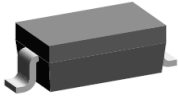


### Small Signal Diode



#### Features

- ↪ Meet IEC61000-4-2 (ESD) ±15kV (air), ±8kV (contact)
- ↪ Meet IEC61000-4-4 (EFT) rating. 40A (5/50ns)
- ↪ Protects one bidirectional I/O line
- ↪ Working Voltage : 5V
- ↪ Pb free version, RoHS compliant, and Halogen free

#### Mechanical Data

- ↪ Case : SOD-323 small outline plastic package
- ↪ Terminal: Matte tin plated, lead free., solderable per MIL-STD-202, Method 208 guaranteed
- ↪ High temperature soldering guaranteed: 260°C/10s
- ↪ Mounting position: Any
- ↪ Weight : 4.85±0.5 mg
- ↪ Marking Code : 2B

#### Applications

- ↪ Cell Phone Handsets and Accessories
- ↪ Notebooks, Desktops, and Servers
- ↪ Keypads, Side Keys, USB 2.0, LCD Displays
- ↪ Portable Instrumentation
- ↪ Microprocessor based equipment

#### Ordering Information

Part No.	Package	Packing	Packing Code	Marking
TESDC5V0	SOD-323	3K / 7" Reel	RRG	2B

#### Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.

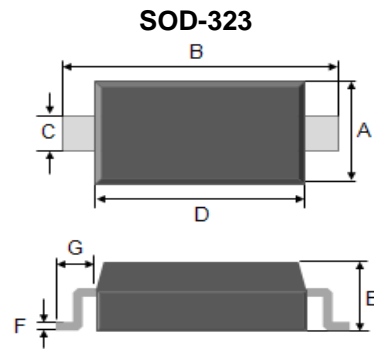
##### Maximum Ratings

Type Number	Symbol	Value	Units
Peak Pulse Power (tp=8/20µs waveform)	P <sub>PP</sub>	500	W
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V <sub>ESD</sub>	±15 ±8	kV
Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to + 150	°C

##### Electrical Characteristics

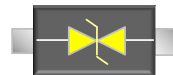
Type Number	Symbol	Min	Max	Units
Reverse Stand-Off Voltage	V <sub>RWM</sub>	-	5	V
Reverse Breakdown Voltage	V <sub>(BR)</sub>	6	-	V
Reverse Leakage Current	I <sub>R</sub>	-	5	µA
Clamping Voltage	V <sub>C</sub>	I <sub>PP</sub> = 5A	9.8	V
		I <sub>PP</sub> = 24A	14.5	
Junction Capacitance	C <sub>J</sub>	200(Typ.)		pF

Notes: 1. The suggested land pattern dimensions have been provided for reference only, as actual pad layouts may vary depending on application.

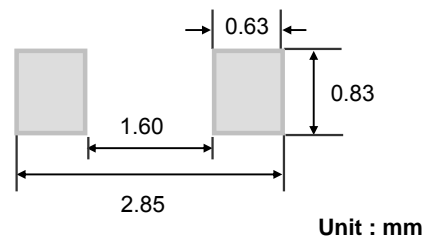


Dimensions	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	1.20	1.40	0.047	0.055
B	2.50	2.70	0.098	0.106
C	0.25	0.35	0.010	0.014
D	1.60	1.80	0.063	0.071
E	0.80	0.90	0.031	0.035
F	0.08	0.15	0.003	0.006
G	0.19 REF		0.475 REF	

#### Pin Configuration



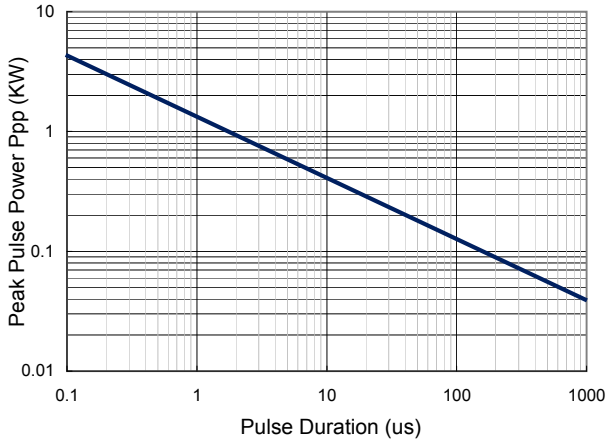
#### Suggested PAD Layout



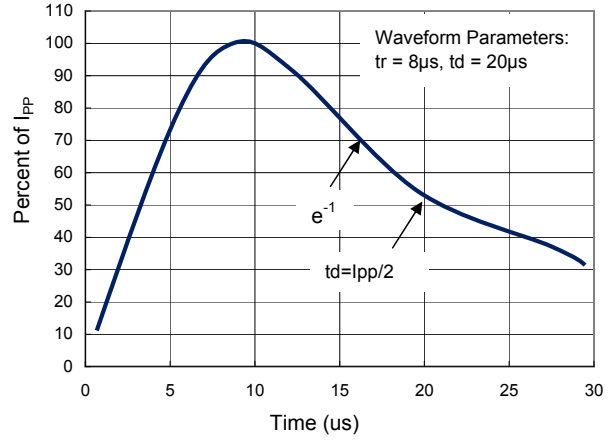
**Small Signal Diode**

**Rating and Characteristic Curves**

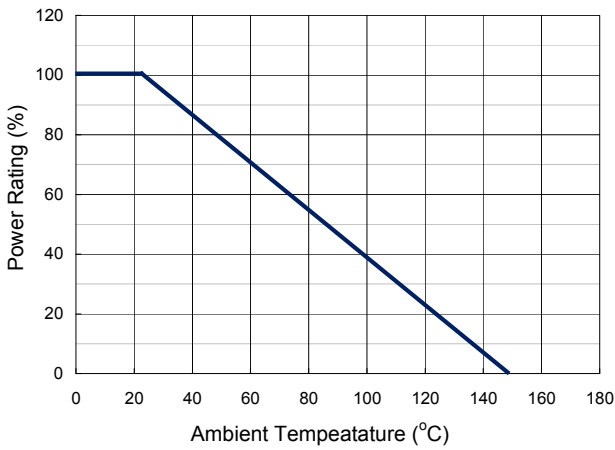
**FIG 1 Non-Repetitive Peak Pulse Power vs. Pulse Time**



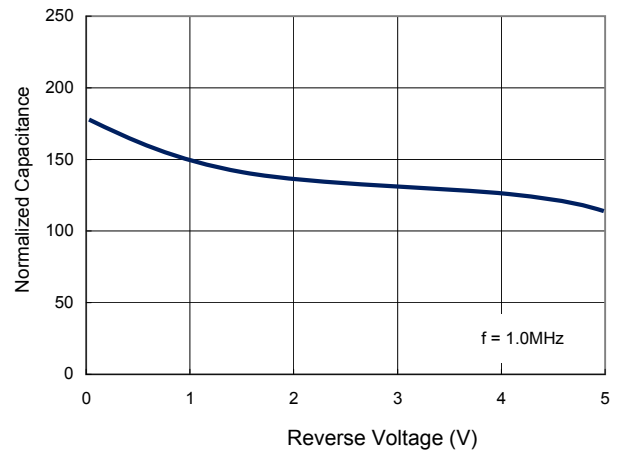
**FIG 2 Pulse Waveform**



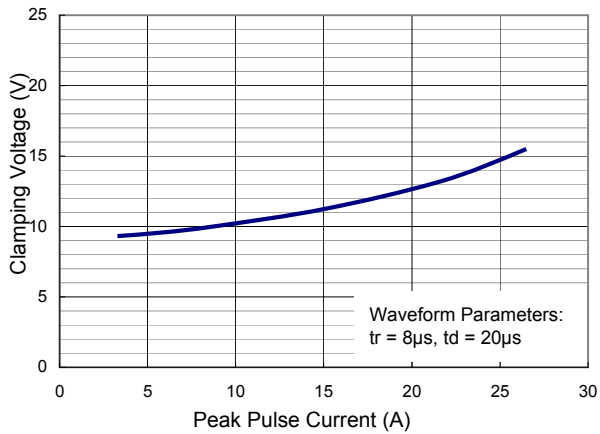
**FIG 3 Admissible Power Dissipation Curve**



**FIG 4 Typical Junction Capacitance**



**FIG 5 Clamping Voltage vs. Peak Pulse Current)**



**Small Signal Diode**

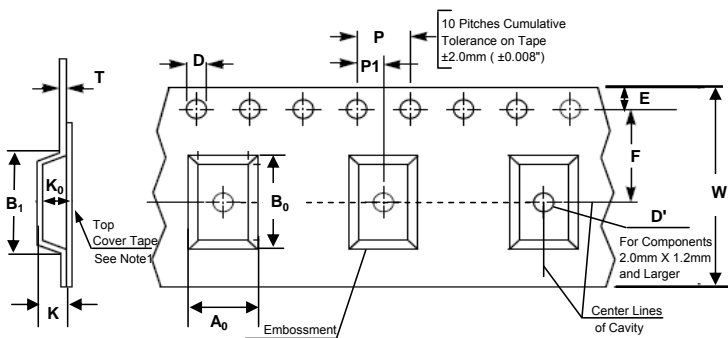
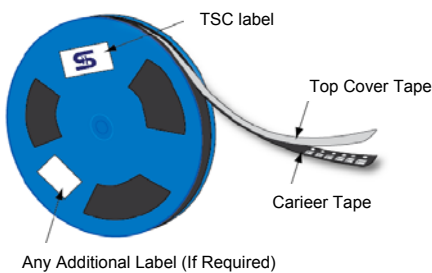
**Applications Information**

- ◇ Designed to protect one data, I/O, or power supply line.
- ◇ Designed to protect sensitive electronics from damage or latch-up due to ESD
- ◇ Designed to replace multilayer varistors (MLVs) in portable applications
- ◇ Offers superior electrical characteristics such as lower clamping voltage and no device degradation when compared to MLVs
- ◇ The combination of small size and high ESD surge capability makes them ideal for use in portable applications.

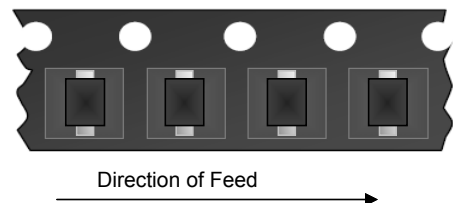
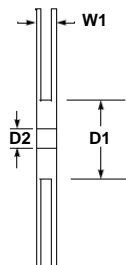
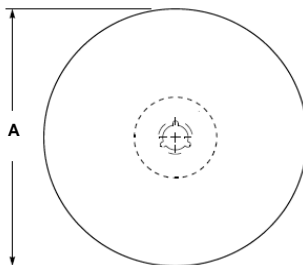
**Circuit Board Layout Recommendations**

- Good circuit board layout is critical for the suppression of ESD induced transients.
- ◇ Place the ESD Protection Diode near the input terminals or connectors to restrict transient coupling.
  - ◇ Minimize the path length between the ESD Protection Diode and the protected line.
  - ◇ Minimize all conductive loops including power and ground loops.
  - ◇ The ESD transient return path to ground should be kept as short as possible.

**Tape & Reel specification**



Item	Symbol	Dimension (mm)
Carrier depth	K	2.40 Max.
Sprocket hole	D	1.50 +0.10
Reel outside diameter	A	178 ± 1
Reel inner diameter	D1	50 Min.
Feed hole width	D2	13.0 ± 0.5
Sprocket hole position	E	1.75 ± 0.10
Punch hole position	F	3.50 ± 0.05
Sprocket hole pitch	P0	4.00 ± 0.10
Embossment center	P1	2.00 ± 0.10
Overall tape thickness	T	0.6 Max.
Tape width	W	8.30 Max.
Reel width	W1	14.4 Max.



Note 1:  $A_0$ ,  $B_0$ , and  $K_0$  are determined by component size. The clearance between the components and the cavity must be within 0.05 mm min. to 0.5 mm max. The component cannot rotate more than 10° within the determined cavity.

Note 2: If  $B_1$  exceeds 4.2 mm (0.165") for 8 mm embossed tape, the tape may not feed through all tape feeders.