

Small Signal Diode



Features

- ◇ Meet IEC61000-4-2 (ESD) ±15kV (air), ±8kV (contact)
- ◇ Meet IEC61000-4-4 (EFT) rating. 40A (5/50ns)
- ◇ Meet IEC61000-4-5 (Lightning) rating. 5A (8/20μs)
- ◇ Protects four Bi-directional I/O lines
- ◇ Working Voltage : 5V
- ◇ Pb free version, RoHS compliant, and Halogen free

Mechanical Data

- ◇ Case :SOT-25 standard package, molded plastic
- ◇ Terminal: Matte tin plated, lead free.
- ◇ High temperature soldering guaranteed: 260°C/10s
- ◇ Weight : 14mg (approximately)
- ◇ Marking Code : S5V

Applications

- ◇ Cell Phone Handsets and Accessories
- ◇ Microprocessor Based Equipment
- ◇ Personal Digital Assistants (PDA's)
- ◇ Notebooks, Desktops, and Servers
- ◇ Set-Top Box / MP3 Players
- ◇ Cordless Phones

Ordering Information

Part No.	Package	Packing	Packing Code	Marking
TESDT5V0A	SOT-23-5	3K / 7" Reel	RFG	S5V

Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.

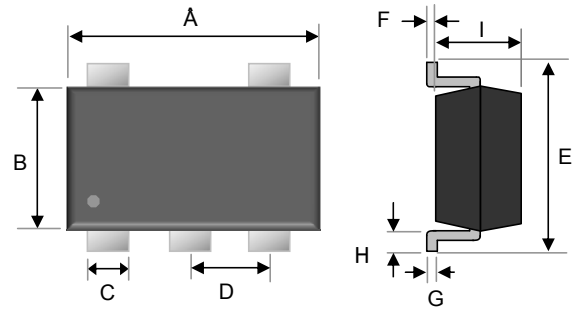
Maximum Ratings

Type Number	Symbol	Value	Units
Peak Pulse Power (tp=8/20μs waveform)	P _{PP}	100	W
Peak Pulse Current (tp = 8/20μs)	I _{PP}	2.5	A
ESD per IEC 61000-4-2 (Air)	V _{ESD}	±15	KV
ESD per IEC 61000-4-2 (Contact)		± 8	
Junction Temperature Range	T _J	-55 to + 150	°C
Storage Temperature Range	T _{STG}	-55 to + 150	°C

Electrical Characteristics

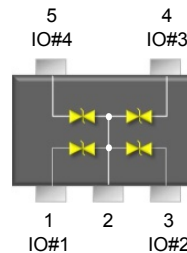
Type Number	Symbol	Min	Max	Units
Reverse Stand-Off Voltage	V _{RWM}	-	5	V
Reverse Breakdown Voltag	V _(BR)	6.5	-	V
Reverse Leakage Current	I _R	-	1	uA
Clamping Voltage	V _C	I _{pp} = 1A	9.8	V
		I _{pp} = 2.5A	15	
Junction Capacitance	C _J	20 (Typ.)		pF

SOT-23-5



Dimensions	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	2.70	3.10	0.106	0.122
B	1.50	1.80	0.059	0.071
C	0.35	0.50	0.014	0.020
D	0.95 _{REF}		0.037 _{REF}	
E	2.60	3.00	0.102	0.118
F	--	0.10	--	0.004
G	0.1 (Typical)		0.004 (Typical)	
H	0.37	--	0.015	--
I	1.00	1.30	0.039	0.051

Pin Configuration



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Rating and Characteristic Curves

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

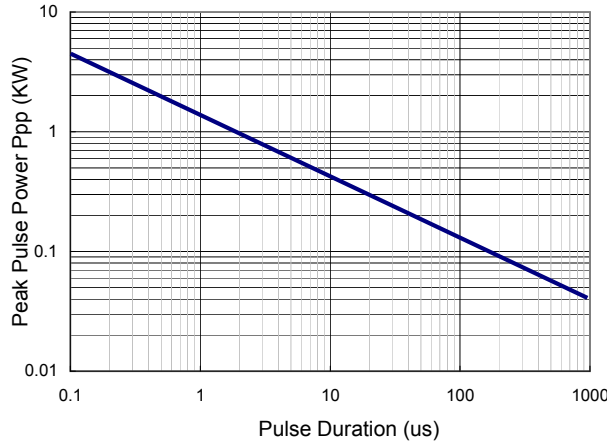


FIG 2 Pulse Waveform

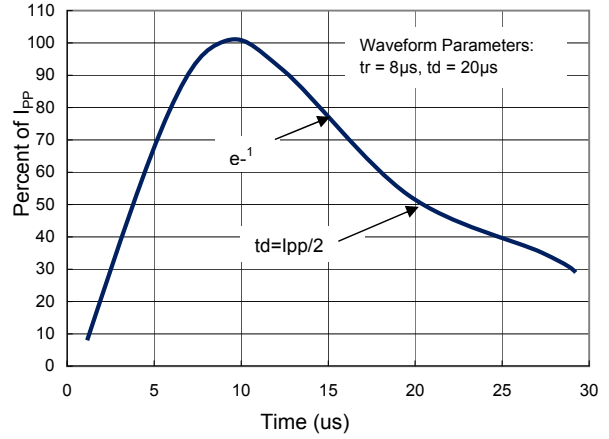


FIG 3 Admissible Power Dissipation Curve

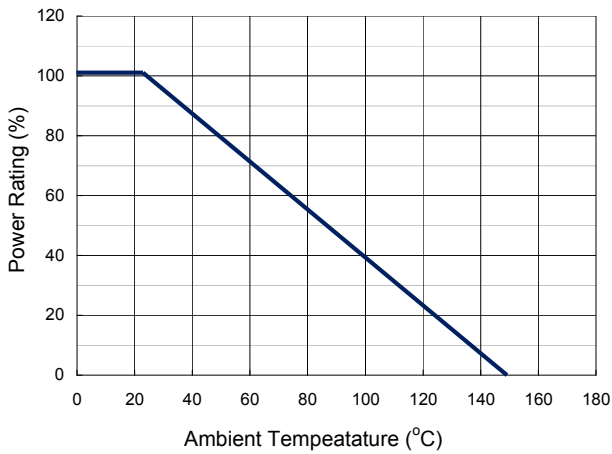


FIG 4 Typical Junction Capacitance

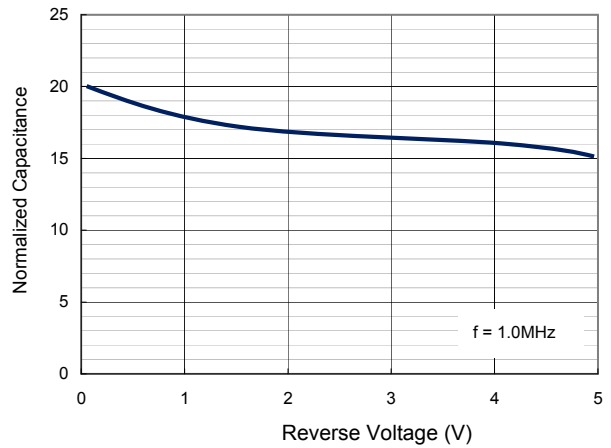
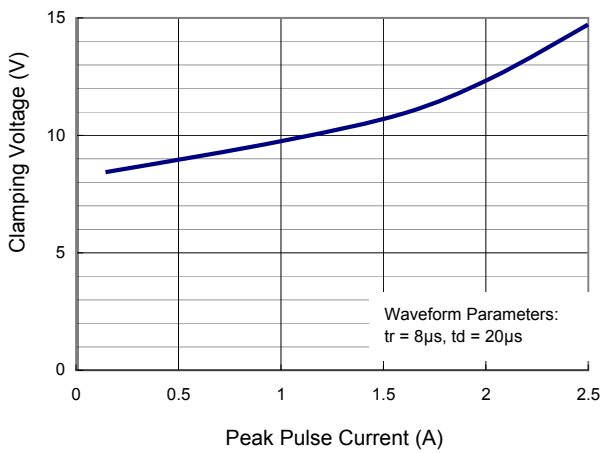


FIG 5 Clamping Voltage vs. Peak Pulse Current

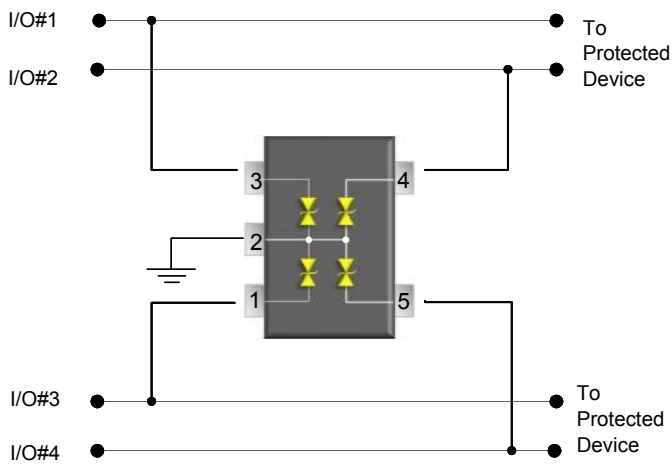


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Applications Information

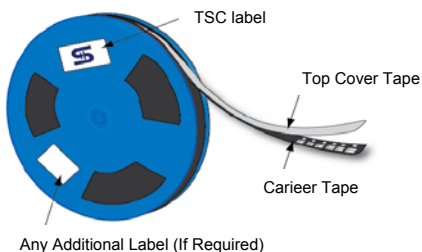
- ◇ Designed to protect data line interfaces
- ◇ Designed to protect four data lines from transient over-voltages by clamping them to a fixed reference
- ◇ Designed to protect sensitive components which are connected to data and transmission lines from overvoltage caused by electrostatic discharge (ESD), electrical fast transients (EFT), and Surge.
- ◇ The internal TVS diode prevents over-voltage on the power line, protecting any downstream components

Circuit Board Layout Recommendations

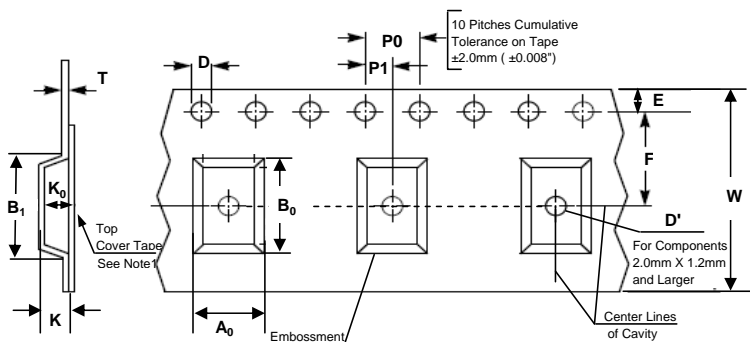


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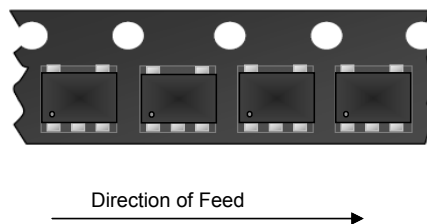
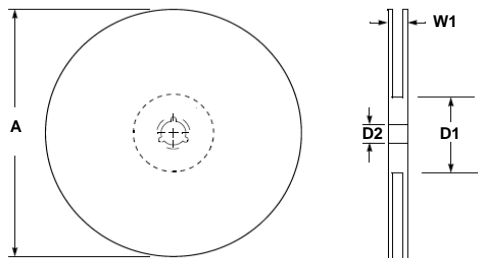
Carrier & Reel specification



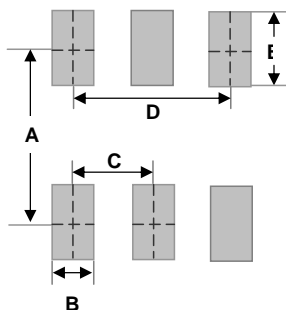
Item	Symbol	Dimension(mm)
Carrier depth	K	1.22 Max.
Sprocket hole	D	1.50 +0.10
Reel outside diameter	A	180 ± 1
Reel inner diameter	D1	50 Min.
Feed hole width	D2	13.0 ± 0.5
Sprocket hole position	E	1.75 ± 0.10
Sprocket hole pitch	P0	4.00 ± 0.10
Embossment center	P1	2.00 ± 0.10
Overall tape thickness	T	0.6 Max.
Tape width	W	8.30 Max.
Reel width	W1	14.4 Max.



For Machine Reference Only
Including Draft and RADLL
Concentric Around B₀



Suggested PAD Layout



Dimensions	Unit (inch)	Unit (mm)
A	0.094	2.40
B	0.028	0.70
C	0.037	0.95
D	0.075	1.90
E	0.039	1.00

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.

Note 3: The suggested land pattern dimensions have been provided for reference only, as actual pad layouts may vary depending on application.