 SGX Centre Singapore 068807
Phone:+65-6445-0082 FAX:+65-6223-4372

Shindengen (H.K.) Co., Ltd.

Head Office

Suite 2006B, 20/F., Exchange Tower, 33 Wang Chiu Road,
Kowloon Bay, HK
Phone:+852-2317-1884 FAX:+852-2314-8561

Taiwan Representative Office

3F-1., No.126, Songjiang Road, Zhongshan District,
Taipei City 10457, Taiwan, R.O.C.
Phone:+886-2-2100-1218 FAX:+886-2-2100-2018

Shindengen (Shanghai) Electric Co., Ltd.

Room1506, Sheng GaoInt'l Building, 137 Xian Xia Road,
Chang Ning, Shanghai, China
Phone:+86-21-6270-8000 FAX:+86-21-6270-0419

Shindengen Electric Mfg. Co., Ltd.

Seoul Office

B701-4. 230, Simin-daero, Dongan-gu, Anyang-si,
Gyeonggi-do, 14067 Korea
Phone:+82-31-385-1431 FAX:+82-31-385-1430

Japan

Shindengen Electric MFG. Co., Ltd.

Head Office

New-Ohtemachi Bldg., 2-2-1, Ohtemachi, Chiyoda-ku,
Tokyo 100-0004, Japan
Phone:+81-3-3279-4431 FAX:+81-3-3279-6478

Asaka Office

3-14-1, Saiwai-cho, Asaka City,
Saitama 351-8503, Japan
Phone:+81-48-483-5311 FAX:+81-48-483-4117

Osaka Branch Office

Minami Senba Heart Bldg., 2-3-2, Minami-Senba,
Chuo-ku, Osaka City, Osaka 542-0081, Japan
Phone:+81-6-6264-7770 FAX:+81-6-6260-1222

Nagoya Branch Office

Nagoya Daiichi Bldg., 1-19-24, Nishiki, Naka-ku,
Nagoya City, Aichi 460-0003, Japan
Phone:+81-52-221-1361 FAX:+81-52-201-4780

Hamamatsu Sales Office

Hamamatsu Daiichi Seimei Nittsu Bldg., 110-5, Itaya-cho,
Naka-ku, Hamamatsu City, Shizuoka 430-0928, Japan
Phone:+81-53-450-3800 FAX:+81-53-450-3801

Utsunomiya Sales Office

Flora Bldg., 1-9-15 Higashi Syukugou Utsunomiya City,
Tochigi 321-0953, Japan
Phone:+81-28-637-3615 FAX:+81-28-637-3115

HP Address

Japanese : <https://www.shindengen.co.jp/>
English : <https://www.shindengen.com/>
Chinese : <https://cn.shindengen.co.jp/>
Korean : <https://kr.shindengen.co.jp/>

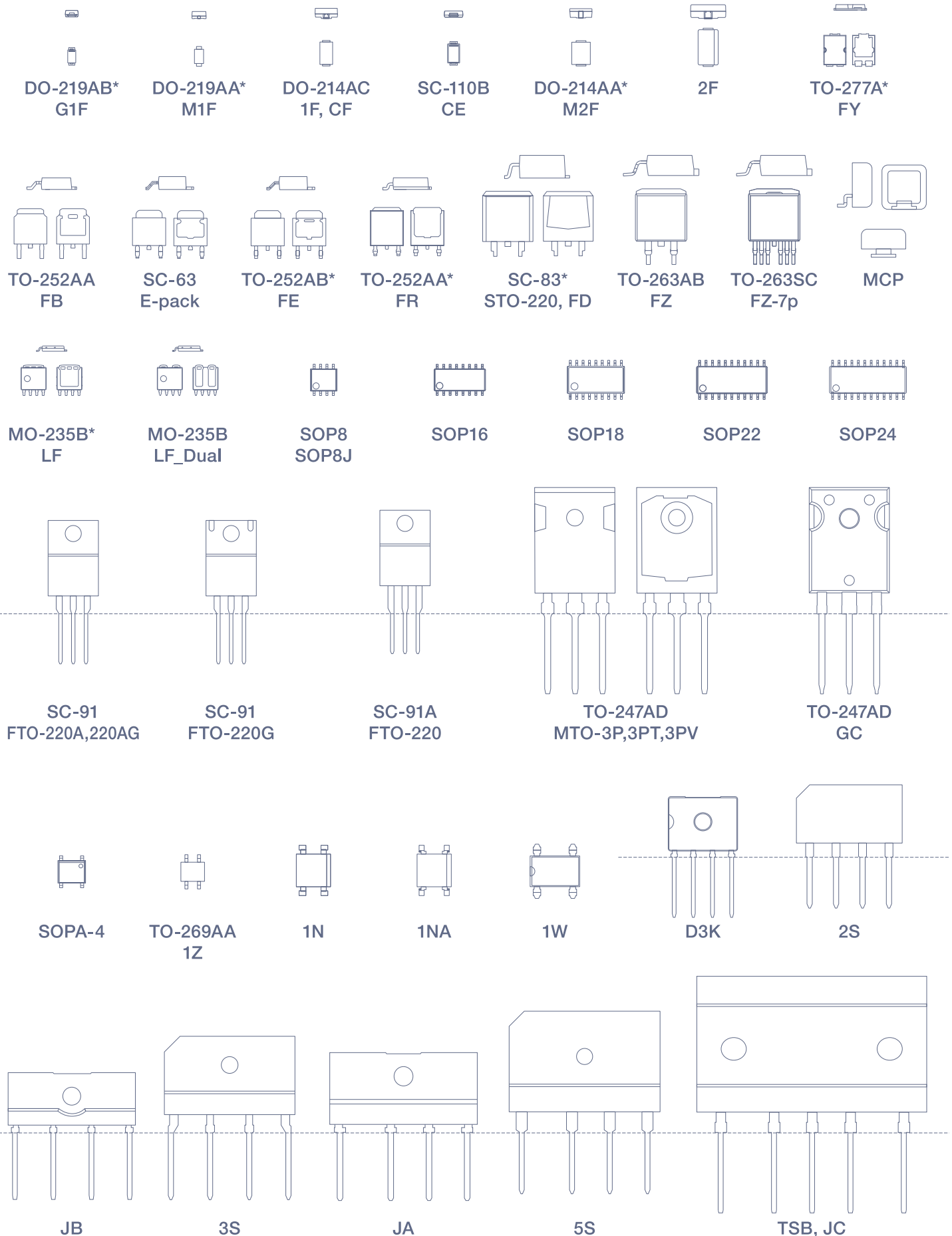
- All specifications are subject to change without notice.
- Please consult us for the latest specifications before you order.
- Please use this products after reading manual well.

• Printed December 2023

This catalog includes the products which might be subject to the foreign exchange and foreign trade laws.

Package Outline

* = Similar Package



Shindengen Electric Manufacturing Co., Ltd.

www.shindengen.com



CAT.NO.F072-17

2312-1800(1)