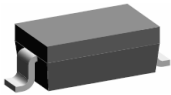


### Small Signal Diode



#### Features

- ✧ Meet IEC61000-4-2 (ESD)  $\pm 15\text{kV}$  (air),  $\pm 8\text{kV}$  (contact)
- ✧ Meet IEC61000-4-4 (EFT) rating. 40A (5/50ns)
- ✧ Protects one Bi-directional I/O line
- ✧ Working Voltage : 24V
- ✧ Pb free version, RoHS compliant, and Halogen free

#### Mechanical Data

- ✧ Case : SOD-323g small outline plastic package
- ✧ Terminal: Matte tin plated, lead free., solderable per MIL-STD-202, Method 208 guaranteed
- ✧ High temperature soldering guaranteed:  $260^\circ\text{C}/10\text{s}$
- ✧ Mounting position: Any
- ✧ Weight :  $48\pm 5\text{mg}$  (Approximate)
- ✧ Marking Code : 2H

#### Applications

- ✧ Cell Phone Handsets and Accessories
- ✧ Notebooks, Desktops, and Servers
- ✧ Keypads, Side Keys,
- ✧ Portable Instrumentation
- ✧ Microprocessor Based Equipment
- ✧ Peripherals

#### Ordering Information

Part No.	Package	Packing	Packing Code	Marking
TESDC24V	SOD-323g	3K / 7" Reel	RRG	2H

#### Maximum Ratings and Electrical Characteristics

Rating at  $25^\circ\text{C}$  ambient temperature unless otherwise specified.

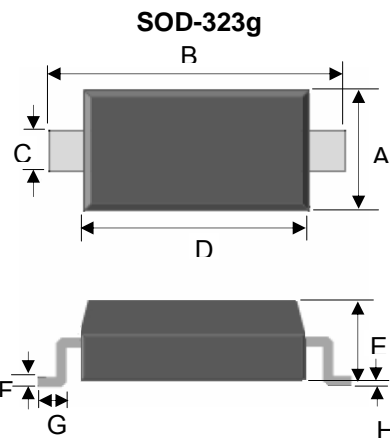
##### Maximum Ratings

Type Number	Symbol	Value	Units
Peak Pulse Power (tp=8/20 $\mu\text{s}$ waveform)	$P_{PP}$	500	w
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	$V_{ESD}$	$\pm 15$ $\pm 8$	kV
Junction Temperature Range	$T_J$   $T_{STG}$	-55to+150	$^\circ\text{C}$

##### Electrical Characteristics

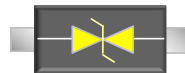
Type Number	Symbol	Min	Max	Units
Reverse Stand-Off Voltage	$V_{RWM}$	-	24	V
Reverse Breakdown Voltage	$V_{(BR)}$	26.7	-	V
Reverse Leakage Current	$I_R$	-	1	$\mu\text{A}$
Clamping Voltage	$V_C$	$I_{PP}= 5\text{A}$	40	V
		$I_{PP}= 17\text{A}$	52	
Junction Capacitance	$C_j$	50 (Typ.)		pF

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

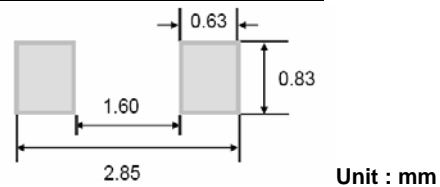


Dimensions(mm)	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	1.20	1.40	0.047	0.055
B	2.50	2.70	0.098	0.106
C	.025	0.35	0.010	0.014
D	1.60	1.80	0.063	0.071
E	0.80	0.90	0.031	0.035
F	0.08	0.15	0.003	0.006
G	0.19REF		0.475REF	

#### Pin Configuration



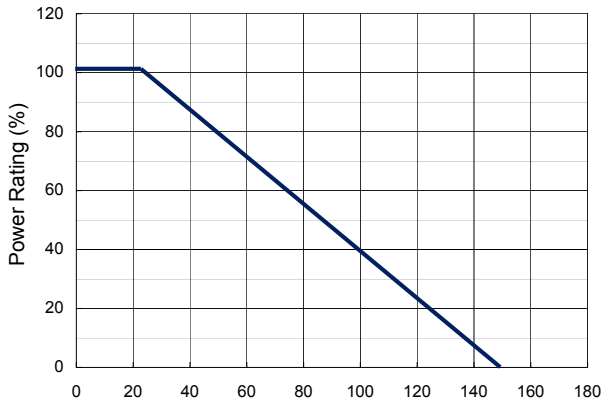
#### Suggested PAD Layout



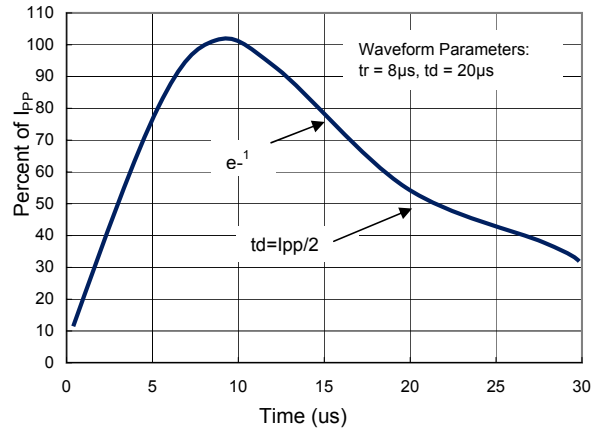
**Small Signal Diode**

**Rating and Characteristic Curves**

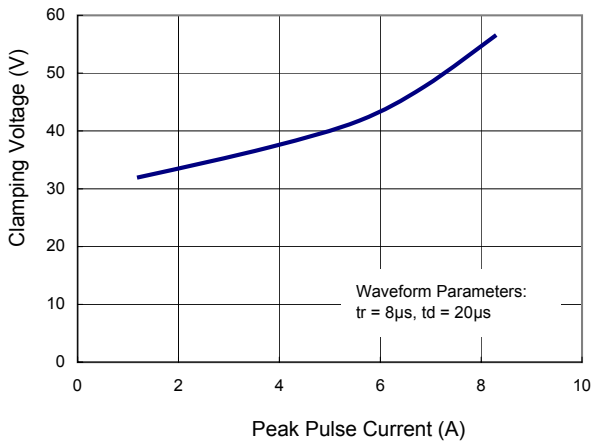
**FIG 1. Admissible Power Dissipation Curve**



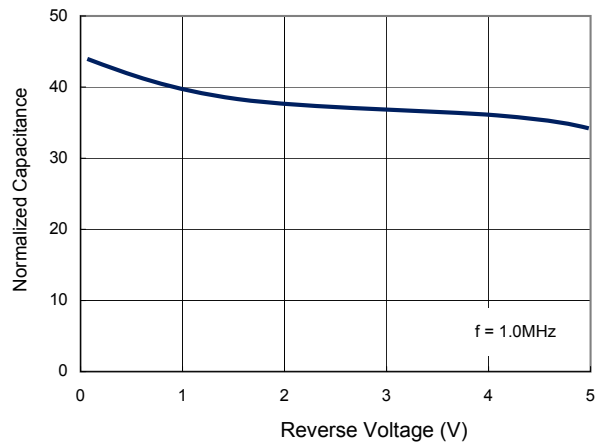
**FIG 2. Pulse Waveform**



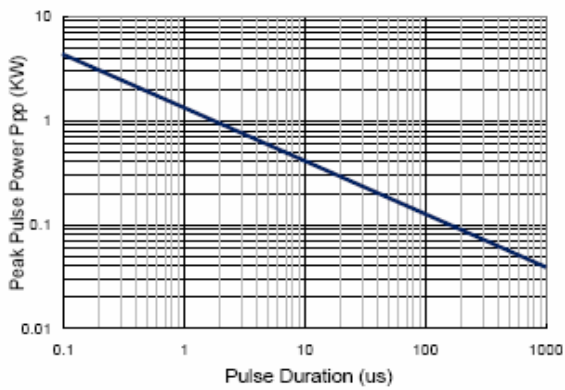
**FIG 3. Clamping Voltage vs. Peak Pulse Current**



**FIG 4. Typical Junction Capacitance**



**FIG 5. Non-Repetitive Peak Pulse Power vs. Pulse Time**



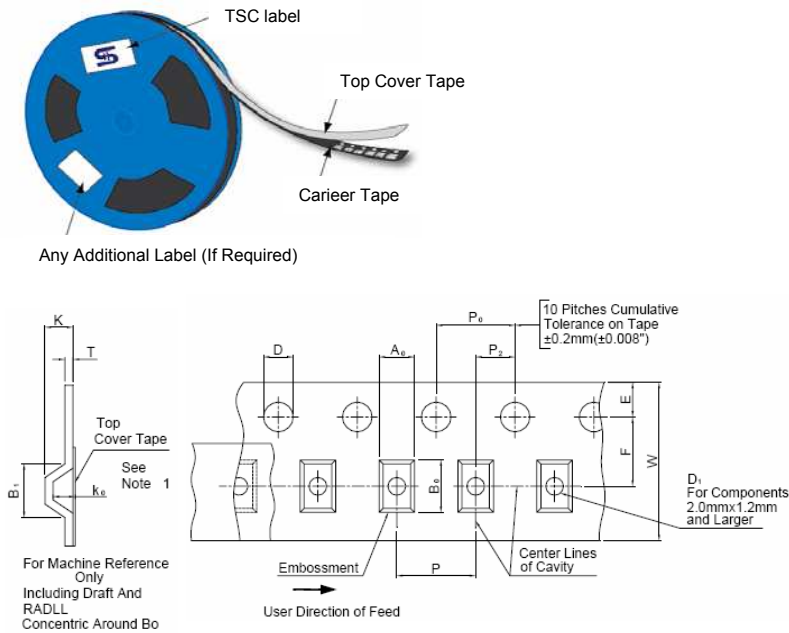
**Small Signal Diode**

**Applications Information**

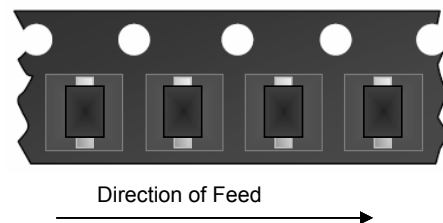
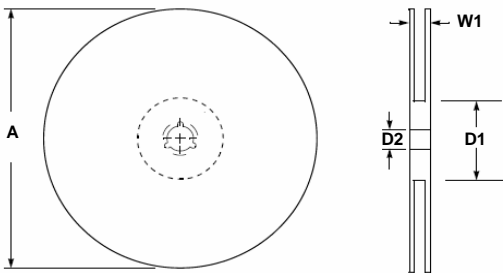
- ✧ Designed to protect one data, I/O, or power supply line.
- ✧ Designed to protect sensitive electronics from damage or latch-up due to ESD
- ✧ Designed to replace multilayer varistors (MLVs) in portable applications
- ✧ Features large crosssectional area junctions for conducting high transient currents
- ✧ 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.
  - ✧ Never run critical signals near board edges.
  - ✧ Use ground planes whenever possible.



Item	Symbol	Dimension(mm)
Carrier depth	K	1.22 Max.
Sprocket hole	D	1.50 +0.10
Reel outside diameter	A	180 ± 1
Reel inner diameter	D1	50 Min.
Feed hole width	D2	13.0 ± 0.5
Sprocket hole position	E	1.75 ±0.10
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: A0, B0, and K0 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 B1 exceeds 4.2 mm(0.165") for 8 mm embossed tape, the tape may not feed through all tape feeders.