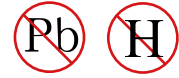




Bidirectional TVS Diode



Features

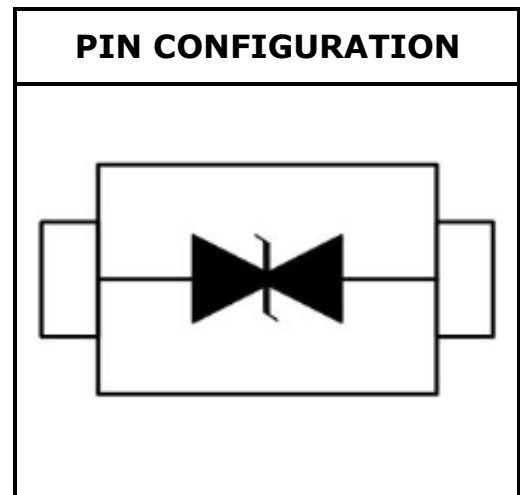
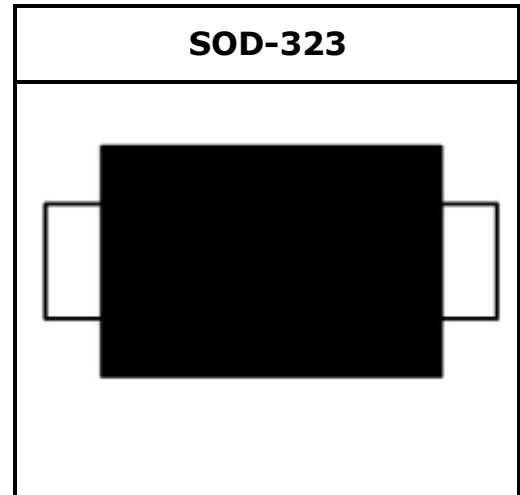
- Peak Power Dissipation – 350 W (8 x 20 us Waveform)
- Replacement for MLV (0805)
- Protects One Power or I/O Port
- Low Clamping Voltage
- Low Leakage
- Response Time is < 1 ns
- Available in Multiple Voltages Ranging From 3V to 36V
- Meets MSL 1 Requirements
- **Solid-state silicon avalanche technology**
- ROHS compliant

Main applications

- Cellular handsets AND accessories
- Portable instrumentation
- Peripherals
- Networking and Telecom
- Serial and Parallel Ports
- Notebooks, Desktops, Servers
- Projection TV

Protection solution to meet

- IEC61000-4-2 (ESD) ±30kV (air), ±30kV (contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)



Ordering Information

Device	Marking	Package	Qty per Reel	Reel Size
YS3Z3V3BT1G	2A	SOD-323	3000	7 Inch
YS3Z5V0BT1G	2B			
YS3Z12VBT1G	AD			
YS3Z15VBT1G	AE			
YS3Z18VBT1G	2K			
YS3Z24VBT1G	AF			
YS3Z36VBT1G	AG			

DEVICE CHARACTERISTICS

YS3ZxxxBT1G

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:	Contact	30	KV
	Air	30	
Lead Soldering Temperature	T _L	260 (10 sec.)	°C
Operating Temperature Range	T _J	-55 ~ 150	°C
Storage Temperature Range	T _{STG}	-55 ~ 150	°C
Lead Solder Temperature – Maximum (10 Second Duration)	T _L	260	°C

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.

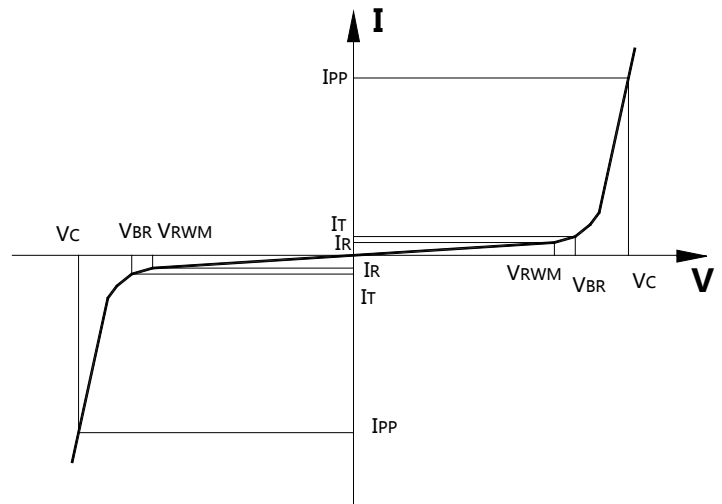
1. Non-repetitive current pulse, per Figure 1.

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

Device	V _{RWM} (V)	I _R @ V _{RWM} (µA)	V _{BR} @ 1 mA	V _{C1}	V _{C2}	I _{PP}	P _{PPP}	C _J
			(Volts)	@ 1 A IPP	@ IPP	(Amps)	(Watt)	(pF)
			Min	(V)	(V)	Max.	Max.	(typ)
YS3Z3V3BT1G	3.3	20	4	7.8	28	17	350	100
YS3Z5V0BT1G	5	5	6	8	17	20	350	75
YS3Z12VBT1G	12	1	13.3	19	38	8	250	30
YS3Z15VBT1G	15	1	16.7	24	45	5	250	22
YS3Z18VBT1G	18	1	20	29	68	5	250	20
YS3Z24VBT1G	24	1	26.1	43	79	3	250	12
YS3Z36VBT1G	36	1	40	60	90	2.5	250	30

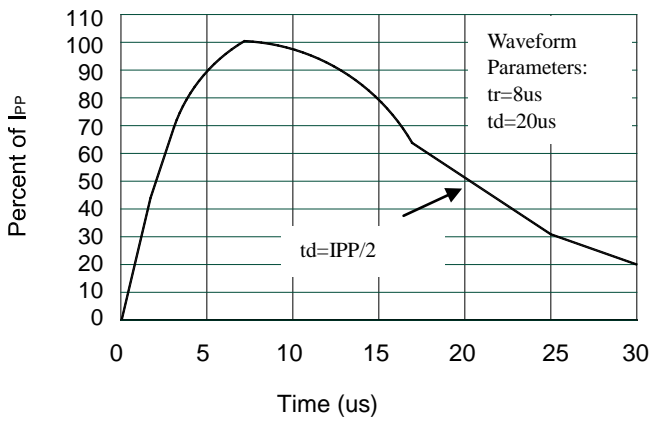
Junction capacitance is measured in VR=0V, F=1MHz

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

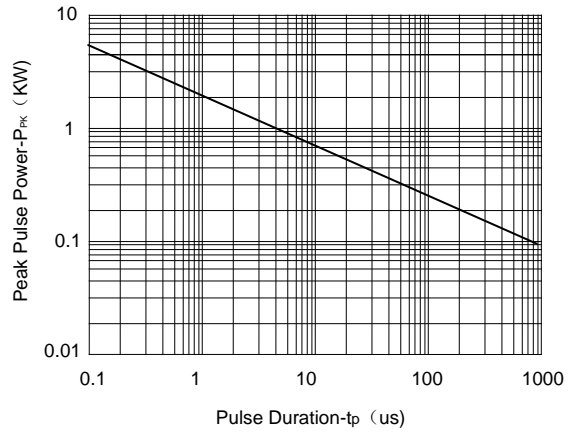


DEVICE CHARACTERISTICS

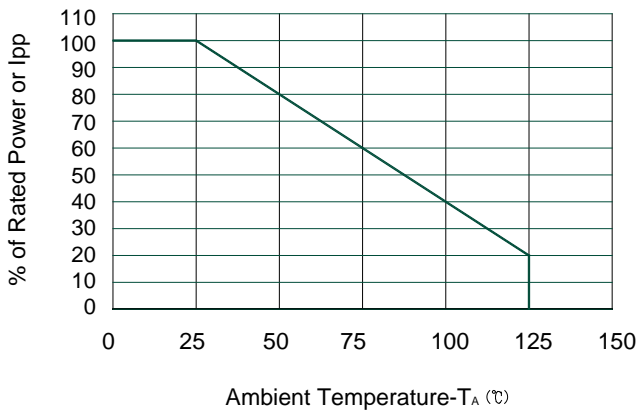
YS3ZxxxBT1G



Pulse Waveform



Non-Repetitive Peak Pulse Power vs. Pulse Time



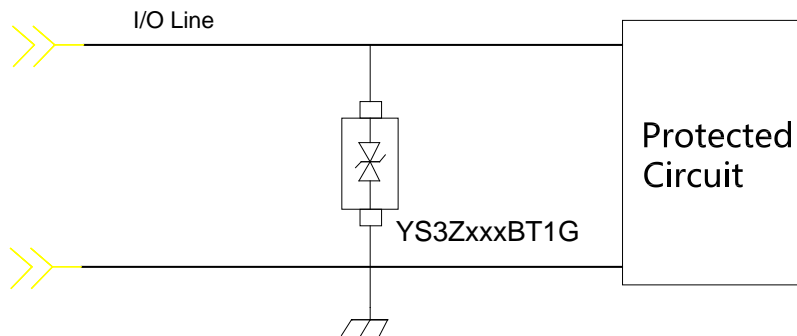
Power Derating Curve

DEVICE CHARACTERISTICS

YS3ZxxxBT1G

Typical applications

I/O Line Protection



Circuit board layout and protection device placement

Circuit board layout is critical for the suppression of ESD, Electrical Fast Transient (EFT) and surge transients. The following guidelines are recommended:

1. Place the protection device as close to the input terminal or connector as possible.
2. The path length between the protection device and the protected line should be minimized.
3. Keep parallel signal paths to a minimum.
4. Avoid running protected conductors in parallel with unprotected conductor.
5. Minimize all printed-circuit board conductive loops including power and ground loops.
6. Minimize the length of the transient return path to ground.
7. Avoid using shared transient return paths to a common ground point.
8. Ground planes should be used whenever possible. For multilayer printed-circuit boards, use ground vias.

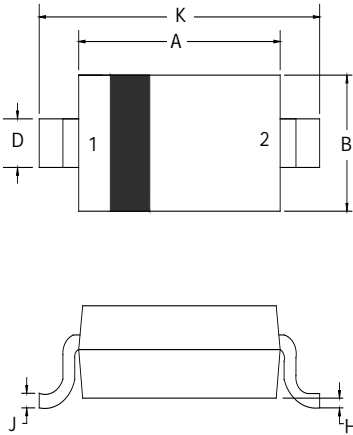
PACKAGE OUTLINE & DIMENSIONS

YS3ZxxxBT1G

Mechanical Data

Case: SOD-323

Case Material: Molded Plastic. UL Flammability



Dim	Millimeters	
	Min	Max
A	1.60	1.80
B	1.2	1.40
C	0.80	0.90
D	0.25	0.35
E	0.15REF	
H	0	0.10
J	0.08	0.15
K	2.50	2.70

Recommended Pad outline

