

SOTxxLC

Low Capacitance Uni-direction TVS Diodes

The SOTxxLC series devices feature a low capacitance, fast switching compensation diode in series with a standard TVS diode. This effectively reduces the overall capacitance of the device to less than 5pF making it an integrated, low capacitance solution for use on high-speed interfaces.

This series has been specifically designed to protect sensitive components which are connected to high-speed data and transmission lines from overvoltage caused by ESD(electrostatic discharge), CDE (Cable Discharge Events),and EFT (electrical fast transients).

Features

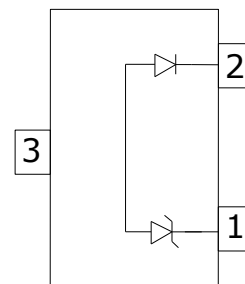
- Small package for use in portable electronics
- Low capacitance
- Low insertion loss
- Low leakage current
- Response Time is < 1 ns
- Working voltages : 5V,12V,15V and 24V
- Solid-state silicon avalanche technology
- Device Meets MSL 1 Requirements
- ROHS compliant
- WeiPan technology

Main applications

- High-Speed data lines
- Cellular handsets AND accessories
- Universal Serial Bus (USB) port protection
- Portable instrumentation
- LAN/WAN equipment
- Peripherals
- Video/Audio port
- Notebook Computers
- Projection TV



SOT-23



Ordering Information

Device	Qty per Reel	Reel Size
SOTxxLC	3000	7 Inch

“xx” =Working Peak Reverse Voltage

Maximum ratings (Tamb=25°C Unless Otherwise Specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (tp=8/20μs waveform)	P _{PPP}	350	Watts
ESD Rating per IEC61000-4-2:		8	KV
Contact Air		15	
Lead Soldering Temperature	T _L	260 (10 sec.)	℃
Operating Temperature Range	T _J	-55 ~ 150	℃
Storage Temperature Range	T _{STG}	-55 ~ 150	℃

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

**Other voltages may be available upon request.*

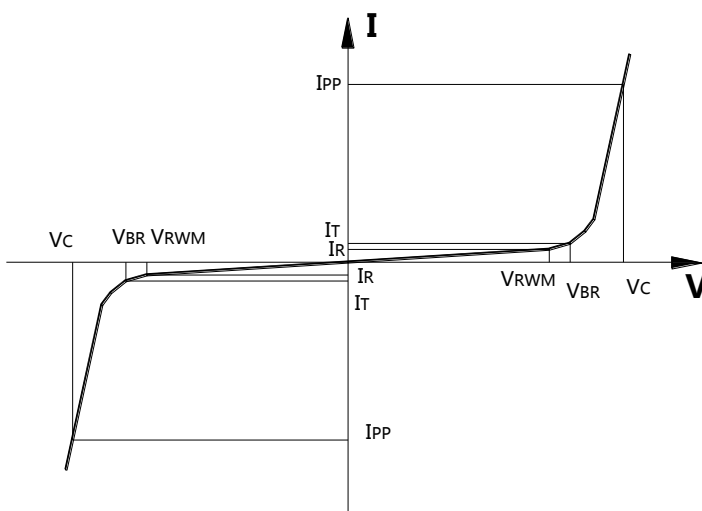
1. *Non-repetitive current pulse, per Figure 1.*

Electrical characteristics (Tamb=25°C Unless Otherwise Specified)

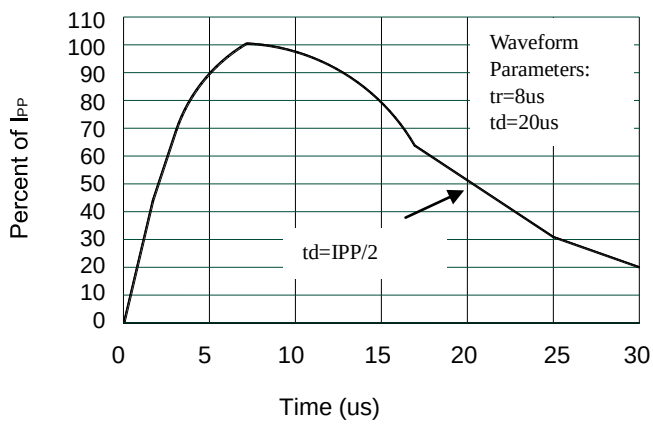
Device	V _{RWM}	I _R @ V _{RWM}	V _{BR} @ 1 mA	V _C		Max I _{PP}	Capacitance	
			(Volts)	@ 1 A	@ Max I _{PP}		@ V _R = 0 V, 1 MHz (pF)	
	(V)	(uA)	Min	(V)	(V)	(A)	Typ	Max
SOT05LC	5	1	6	9.8	15	10	1.5	3
SOT12LC	12	1	13.3	19	30	6	1.5	3
SOT15LC	15	1	16.7	24	35	5	1.5	3
SOT24LC	24	1	26.7	43	55	3	1.5	3

Junction capacitance is measured in VR=0V,F=1MHz

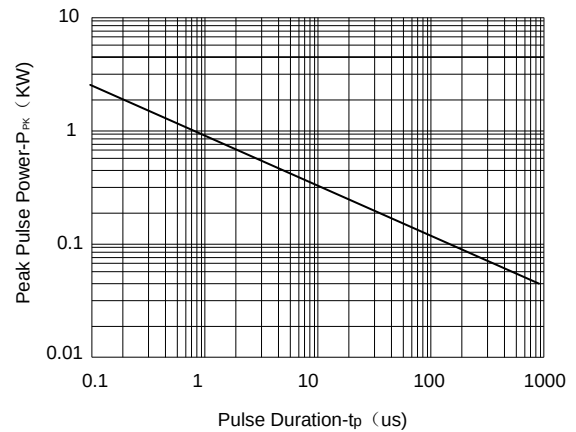
Symbol	Parameter
V_{RWM}	Working Peak Reverse Voltage
V_{BR}	Breakdown Voltage @ I_T
V_C	Clamping Voltage @ I_{PP}
I_T	Test Current
I_{RM}	Leakage current at V_{RWM}
I_{PP}	Peak pulse current
C_O	Off-state Capacitance
C_J	Junction Capacitance



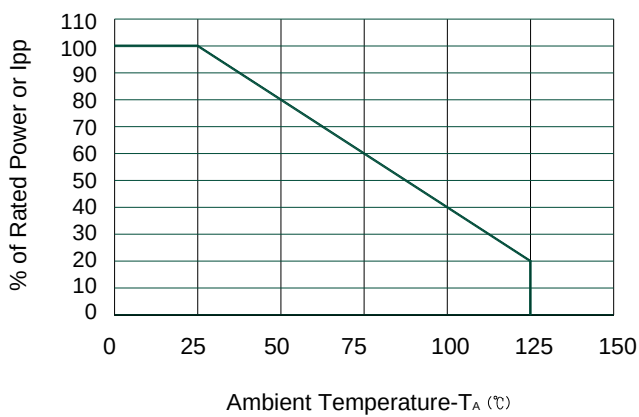
Typical electrical characterist applications



Pulse Waveform

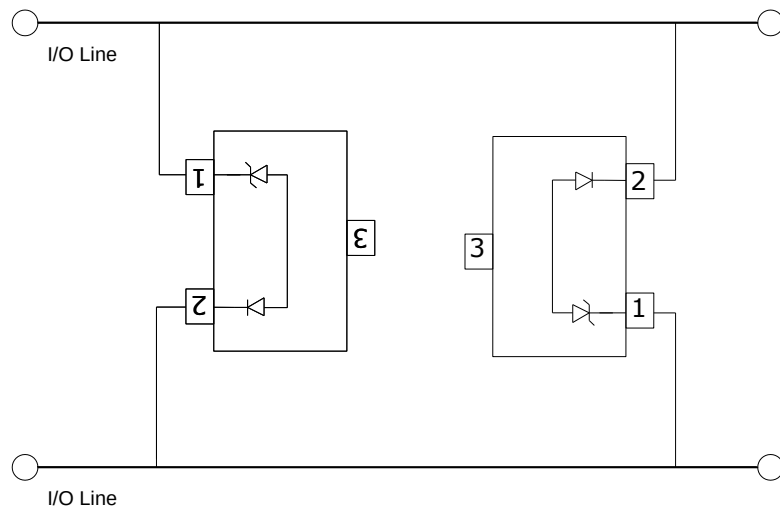


Non-Repetitive Peak Pulse Power vs. Pulse Time

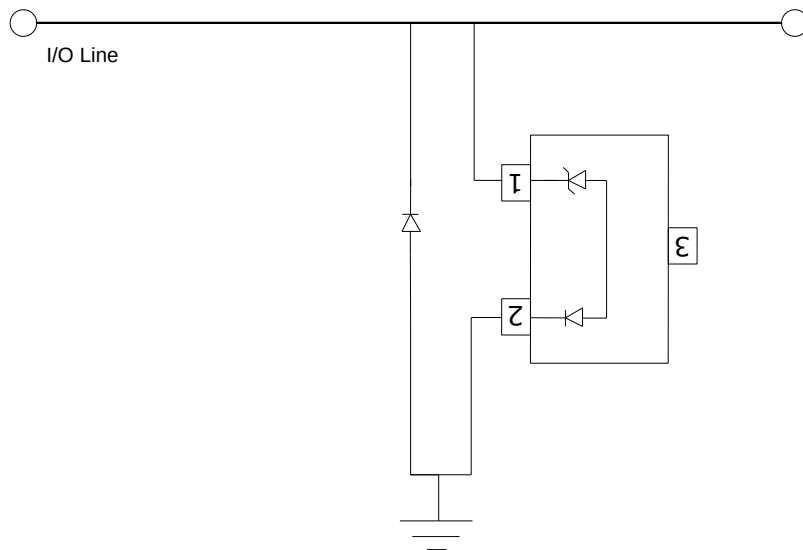


Power Derating Curve

Typical applications



I/O Line Bi-direction Protection



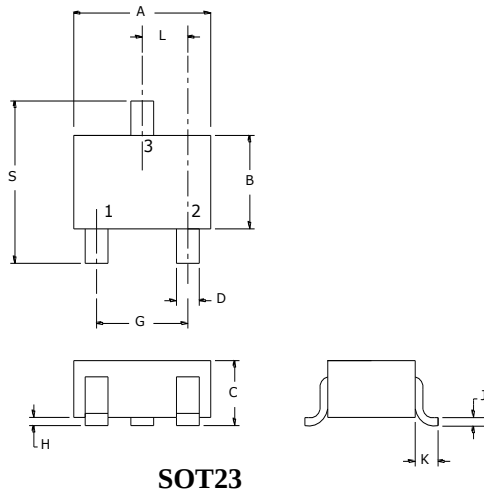
I/O Line uni-direction Protection

Package Information

SOT23

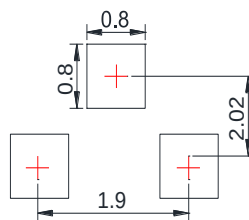
Mechanical Data

- Case: SOT23
- Case Material: Molded Plastic, UL Flammability

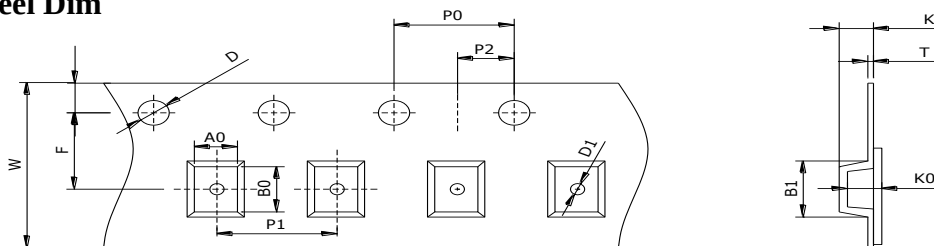


Dim	Millimeters		Inches	
	Min	Max	Min	Max
A	2.80	3.00	0.110	0.118
B	1.20	1.40	0.047	0.055
C	0.90	1.15	0.035	0.045
D	0.30	0.50	0.012	0.020
G	1.8	2.0	0.071	0.079
H	0.0	0.100	0	0.004
J	0.080	0.15	0.003	0.006
K	0.550REF		0.022REF	
L	0.95TYP		0.037TYP	
S	2.25	2.550	0.089	0.100

Recommended Pad outline



SOT-23 Reel Dim



Package	Chip Size	Pocket Size B0×A0×K0(mm)	Tape Width	Reel Diameter	Quantity Per Reel	P0	P1
SOT-23	3.0×2.50×1.10	3.10×2.70×1.20	8mm	178mm(7")	3000	4mm	4mm
D0	D1	E	F	K	T	W	
1.5mm	1.0mm	1.75mm	3.5mm	1.10mm	0.2mm	8mm	