

Features

450W (8/20μs) peak pulse power handling capability
High ESD protection level: ±30kV (IEC 61000-4-2 Air/Contact Model),
±16kV (JESD22-A114-B
Human Body Model), ±0.4kV (Machine Model)
Compact SOT-23 thin SMD package for space-saving designs
RoHS compliant and Pb-Free with matte tin lead finish
Protects two signal lines
Low reverse leakage current (max 1μA @ VRWM=24V)
Low junction capacitance (20-40pF @ VR=0V, f=1MHz)

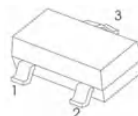
Applications

DeviceNet communication systems
Low and High Speed S2BT interfaces
Smart Distribution Systems (SDS)
Controlled Area Network (CAN) - ESD 1.1

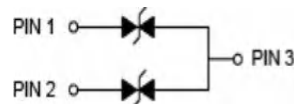
Mechanical Data

Package: SOT-23
Lead Finish: Matte Tin
Case Material: "Green" Molding Compound.
UL Flammability Classification Rating 94V-0
Moisture Sensitivity: Level 3 per J-STD-020
Terminal Connections: See Diagram Below

SOT-23



CB2



Schematic & PIN Configuration

Absolute Maximum Rating

Parameter	Symbol	Limit	Unit
IEC 61000-4-2 ESD Voltage	V _{ESD(1)}	±30	kV
Air Model		±30	
Contact Model		±16	
JESD22-A114-B ESD Voltage	P _{PP(2)}	±0.4	W
Per Human Body Model		450	
ESD Voltage	I _{PP(2)}	8	A
Machine Model		260	
Peak Pulse Power	T _L	150	°C
Peak Pulse Current	T _j	-55 ~ +150	°C
Lead Solder Temperature – Maximum (10 Second Duration)	T _{stg}		
Junction Temperature			
Storage Temperature Range			

(1).Device stressed with ten non-repetitive ESD pulses.

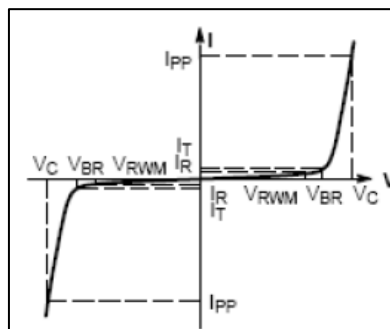
(2).Non-repetitive current pulse 8/20μs exponential decay waveform according to IEC61000-4-5.

Electrical Characteristics (TA=25°C unless otherwise specified)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
VRWM	Reverse Working Peak Voltage				24	V
VBR	Reverse Breakdown Voltage	$I_T = 1\text{mA}$	26.7	28	33	V
IR	Reverse Leakage Current	$VRWM = 24\text{V}$			1	μA
VC	Clamping Voltage	$I_{PP} = 1\text{A} (8/20\mu\text{s})$		35		V
VC	Clamping Voltage	$I_{PP} = 8\text{A} (8/20\mu\text{s})$		40	55	V
Ipp	Peak Pulse Current	$t_p = 8/20\mu\text{s}$			8	A
CJ	Capacitance	$VR = 0\text{V}, f = 1\text{MHz}$		20	40	pF

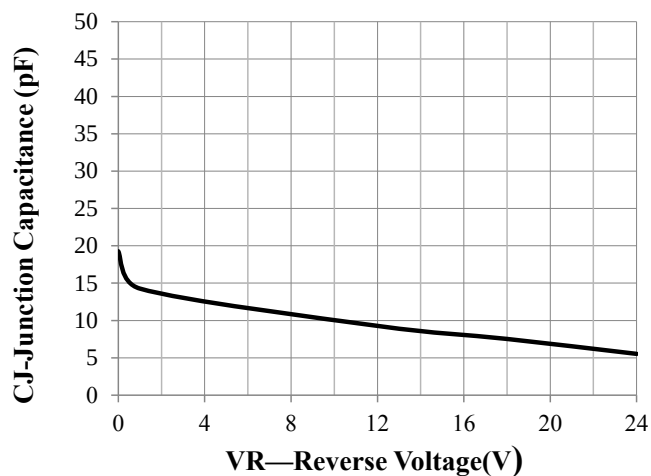
Electrical Parameters (TA = 25°C unless otherwise noted)

Symbol	Parameter
VC	Clamping Voltage @ I_{PP}
I_{PP}	Peak Pulse Current
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_R	Reverse Leakage Current @ V_{RWM}
V_{RWM}	Reverse Standoff Voltage

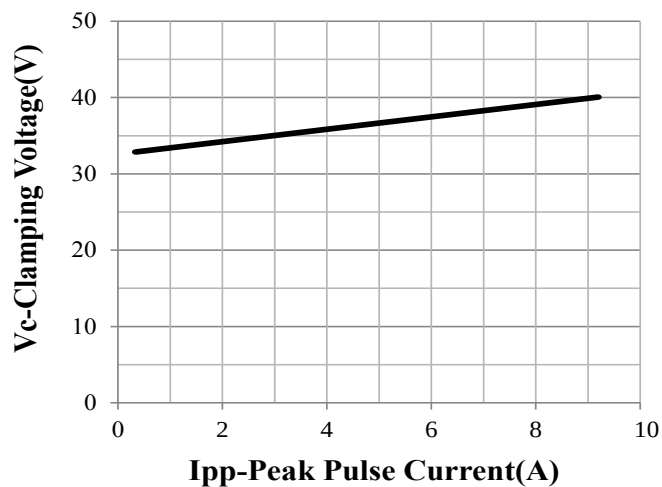


V-I characteristics for a Bi-directional TVS

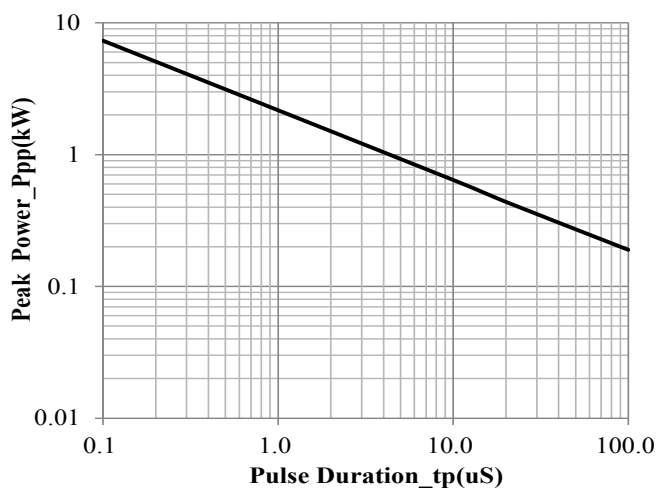
RATING AND CHARACTERISTIC CURVES



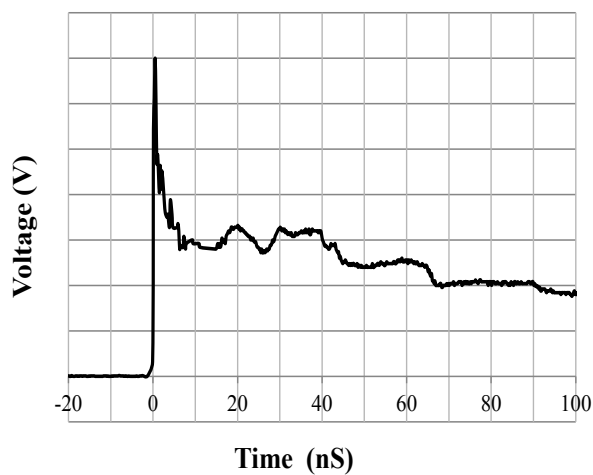
Junction Capacitance vs. Reverse Voltage



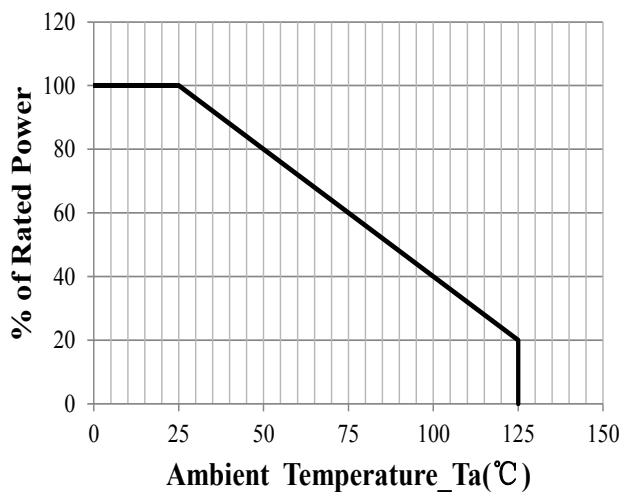
Clamping Voltage vs. Peak Pulse Current



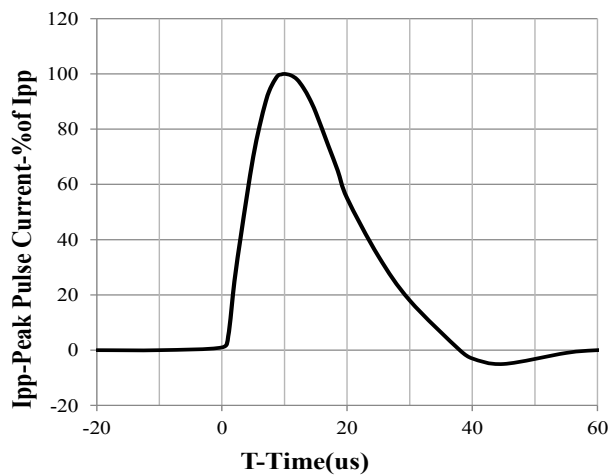
Peak Pulse Power vs. Pulse Time



IEC61000-4-2 Pulse Waveform



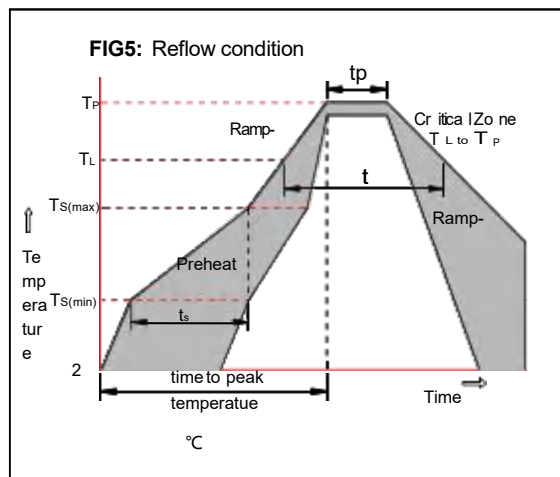
Power Derating Curve



8 X 20us Pulse Waveform

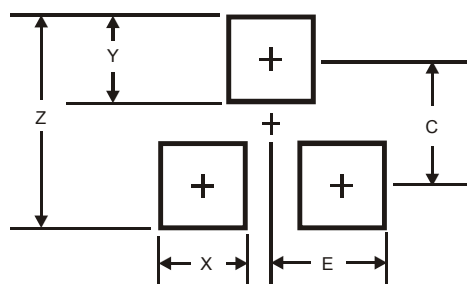
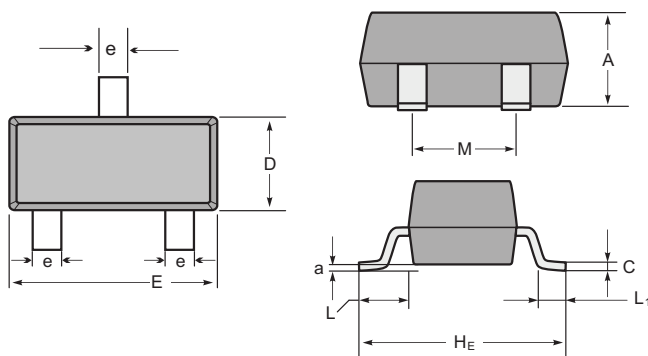
Soldering parameters

Reflow Condition		Pb-Free assembly (see as below)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T_L)(Liquid us)	+217°C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_P)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_P)		30 secs. Max
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_P)		8 min. Max
Do not exceed		+260°C



Package Dimensions & Suggested Pad Layout

SOT23

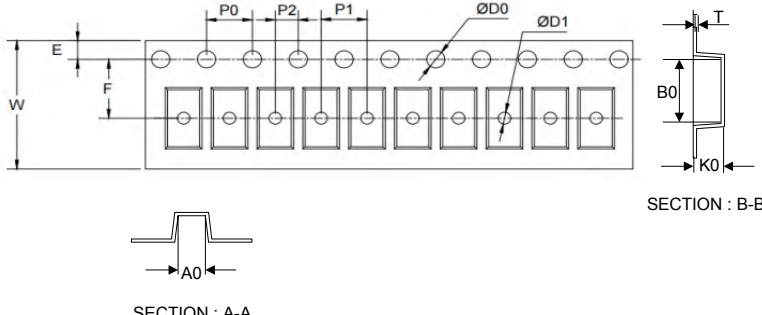
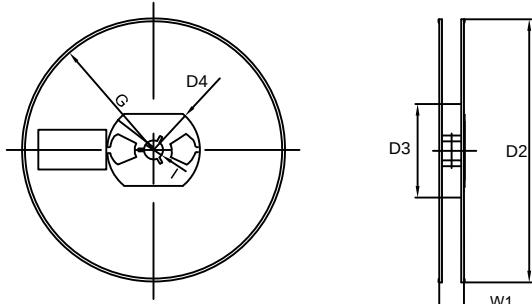


SOT-23 mechanical data

UNIT	A	C	D	E	H _E	e	M	L	L ₁	a
mm	max	1.1	0.15	1.4	3.0	2.6	0.5	1.95	0.55 (ref)	0.0
	min	0.9	0.08	1.2	2.8	2.2	0.3	1.7	0.36 (ref)	0.15
mil	max	43	6	55	118	102	20	77	22 (ref)	0.0
	min	35	3	47	110	87	12	67	14 (ref)	6

Dimensions	SOT23
Z	2.9
X	0.8
Y	0.9
C	2.0
E	1.35

Tape & reel specification

Tape		Symbol	Dimension (mm)
 SECTION : A-A SECTION : B-B		P0	4.00±0.10
		P1	4.00±0.10
		P2	2.00±0.10
		D0	1.55±0.10
		D1	1.05±0.10
		E	1.55±0.10
		F	3.60±0.10
		W	8.00±0.10
		A0	3.80±0.20
		B0	3.25±0.20
		K0	1.45±0.10
		T	0.25±0.05
7" Reel 		D2	178.0±3.0
		D3	55Min.
		D4	R24.0±3.0
		G	R82.0±3.0
		I	13.0±2.0
		W1	11.0±3.0
		Quantity: 3000PCS	