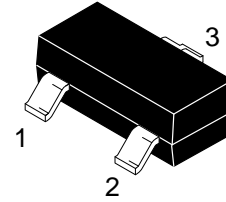




## ESD48V

### Description

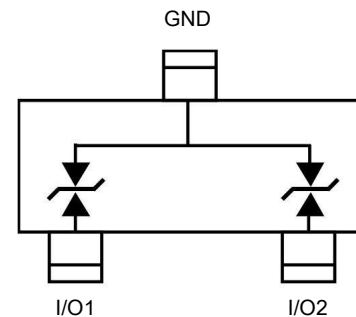
- ◆ This low-power TVS (Transient Voltage Suppressor) is mainly used for signal and power supply to protect the back-stage circuit from ESD(Electrostatic Discharge) and EFT(Electrical Fast Transients) and improve the reliability of the product, because its extremely small package is suitable for various portable devices and mobile electronic devices.



**SOT-23 (Top View)**

### Features

- ◆ IEC61000-4-2(ESD): $\pm 20\text{KV}$  Max Air  
 $\pm 20\text{KV}$  Max Contact
- ◆ IEC61000-4-4(EFT): $40\text{A}(5/50\text{ns})$
- ◆ IEC61000-4-5(Surge): $4.0\text{A}(8/20\mu\text{s})$
- ◆ Line capacitance: $10\text{ pF}@1\text{MHz}$
- ◆ Very low reverse current: $I_{\text{R}} < 0.2\mu\text{A}$ (typical)
- ◆ Halogen free ,Lead free and RoHs



### Application

- ◆ Cellular phones
- ◆ Portable devices
- ◆ Digital cameras
- ◆ Player
- ◆ Smart home
- ◆ Robot

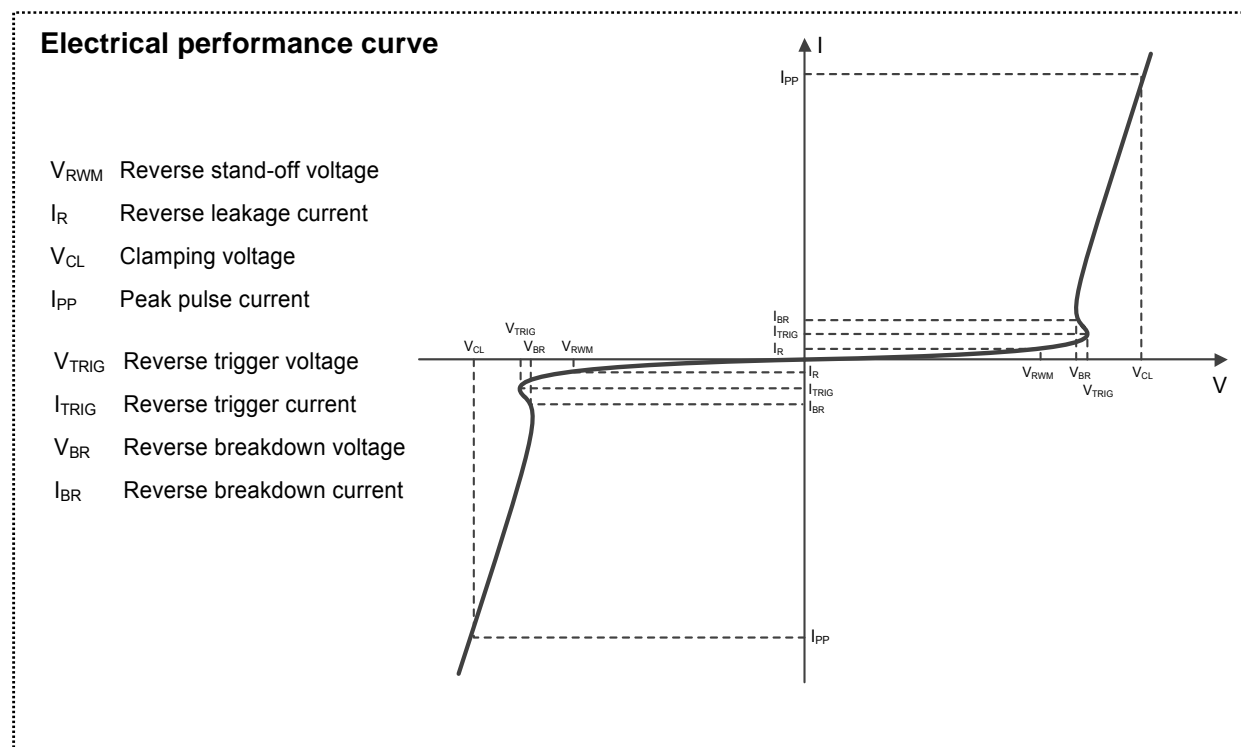
### Order information

Model	Package	shipping
ESD48V	SOT-23	3000/Tape&Reel

## Electrical characteristic(T=25°C unless otherwise specified)

Parameter	Symbol	Conditions	Min.	TYP.	Max.	Units
Reverse stand-off voltage	$V_{RWM}$				$\pm 48.0$	V
Reverse leakage current	$I_R$	$V_{RWM}=48.0V$			0.2	$\mu A$
Reveres breakdown voltage	$V_{BR}$	$I_T=1mA$	50.0	53.0	58.0	V
Clamping voltage	$V_C$	$I_{PP}=1A(8/20us)$		60.0		V
		$I_{pp}=4.0A(8/20us)$		75.0	82.0	V
Junction capacitance	$C_J$	$V_R=0V f=1MHz$		10.0	18.0	pF

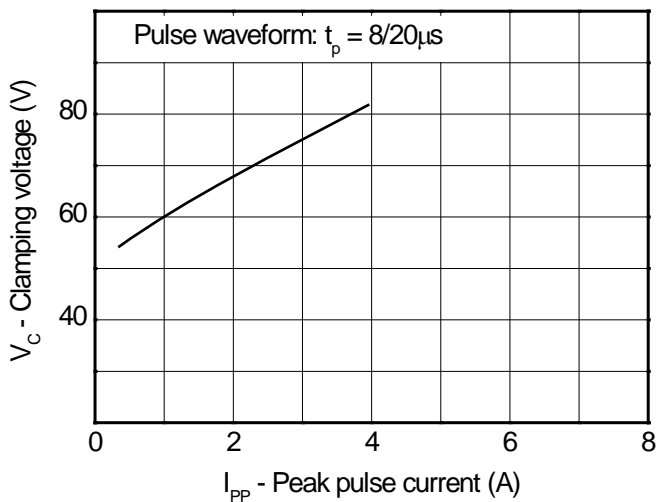
## Electrical characteristic(T=25°C, unless otherwise specified)



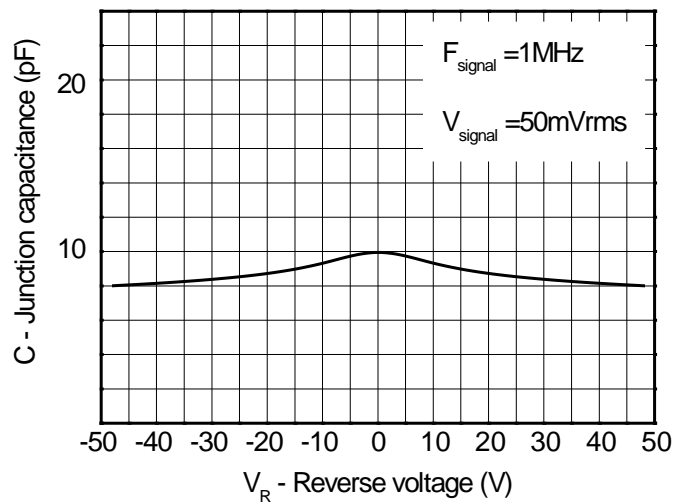
## Maximum Rating

Rating	symbol	value	Units
Peak Pulse Current( $t_p=8/20\mu s$ )	$I_{pp}$	4.0	A
ESD per IEC61000-4-2(Contact)	$V_{ESD}$	$\pm 20$	KV
ESD per IEC61000-4-2(Air)		$\pm 20$	
Operating Temperature	$T_J$	-40~125	$^{\circ}C$
Storage Temperature	$T_{STG}$	-55~155	$^{\circ}C$

## Typical characteristic

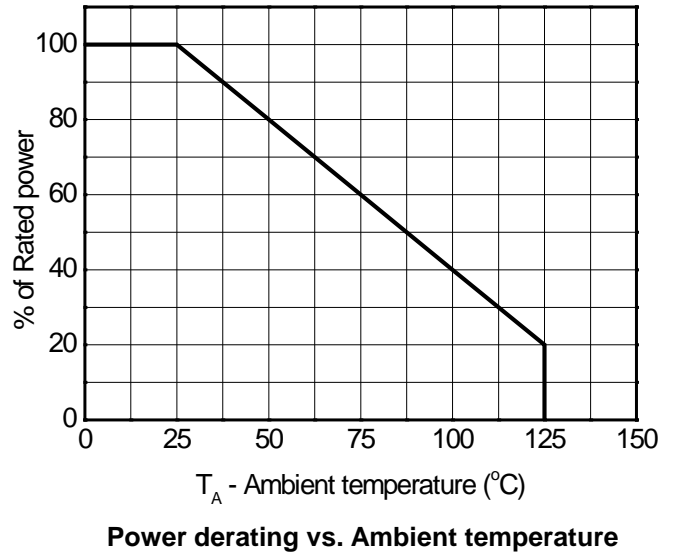
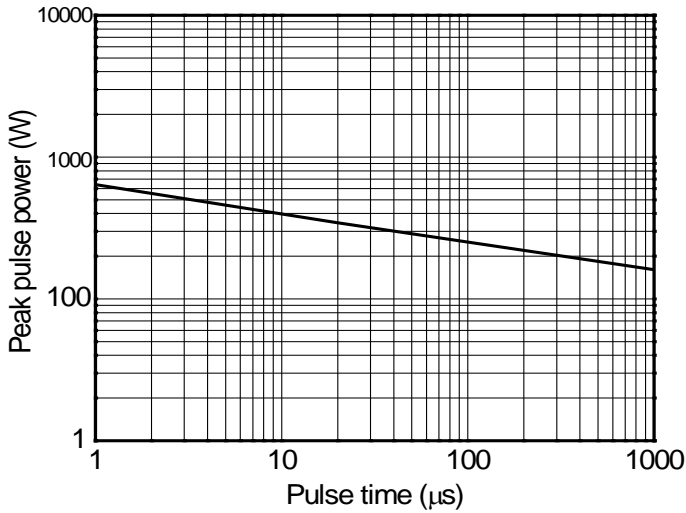
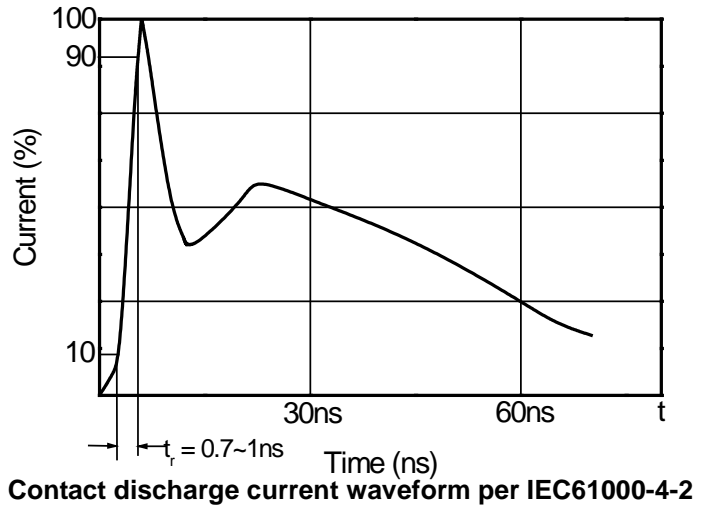
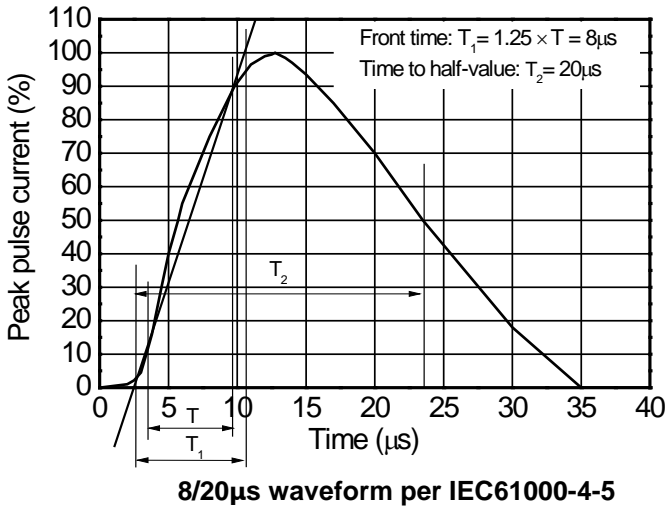


Clamping voltage vs. Peak pulse current

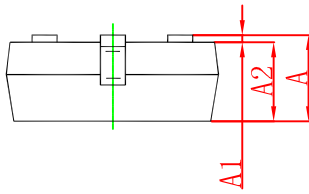
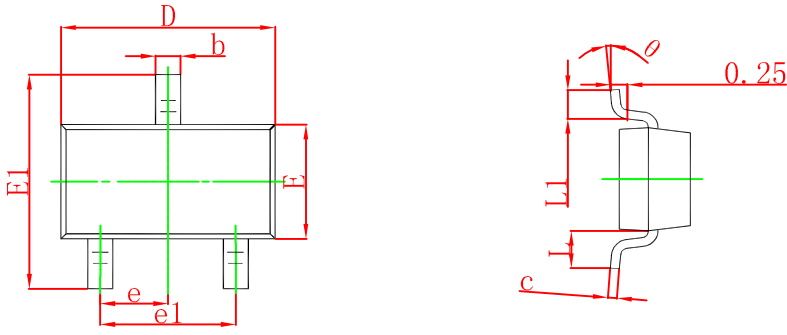


Capacitance vs. Reverse voltage

# Typical characteristic

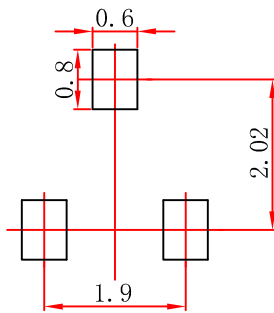


## SOT-23 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

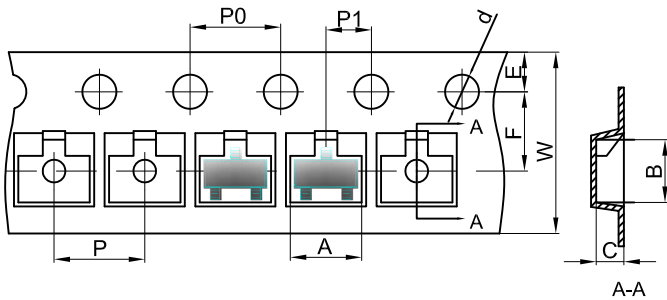
## SOT-23 Suggested Pad Layout



- Note:
1. Controlling dimension: in millimeters.
  2. General tolerance:  $\pm 0.05\text{mm}$ .
  3. The pad layout is for reference purposes only.

# SOT-23 Tape and Reel

## SOT-23 Embossed Carrier Tape



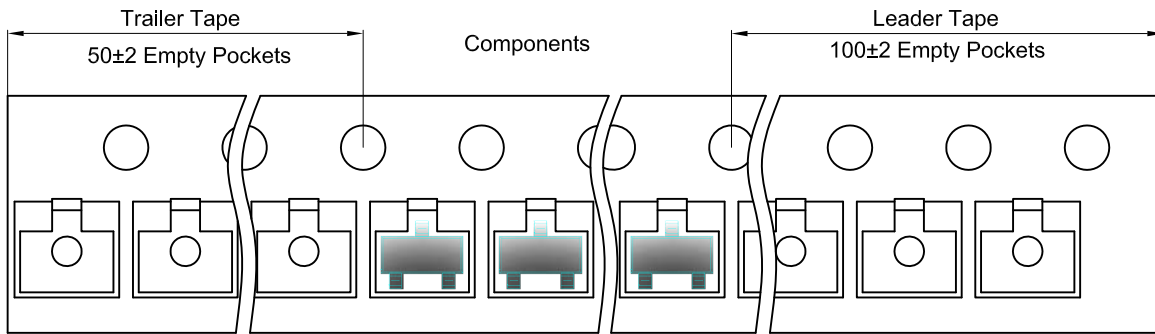
### Packaging Description:

SOT-23 parts are shipped in tape. The carrier tape is made from a dissipative (carbon filled) polycarbonate resin. The cover tape is a multilayer film (Heat Activated Adhesive in nature) primarily composed of polyester film, adhesive layer, sealant, and anti-static sprayed agent. These reeled parts in standard option are shipped with 3,000 units per 7" or 17.8cm diameter reel. The reels are clear in color and is made of polystyrene plastic (anti-static coated).

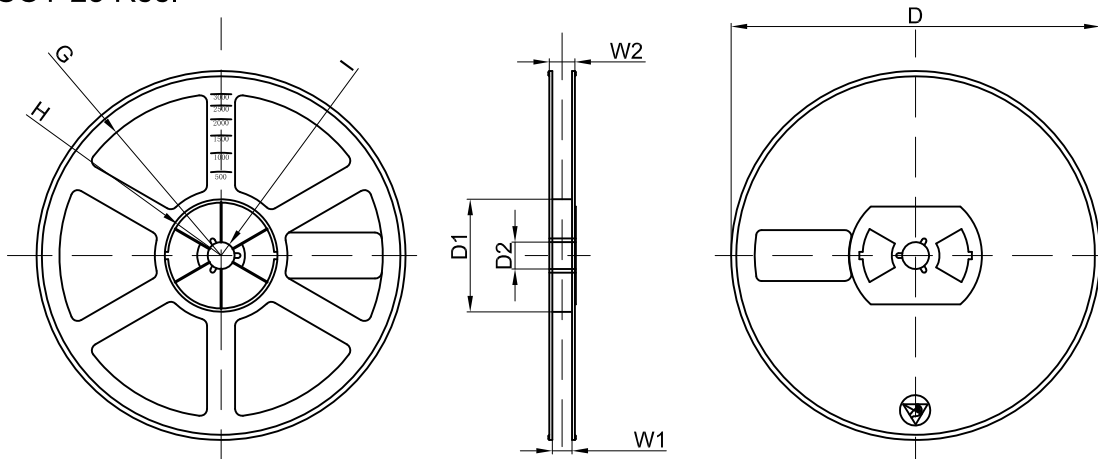
Dimensions are in millimeter

Pkg type	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	Ø1.50	1.75	3.50	4.00	4.00	2.00	8.00

## SOT-23 Tape Leader and Trailer



## SOT-23 Reel



Dimensions are in millimeter

Reel Option	D	D1	D2	G	H	I	W1	W2
7"Dia	Ø178.00	54.40	13.00	R78.00	R25.60	R6.50	9.50	12.30

REEL	Reel Size	Box	Box Size(mm)	Carton	Carton Size(mm)	G.W.(kg)
3000 pcs	7 inch	45,000 pcs	203×203×195	180,000 pcs	438×438×220	