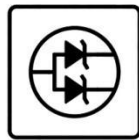


MSKSEMI

SEMICONDUCTOR



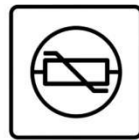
ESD



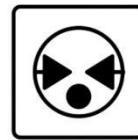
TVS



TSS



MOV



GDT



PLED

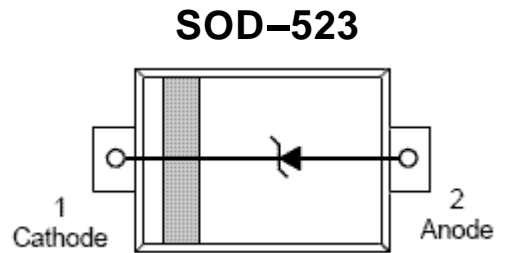
Product data sheet

Applications

- Cellular phones
- Portable devices
- Digital cameras
- Power supplies

Features

- Small Body Outline Dimensions
- Low Body Height
- Stand-off Voltage: 2.5 V – 12 V
- Peak Power up to 200 Watts @ 8 x 20_s Pulse
- Low Leakage
- Response Time is Typically < 1 ns
- ESD Rating of Class 3 (> 16 kV) per Human Body Model
- IEC61000-4-2 Level 4 ESD Protection
- IEC61000-4-4 Level 4 EFT Protection
- We declare that the material of product compliance with RoHS requirements.
- S-Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable.

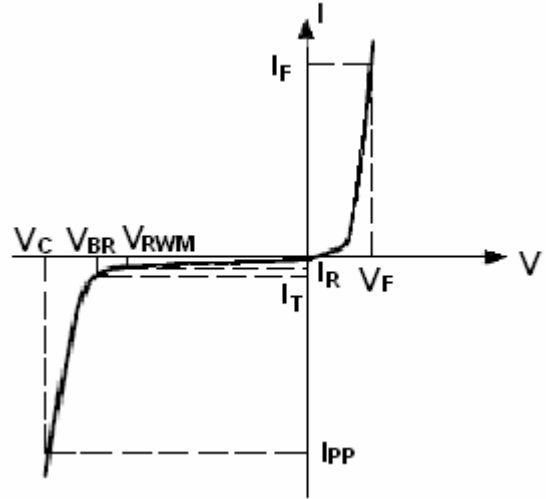


Absolute Ratings (T_{amb}=25°C)

Symbol	Parameter	Value	Units
P _{PP}	Peak Pulse Power (t _p = 8/20μs)	200	W
T _L	Maximum lead temperature for soldering during 10s	260	°C
T _{stg}	Storage Temperature Range	-55 to +150	°C
T _{op}	Operating Temperature Range	-40 to +125	°C
T _j	Maximum junction temperature	150	°C
	IEC61000-4-2 (ESD) air discharge	± 15	KV
	IEC61000-4-4 (EFT) contact discharge	± 8	KV
	IEC61000-4-4 (EFT)	40	A
	ESD Voltage Per Human Body Model	16	KV

Electrical Parameter

Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Maximum Reverse Leakage Current @ V_{RWM}
I_T	Test Current
V_{BR}	Breakdown Voltage @ I_T
I_F	Forward Current
V_F	Forward Voltage @ I_F

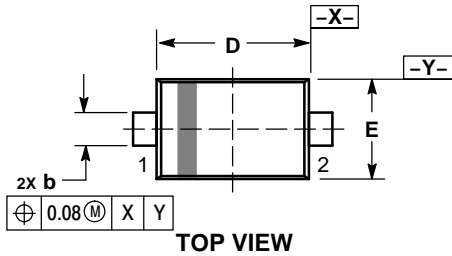


Electrical Characteristics Ratings at 25°C ambient temperature unless otherwise specified. $V_F = 0.9V$ at $I_F = 10mA$

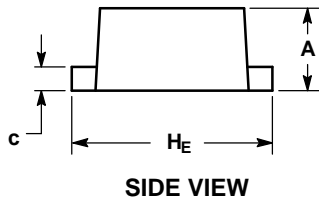
Device	Device Marking	V_{RWM} (V)	$I_R(\mu A)$ @ V_{RWM}	V_{BR} (V) @ I_T (Note 1)	I_T	V_C (V) @ $I_{PP}=5 A^*$	V_C (V) @ Max I_{PP}^*	I_{PP} (A)*	P_{PK} (W)*	C (pF)
		Max	Max	Min	mA	Typ	Max	Max	Max	Typ
ESD5Z2V5-MS	ZD	2.5	6.0	4.0	1.0	6.5	10.9	11.0	120	145
ESD5Z3V3-MS	ZE	3.3	1.0	5.0	1.0	8.4	14.1	11.2	158	105
ESD5Z5V0-MS	ZF	5.0	1.0	6.2	1.0	11.6	18.6	9.4	174	80
ESD5Z6V0-MS	ZG	6.0	1.0	6.8	1.0	12.4	20.5	8.8	181	70
ESD5Z7V0-MS	ZH	7.0	1.0	7.5	1.0	13.5	22.7	8.8	200	65
ESD5Z12V-MS	ZM	12	1.0	13.5	1.0	17	25	9.6	240	55

*Surge current waveform per Figure 1.

- V_{BR} is measured with a pulse test current I_T at an ambient temperature of 25°C.



SOD-523

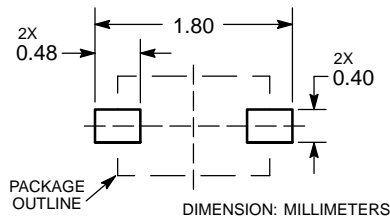


NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS.

DIM	MILLIMETERS		
	MIN	NOM	MAX
A	0.50	0.60	0.70
b	0.25	0.30	0.35
c	0.07	0.14	0.20
D	1.10	1.20	1.30
E	0.70	0.80	0.90
HE	1.50	1.60	1.70
L	0.30 REF		
L2	0.15	0.20	0.25

**RECOMMENDED
SOLDERING FOOTPRINT***



([[LU]RU

(U HUK HS4 : 2 : , 4 0 : LT BVUK J[VYVWK] J[Z KLZYP LK VYJVU]HRLK QLYRU KV UM[CH] L ZVLJRH]RUZ [CH] JHU CHUK\$ HWVSH]RUZ [CH] YLX] RL L_YLT LS ONO \$]LS VMYLSPI RP` Z JO HZ \$M Z VVWY Z ZLT Z HPUYH]Z JVU]WSZ ZLT Z VYV[CLYHWVSH]RUZ ^ OVZL MFS YL JHU I L YLHVUH S L_VLJ[LK [V YLZ \$ RU ZL]PA Z WO ZBHSUK VY T H]LPSKHT HNL * VUZA \$ ^ PO ` V Y 4 : 2 : , 4 0 : LT BVUK J[VY YLWVZLU]H]PL ULHYZ ` V I LMWY \ ZRN HU 4 : 2 : , 4 0 : LT BVUK J[VYVWK] J[Z KLZYP LK VYJVU]HRLK QLYRU RZ JOHWVSH]RUZ

4 : 2 : , 4 0 : LT BVUK J[VYHZZ T LZ UV YLZVWUZP RP` MYLX] RV LU] MFS YLZ [CH] YLZ \$ MVT \ ZRN VWK] J[Z H]]HS LZ [CH] L_JLLK L] LUT VT LU]HNS Y]LK]]HS LZ Z JOHZ T H_F \ T Y]RNZ VLY]RN JVUK]PVU YHUNLZ VY V[CLYWHHT L[L]Z \$ZLK RU VWK] J[Z ZVLJRH]RUZVMHU HUKHS4 : 2 : , 4 0 : LT BVUK J[VYVWK] J[Z KLZYP LK VYJVU]HRLK QLYRU

: VLJRH]RUZ VMHU HUK HS4 : 2 : , 4 0 : LT BVUK J[VYVWK] J[Z KLZYP LK VYJVU]HRLK QLYRU Z]PV \$]L [CL VLYWYT HUJL JOHFU]LYZ]BZ HUK MW]RUZ VM[CL KLZYP LK VWK] J[Z RU [CL RKLWLUKLU] Z]HL HUK HYL UM] M HFU]LLZ VM[CL VLYWYT HUJL JOHFU]LYZ]BZ HUK MW]RUZ VM[CL KLZYP LK VWK] J[Z HZ T V U]LK RU [CL JA Z]VT LYZ VWK] J[Z VYLX] RV LU] ; V] LYRM Z T V]VT Z HUK Z]HLZ [CH] JHU] I L L]]SH]LK RU HU RKLWLUKLU] KL] BL [CL JA Z]VT LYZOM \$ HS H Z L]]SH]L HUK [LZ] KL] BLZ T V U]LK RU [CL JA Z]VT LYZVWK] J[Z VYLX] RV LU]

4 : 2 : , 4 0 : LT BVUK J[VY Z]PLZ [V Z VWS ONO X] HSP` ONO YLSP] RP` VWK] J[Z / V L] LY HU HUK HS ZLT BVUK J[VYVWK] J[Z MFS^ POZVT LVW] H RP` Q EZ WZZP \$[CH] [CLZL VV] H]SZ]B MFS YLZ JV \$ N]PL YZL [V HJJRKL]Z VYL] LU]Z [CH] JV \$ LUKHUNLYO T HU \$]LZ [CH] JV \$ N]PL YZL [V ZT VRL VYML VY[CH] JV \$ JH ZL KHT HNL [V V[CLYVWVLY]` > CLU KLZ]RURN LX] RV LU] HKWY ZHM]` T LHA YLZ ZV [CH] [CLZL RPKZ VMHJJRKL]Z VYL] LU]Z JHU] VJ] Y : \ JO T LHA YLZ RUSKL I \ [HYL UM] \$] PLK [V VV]LJ]P L JPA]]Z HUKLYWVW] LU]RU JPA]]Z]WYZHM]KLZ]RU YLX] UKHU] KLZ]RU HUK Z]Y J] YSKLZ]RU

U[CL L] LU] [CH] HU VYHS4 : 2 : , 4 0 : LT BVUK J[VYVWK] J[Z RUSKR]N [LJOUR]HSHKH]H ZL]BLZ KLZYP LK VYJVU]HRLK QLYRU HYL JVU]Y\$K \ UKLYHU VMHWVSH \$ S]HSL_VWY JVU]V\$S^ Z HUK YLM \$]RUZ Z JO VWK] J[Z T \ Z] UM] I L L_VWY]LK ^ POA] [VI]H]RURN [CL L_VWY] \$]LUZL MVT [CLH]O]V]P]Z JVWLYLK RU HJJVYKHUJL ^ PO[CL H V]L \$^

5 V WHY VM[OZ W I \$]H]RU T H I L YLWV]K JLK VY[YLUZT]PLK RU HU MYT VYI ` HU T LHUZ LSJ]XUR VY T LJOUR]HS RUSKR]N VOV[VJVV]RN HUK YLJVKR]N VYHU RMYT H]RU Z]VFNL VYLY]Y] HSZ ZLT VYV[CLY]BL ^ POA] [CL W]RY^ Y]LUWLYT]Z]RU VM# : 2 : , 4 0 : LT BVUK J[VY

UMYT H]RU RUSKR]N JPA]]P K]PNHT Z HUK JPA]]P WHHT L[L]Z QLYRU EZ MY L_HT V\$ VUS "]P EZ UM] M HFU]LLK MY] VST L VWK] J]RU 4 : 2 : , 4 0 : LT BVUK J[VY I L\$] LZ RMYT H]RU QLYRU EZ HJ] Y]L HUK YLSP] \$ I \ [UV M HFU]LLZ HYL T HCL VYF V\$K YLNH]KR]N]Z \ ZL VYHU R]R]NLT LU]ZVM]P]L\$]J] HSWVWLY] Y]NQZ VYV[CLY]Y]NQZVM]OPK WHY]RZ

(U HUK HS RMYT H]RU KLZYP LK VY JVU]HRLK QLYRU HYL Z I QJ] [V JOHUNL ^ POA] [UM]BL K]L [V VWK] J] [LJOUR]S^N^ F VV] LT LU] L]J > CLU KLZ]RURN LX] RV LU] YLMYV [CL +L\$]LY : VLJRH]RU MY[CL 4 : 2 : , 4 0 : LT BVUK J[VYVWK] J][CH] ` V]R]LUK [V \ ZL