

5-Line TVS Array

 Lead(Pb)-Free

Features:

- * Monolithic Structure
- * Low Clamping Voltage
- * IEC Compatibility(EN6100-4)
61000-4-2(ESD): Air-15kV, Contact-8kV
- * MIL STD 883E-Method 3015-7: class 3
25kV HBM(Human Body Model)
- * Low Leakage Current
- * 5 Unidirectional Lines

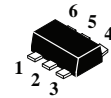
Main Applications:

- * Computer Notebooks
- * Communication Systems & Cellular Phones
- * Printers
- * Personal Digital Assistant(PDA)
- * Video Equipment

Mechanical Characteristics:

- * Molded JEDEC SOT-563 Package
- * Weight 3 milligrams

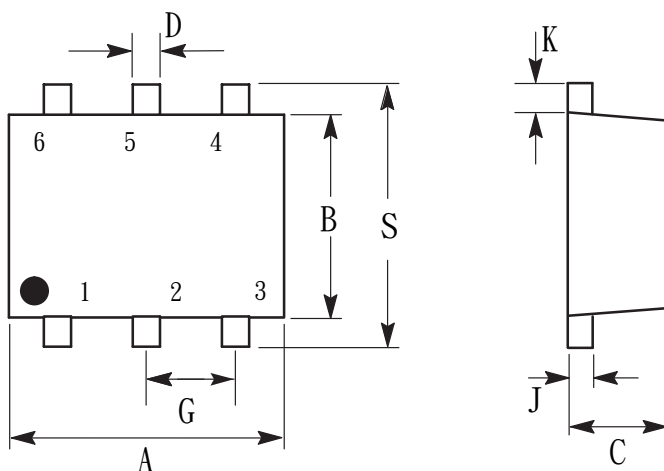
Power Dissipation
150m Watts
Reverse Working Voltage
6.1 VOLTS



SOT-563

SOT-563 Outline Dimensions

Unit:mm



SOT-563		
Dim	Min	Max
A	1.50	1.70
B	1.10	1.30
C	0.50	0.60
D	0.17	0.27
G	0.50 REF	
J	0.08	0.16
K	0.10	0.30
S	1.50	1.70

Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Units
Power Dissipation	P_{PP}	150	mW
IEC61000-4-2 Air(ESD) IEC61000-4-2 Contact(ESD)	ESD	15 8	kV
Junction to ambient	$R_{\theta JA}$	220	$^{\circ}\text{C}/\text{W}$
Operating Temperature	T_J	-55 to +125	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55 to +150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS

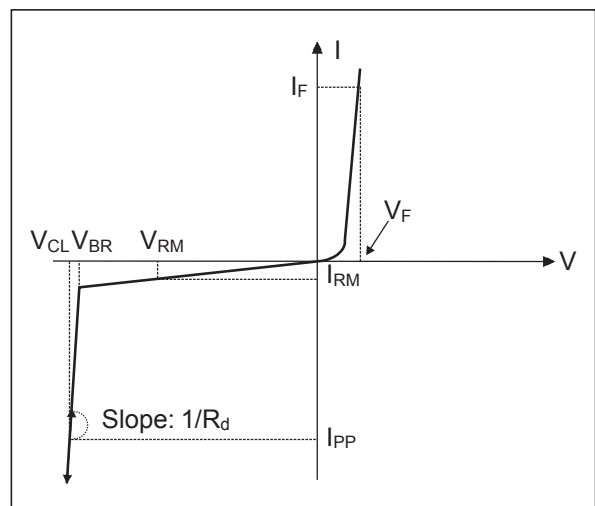
Parameter	Symbol	Min	Typ	Max	Unit
Breakdown Voltage $I_T=1\text{mA}$	V_{BR}	6.1	-	-	V
Reverse Leakage Current $V_{RWM}=5\text{V}$	I_R	-	-	1.0	μA
Dynamic Resistance	R_d	-	1.1	-	Ω
Capacitance $V_R=0\text{V}, f=1\text{MHz}$	C_J	-	7	-	pF

Device Marking

Item	Marking	Equivalent Circuit diagram
ESDA6V1-5P6	EC	

ELECTRICAL CHARACTERISTICS ($T_{amb} = 25^{\circ}\text{C}$)

Symbol	Parameter
V_{RM}	Stand-off voltage
V_{BR}	Breakdown voltage
V_{CL}	Clamping voltage
I_{RM}	Leakage current
I_{PP}	Peak pulse current
αT	Voltage temperature coefficient
V_F	Forward voltage drop
C	Capacitance per line
R_d	Dynamic resistance



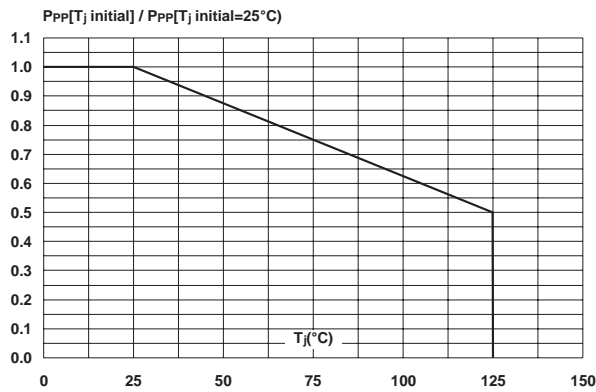


Fig. 1: Relative variation of peak pulse power versus initial junction temperature.

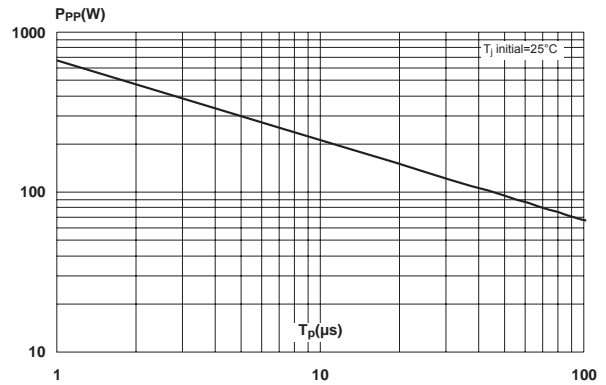


Fig. 2: Peak pulse power versus exponential pulse duration.

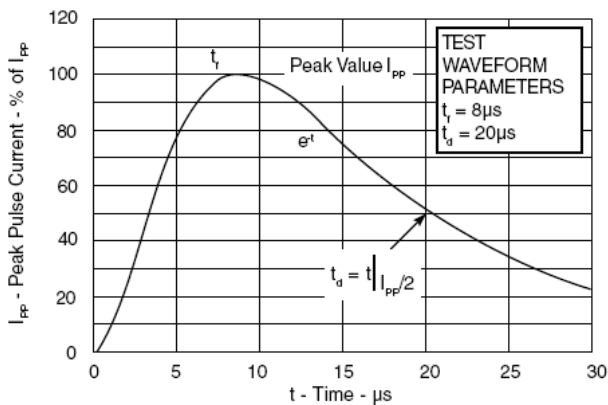


Fig. 3: Pulse Wave Form

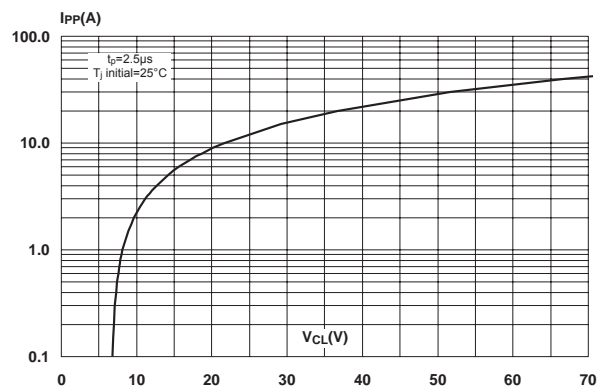


Fig. 4: Clamping voltage versus peak pulse current (typical values, rectangular waveform).

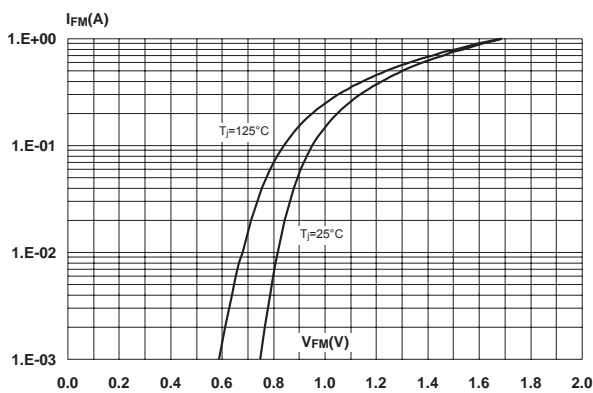


Fig. 5: Forward voltage drop versus peak forward current (typical values).

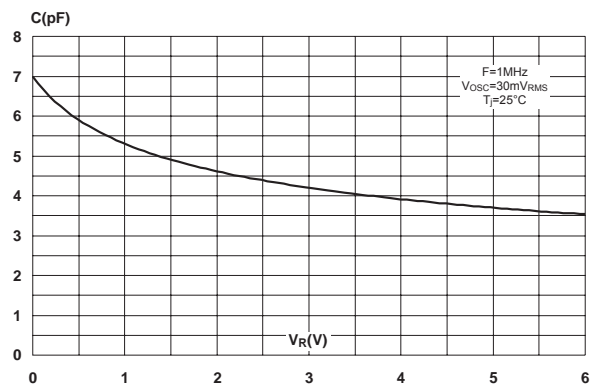


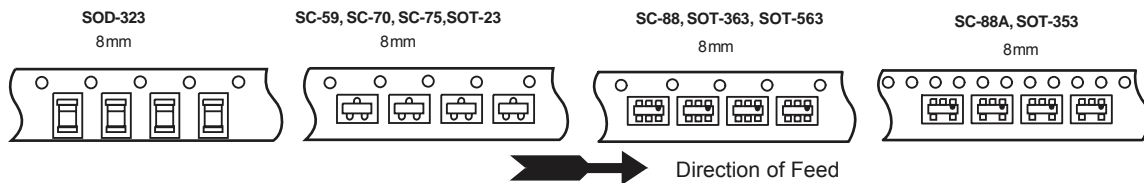
Fig. 6: Junction capacitance versus reverse voltage applied (typical values).

Tape & Reel and Packaging Specifications

Embossed Tape and Reel is used to facilitate automatic pick and place equipment feed requirements. The tape is used as the shipping container for various products and requires a minimum of handling. The antistatic/conductive tape provides a secure cavity for the product when sealed with the “peel-back” cover tape.

- Used for Automatic Pick and Place Feed Systems
- Minimizes Product Handling
- EIA 481, -1, -2
- SOT-23, SC-70/SOT-323, SC-89, SC-88/SOT-363, SC-88A/SOT-353, SOT-563
- SOD-323, SOD-523 in 8 mm Tape

Use the standard device title and add the required suffix as listed in the option table below (Table 1). Note that the individual reels have a finite number of devices depending on the type of product contained in the tape. Also note the minimum lot size is one full reel for each line item, and orders are required to be in increments of the single reel quantity.

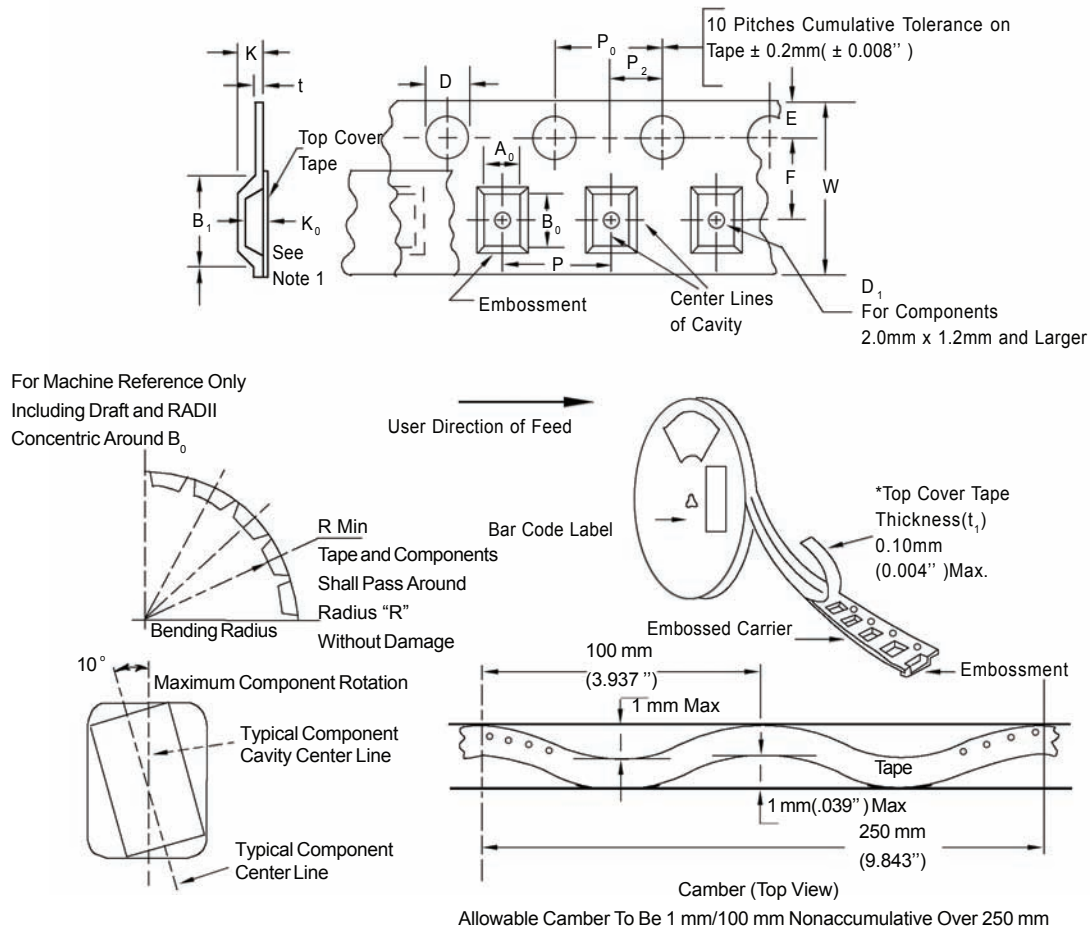


Typical Reel Orientations

Table 1. EMBOSSED TAPE AND REEL ORDERING INFORMATION

Package	Tape Width (mm)	Pitch mm	Reel Size mm(inch)	Devices Per Reel and Minimum Order Quantity	Device Suffix
SOT-23	8	4	178	(7)	3,000
SC-70/SOT-323	8	4	178	(7)	3,000
SC-89	8	4	178	(7)	3,000
SC-88/SOT-363	8	4	178	(7)	3,000
SOT-563	8	4	178	(7)	3,000
SC-88A/SOT-353	8	4	178	(7)	3,000
SOD-323	8	4	178	(7)	3,000
SOD-523	8	4	178	(7)	3,000

EMBOSSED TAPE AND REEL DATA FOR DISCRETES CARRIER TAPE SPECIFICATIONS



DIMENSIONS

Tape Size	B ₁ Max	D	D ₁	E	F	K	P ₀	P ₂	RMin	TMax	WMax
8mm	4.55mm (.179")	1.5+0.1mm - 0.0	1.0Min (.039")	1.75±0.1mm (.069±.004)	3.5 ± 0.05mm (.138±.002")	2.4mmMax (.094")	4.0 ± 0.1mm (.157 ± .004")	2.0 ± 0.1mm (.079±.002")	25mm (.98")	0.6mm (.024")	8.3mm (.327")
12mm	8.2mm (.323")	(.059+.004" - 0.0)	1.5mmMin (.060")		5.5 ± 0.05mm (.217 ± .002")	6.4mmMax (.252")			30mm (1.18")		12 ± .30mm (.470 ± .012")
16mm	12.1mm (.476")				7.5 ± 0.10mm (.295 ± .004")	7.9mmMax (.311")					16.3mm (.642")
24mm	20.1mm (.791")				11.5 ± 0.1mm (.453 ± .004")	11.9mmMax (.468")					24.3mm (.957")

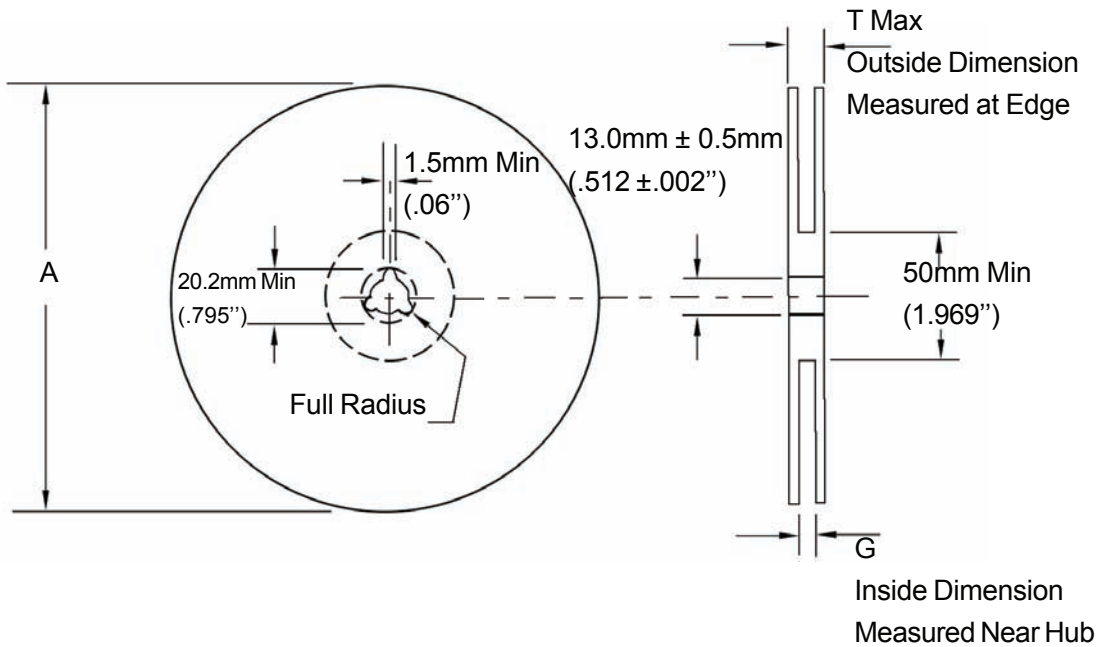
Metric dimensions govern - English are in parentheses for reference only.

NOTE 1: A₀, B₀, and K₀ are determined by component size. The clearance between the components and the cavity must be within .05 mm min. to .50 mm max.,

NOTE 2: the component cannot rotate more than 10° within the determined cavity.

NOTE 3: If B₁ exceeds 4.2 mm (.165") for 8 mm embossed tape, the tape may not feed through all tape feeders.

**EMBOSSED TAPE AND REEL DATA
FOR DISCRETES**



Size	A Max	G	T Max
8 mm	330mm (12.992")	8.4mm+1.5mm, -0.0 (.33"+.059", -0.00)	14.4mm (.56")
12mm	330mm (12.992")	12.4mm+2.0mm, -0.0 (.49 "+ .079", -0.00)	18.4mm (.72")
16mm	360mm (14.173")	16.4mm+2.0mm, -0.0 (.646"+.078", -0.00)	22.4mm (.882")
24 mm	360mm (14.173")	24.4mm+2.0mm, -0.0 (.961"+.070", -0.00)	30.4mm (1.197")

Reel Dimensions

Metric Dimensions Govern — English are in parentheses for reference only

Storage Conditions

Temperature: 5 to 40 Deg.C (20 to 30 Deg. C is preferred)
 Humidity: 30 to 80 RH (40 to 60 is preferred)
 Recommended Period: One year after manufacturing
 (This recommended period is for the soldering condition only. The characteristics and reliabilities of the products are not restricted to this limitation)

Shipment Specification

