

# MSKSEMI

SEMICONDUCTOR



ESD



TVS



TSS



MOV



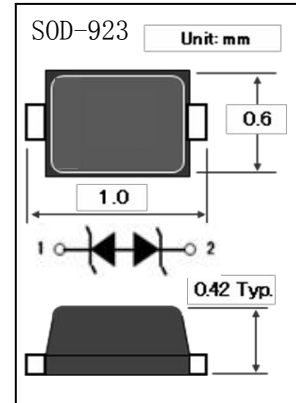
GDT



PLED

Product data sheet

- ◇ Bi-Directional Transient Voltage Suppressor
- ◇ Low capacitance and Low Leakage
- ◇ ESD Protection, IEC61000-4-2 Level 4
- ◇ SOD923F Thin SMD
- ◇ RoHS compliant
- ◇ UL-94 V-0 / Green EMC
- ◇ Matte Tin Lead finish (Pb-Free)



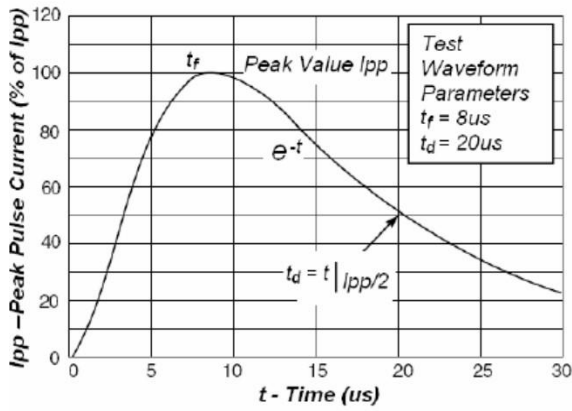
**Absolute Maximum Ratings** (Ta = 25 °C)

Symbol	Parameter	Value	Units
$I_{PP *1}$	Maximum Reverse Peak Pulse Current	5.0	A
$V_{ESD-Air}$	ESD Voltage IEC61000-4-2 Air	± 15	kV
$V_{ESD-contact}$	ESD Voltage IEC61000-4-2 Contact	± 8	kV
$T_J$	Junction Temperature	150	°C
$T_{STG}$	Storage Temperature	-55 to +150	°C
$P_D$	Power Dissipation	150	mW

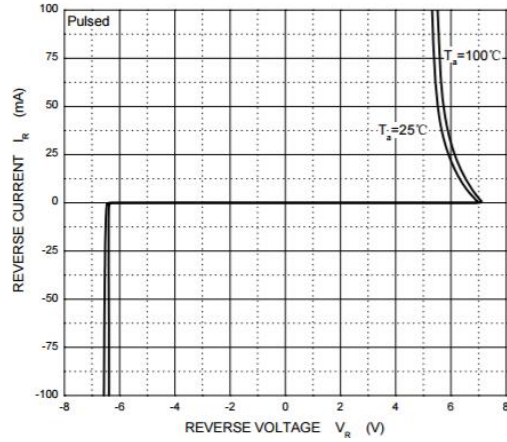
\*1 tp = 8/20µs

**Electrical Characteristics** (Ta = 25 °C)

Symbol	Parameter	Conditions	Min	Typ	Max	Units
$V_{RWM}$	Reverse Working Peak Voltage	-			5.0	V
$V_{BR}$	Reverse Breakdown Voltage Pin 1 to 2	$I_T = 1mA$	5.6		8.2	V
$I_R$	Reverse Current	$V_{RWM} = \pm 5V$			1.0	µ A
$C_D$	Diode Capacitance	$V_R = 0V, f = 1MHz$		13		pF



**Pulse Waveform**



**Reverse Characteristics**

**Ordering Information**

Device	Package	Shipping	Tape wide	Emboss pitch	Tape specification	Notes
BTR9S23A10-MS	SOD923	Tape & Reel 8000pcs /7" Reel	8 mm	2 mm	Conductive	

**Package Dimensions**

**SOD923 \* Package Outline**

**Land Pattern Recommendation**

**Dimensions**

Unit	A	B	C	D	E	F	G
Max.	0.80	0.20	0.15	0.30	1.10	0.45	0.65
Min.	0.70	0.05	0.05	0.15	0.80	0.38	0.55

**Note:**

1. Halogen free, EMC
2. Pb free solder
3. Lead thickness includes solder plating
4. Lead frame: Cu
5. Other Tolerance:  $\pm 0.05$
6. Dimensions are exclusive of Burrs, Mold Flash and Tie Bar extrusions
7. Unit: mm

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( 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\$ HWWRH[RUZ [CH] YLX RL L\_YLT LS ONO \$]LS VMYLSH SP Z JO HZ SM Z VVWY Z ZLT Z HPUYHYZ JVUWSZ ZLT Z VYV[CLYHWWRH[RUZ ^ OVZL MFS YL JHU I L YLHVUH S L\_VLJ[LK [V YLZ \$ RU ZLPA Z WO ZBHSUK VY T HLYPSKHT HNL \* VUZA \$ ^ PO ` V Y 4 : 2 : , 4 0 : LT BVUK J[VY YLWZLUH]PL ULHYZ ` V I LMWY \ ZRN HU 4 : 2 : , 4 0 : LT BVUK J[VYVWK] J[Z KLZYP LK VYJVU]HRLK QLYRU RZ JOHWWRH[RUZ

4 : 2 : , 4 0 : LT BVUK J[VYHZZ T LZ UV YLZVWUZP SP MYLX RV LU MFS YLZ [CH] YLZ \$ MVT \ ZRN VWK] J[Z H ]HS LZ [CH] L\_JLLK L] LUT VT LU[HNS YH[LK] HS LZ Z JOHZ T\_H\_F \ T YHRNZ WLYH[RN JVUKPRU YHUNLZ VY V[CLYWHHT L[LZ SZLK 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 ZPV \$[L [Q VLYWYT HUJL JOHFU[LYZ]BZ HUK MW[RUZ VM[Q KLZYP LK VWK] J[Z RU [Q RKLWLUKU] ZH[L HUK HYL UM M HYU]LLZ VM[Q VLYWYT HUJL JOHFU[LYZ]BZ HUK MW[RUZ VM[Q KLZYP LK VWK] J[Z HZ T V U[LK RU [Q JA ZVT LYZ VWK] J[Z VYLX RV LU ; V ]LYM Z T VVT Z HUK ZH[LZ [CH] JHUM I L L] HS H[LK RU HU RKLWLUKU KL] BL [Q JA ZVT LYZOM \$ HS H Z L] HS H[L HUK [LZ KL] BLZ T V U[LK RU [Q JA ZVT LYZVWK] J[Z VYLX RV LU

4 : 2 : , 4 0 : LT BVUK J[VY ZYPLZ [V Z VWS ONO X]HSP ONO YLSH SP VWK] J[Z / V L]LY HU HUK HS ZLT BVUK J[VYVWK] J[Z MFS^ POZVT LVWI H SP Q EZ WZZP \$[CH] [QZL VVI H SZ]B MFS YLZ JV \$ NP L YZL [V HJJRKLJZ VYL] LUJZ [CH] JV \$ LUKHUNLYO T HU \$ LZ [CH] JV \$ NP L YZL [V ZT VRL VYML VY[CH] JV \$ JH ZL KHT HNL [V V[CLYVWVLY` > OLU KLZRNURN LX RV LU HKWY ZHML` T LHA YLZ ZV [CH] [QZL RPKZ VMHJJRKLJZ VYL] LUJZ JHUM VJAY : \ JO T LHA YLZ RUSKL I \ [ HYL UM SP PLK [V VV[LJ]PL JPA] PZ HUKLYWVWL] LU/RU JPA] PZVYZHMLKZRU YLX UKHU KLZRU HUK ZY J\ YSKLZRU

U[Q L] LU [CH] HU VYHS4 : 2 : , 4 0 : LT BVUK J[VYVWK] J[Z RUSKRN [LJOURHSHKH]H ZL]BLZ KLZYP LK VY JVU]HRLK QLYRU HYL JVU]Y\$K \ UKLYHU VMHWWRH \$ SJHSL\_WWY JVU]V\$P^ Z HUK YLM \$[RUZ Z JO VWK] J[Z T \ Z UM I L L\_VWYLK ^ POA [ VI]HRUN [Q L\_WWY \$LUZL MVT [CLH]OVPRZ JVWLYLK RU HJJVKHJL ^ PO[Q H V]L \$^

5 V WHY VM[OZ WI \$H[RU TH I L YLWVK] JLK VY[YLUZT P]LK RU HU MYT VYI` HU T LHUZ LSJ[XUR VY T LJOURHS RUSKRN WOV[VJVV RN HUK YLJVKRN VYHU RMYT H[RU ZVYHNL VYLYP]HSZ ZLT VYV[CLY BL ^ POA [ [Q WRY^ YP]LUWLYT EZRU VM# : 2 : , 4 0 : LT BVUK J[VY

UMYT H[RU RUSKRN JPA] P KPNYH Z HUK JPA] P WHHT L[LZ QLYRU EZ MY L\_HT V\$ VUS " P EZ UM M HYU]LLK MY ]VSTL VWK] J[RU 4 : 2 : , 4 0 : LT BVUK J[VY I L\$] LZ RMYT H[RU QLYRU EZ HJY Y[L HUK YL\$H \$ I \ [ UV M HYU]LLZ HYL THKL VYF V\$K YLNHKRN PZ \ ZL VYHU RMPNLT LUZVMP]L\$J\ HSWWVLY` YRQZ VYV[CLYRQZVMOPK WHYRZ

( U HUK HS RMYT H[RU KLZYP LK VY JVU]HRLK QLYRU HYL Z I QJ [V JOHNL ^ POA [ UM]BL KIL [V VWK] J [LJOURN^ F VV] LT LU L]J > OLU KLZRNURN LX RV LU YLMYV [Q +L\$LY : VLJRH[RU MY[Q 4 : 2 : , 4 0 : LT BVUK J[VYVWK] J[CH] ` V R]LUK [V \ ZL