

T-E5ZC Bidirectional Micro Packaged TVS Diodes for ESD Protection

The T-E5ZC is designed to protect voltage sensitive components from ESD. Excellent clamping capability, low leakage, and fast response time provide best in class protection on designs that are exposed to ESD. Because of its small size, it is suited for use in cellular phones, MP3 players, digital cameras and many other portable applications where board space comes at a premium.

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

Features

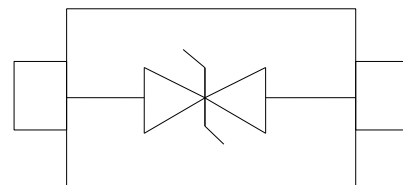
- Peak Power Dissipation – 100 W (8 x 20 us Waveform)
- Replacement for MLV (0603)
- Protects I/O Port
- Low Clamping Voltage
- Low Leakage
- Low Body Height: 1.68mm
- Response Time is < 1 ns
- Stand-off Voltage: 5.0 V
- RoHS Compliant
- Meets MSL 1 Requirements
- Solid-state silicon avalanche technology
- ROHS compliant
- Device Meets MSL 1 Requirements
- Tech chip technology



SOD-523

Main applications

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



Protection solution to meet

- IEC61000-4-2 (ESD) $\pm 15\text{kV}$ (air), $\pm 8\text{kV}$ (contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)

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

Parameter	Symbol	Value	Unit
Peak Pulse Power ($t_p=8/20\mu\text{s}$ waveform)	P _{PPP}	100	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

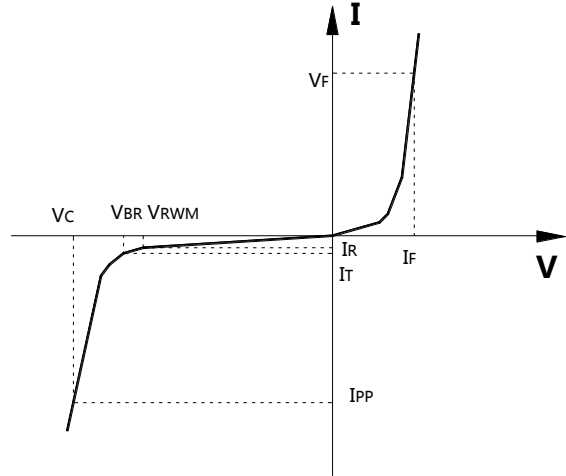
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Electrical characteristics ($T_{amb}=25^{\circ}\text{C}$ Unless Otherwise Specified)

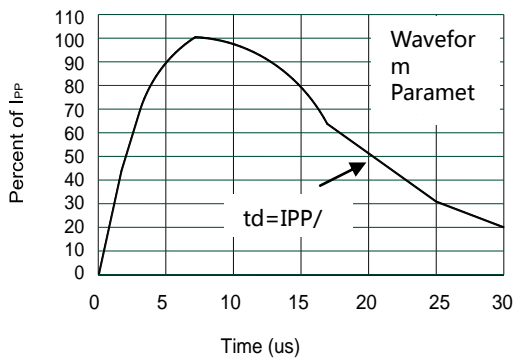
Device	VRWM	IR @ VRWM	VBR @ 1 mA	VC	Capacitance	
			(Volts)	@ 1 A	@ VR = 0 V, 1 MHz (pF)	
	(V)	(uA)	Min	(V)	Typ	Max
T-E5ZC	5.0	2	6.0	9.8	22	28

Junction capacitance is measured in $V_R=0V, F=1\text{MHz}$

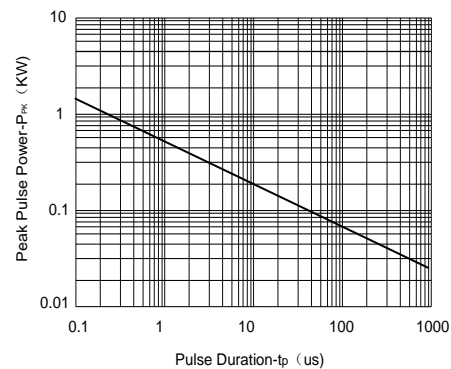
Symbol	Parameter
V_{RWM}	Working Peak Reverse Voltage
V_{BR}	Breakdown Voltage @ I_T
V_C	Clamping Voltage @ I_{PP}
I_T	Test Current
I_{RM}	Leakage current at V_{RWM}
I_{PP}	Peak pulse current
C_O	Off-state Capacitance
C_J	Junction Capacitance



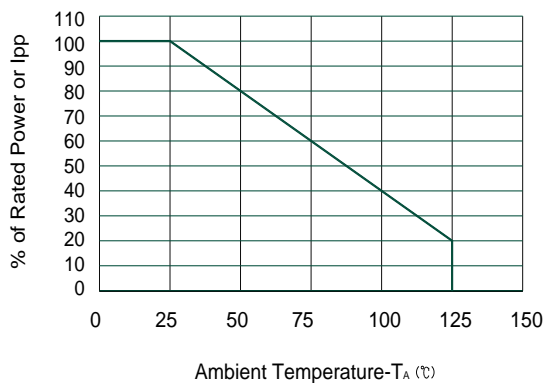
Typical electrical characterist applications



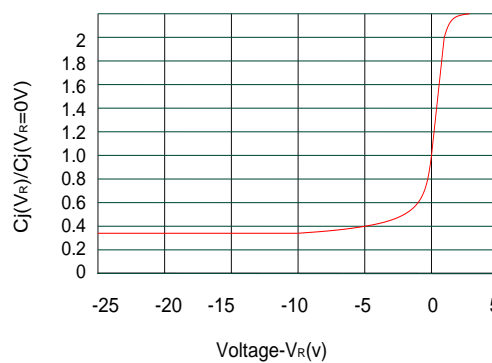
Pulse



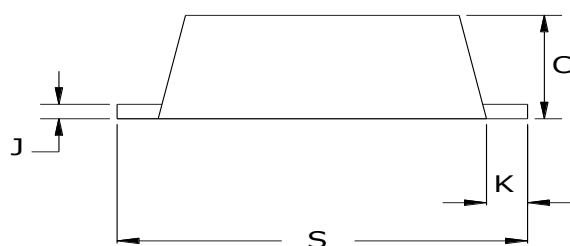
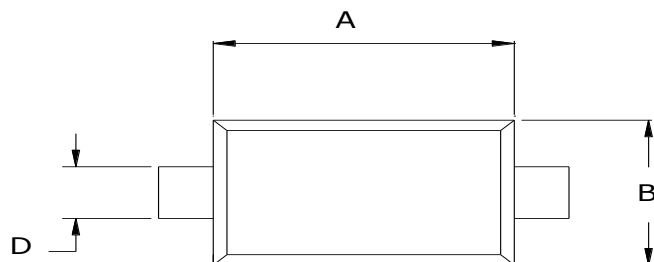
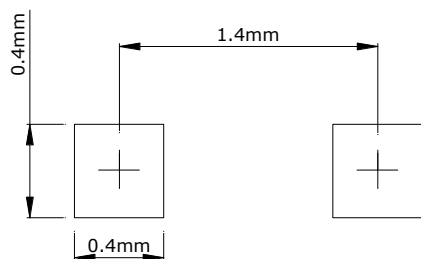
Non-Repetitive Peak Pulse Power vs.



Power Derating



Junction Capacitance vs. Reverse

Package information
SOD-523

Recommended Pad outline

Ordering Information

Device	Qty per Reel	Reel Size
T-E5ZC	3000	7 Inch

Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.10	1.30	0.043	0.051
B	0.70	0.90	0.045	0.053
C	0.50	0.70	0.031	0.043
D	0.25	0.35	0.004	0.012
J	0.07	0.20	0.0028	0.0079
K	0.15	0.25	0.006	0.010
S	1.50	1.70	0.059	0.067