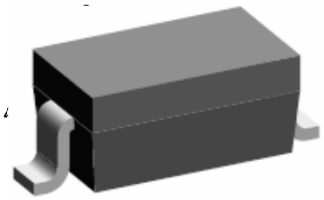
Small Signal Product

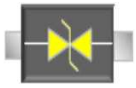
Bi-directional TVS Diode Array

FEATURES

- Meet IEC61000-4-2 (ESD) ±15kV (air), ±8kV (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 Halogn free



SOD-323



MECHANICAL DATA

- Case: SOD-323 small outline plastic package
- High temperature soldering guaranteed: 260°C/10s
- Weight: 48±5 mg (approximately)
- Terminal : Matte tin plated, lead free, solderable per MIL-STD-202, method 208 guaranteed
- Mounting position : Any

APPLICATION

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

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T_A=25℃ unless otherwise noted)

PARAMETER		SYMBOL	VALUE	UNIT
IEC61000-4-2 ESD Voltage	Air model	V_{ESD} (Note 1)	± 15	kV
	Contact Model		± 8	
JESD22-A114-B ESD Voltage	Per Human Body Model		-	
ESD Voltage	Machine Model		-	
Peak Pulse Power		P_{PP} (Note 2)	500	W
Junction Temperature		T_J	150	°C
Storage Temperature Range		T_{STG}	-55 ~ 150	°C

Note 1: Devide stressed with ten repetitive ESD pulses, per channel(I/O to GND)

PARAMETER		SYMBOL	VALUE		UNIT
			MIN	MAX	
Reverse Stand-Off Voltage		V_{RWM} (Note 1)		24	V
Reverse Breakdown Voltage	I_R = 1 mA	$V_{(BR)}$	26.7		V
Reverse Leakage Current	V_R = 24 V	I_R		1	μA
Clamping Voltage	I_{PP} = 5 A	V_C (Note 2)		40	V
	I_{PP} = 17 A			52	
Junction Capacitance	V_R = 0 V , f = 1.0 MHz	C_J	50 (Typ.)		pF

Note 1: Other voltages available upon request

Note 2: Non-repetitive currect pulse 8/20μs exponential decay waveform according to IEC61000-4-5

Note 3: Per channel(I/O to GND unless otherwise specified)

RATINGS AND CHARACTERISTICS CURVES

(TA=25℃ unless otherwise noted)

Fig. 1 Admissible Power Dissipation Curve

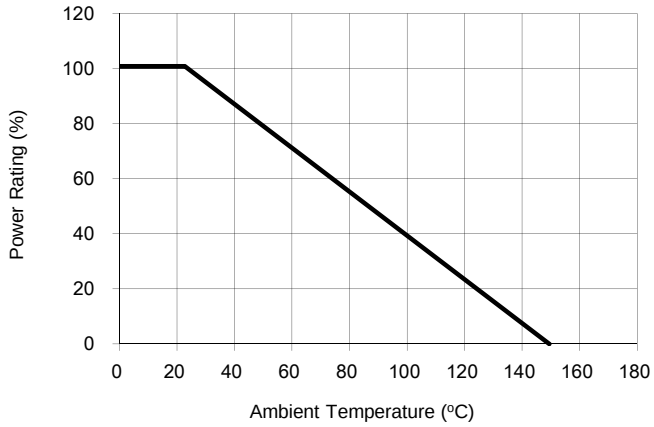


Fig. 2 Pulse Waveform

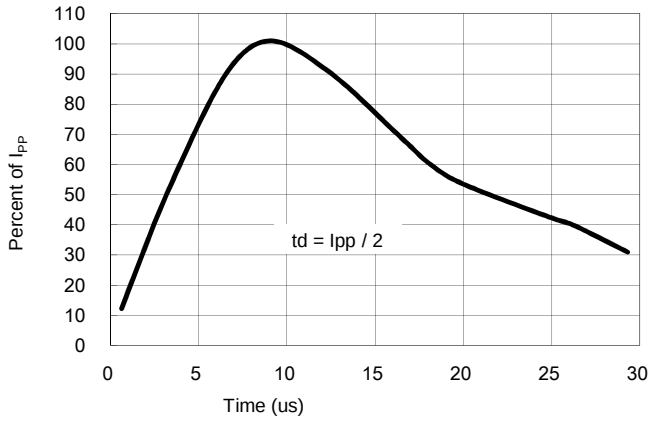


Fig. 3 Clamping Voltage VS. Peak Pulse Current

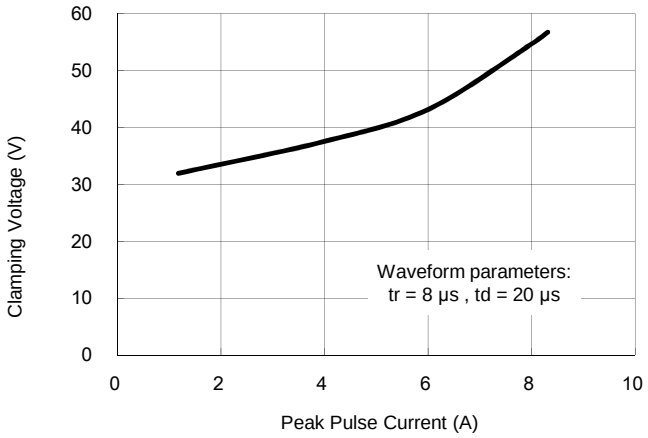


Fig. 4 Typical Junction Capacitance

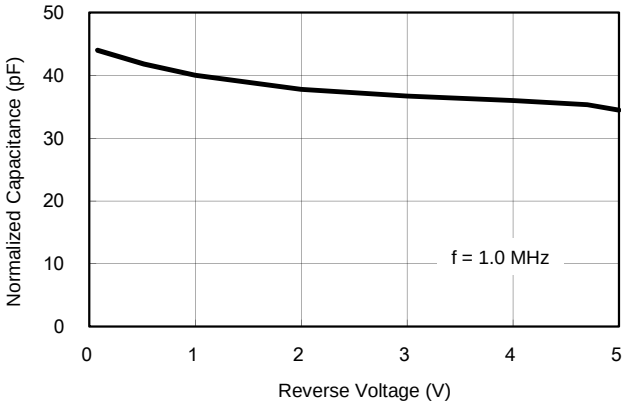
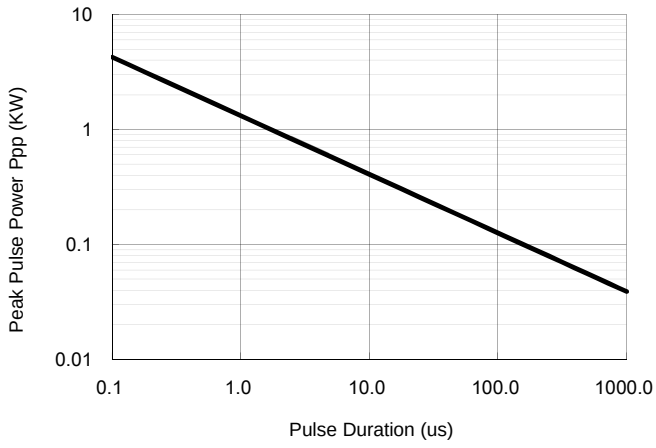


Fig. 5 Non-Repetitive Peak Pulse Powe VS. Pulse Time



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ORDERING INFORMATION						
PART NO.	**MANUFACTURE CODE (Note 1)**	**PACKING CODE**	**GREEN COMPOUND CODE**	**PACKAGE**	**PACKING**	**MARKING**
TESDC24V		RR	G	SOD-323	3K / 7" Reel	2H

Note 1: Indicator of manufacturing site for manufacture special control, if empty means no special control requirement

EXAMPLE					
PREFERRED P/N	**PART NO.**	**MANUFACTURE CODE**	**PACKING CODE**	**GREEN COMPOUND CODE**	**DESCRIPTION**
TESDC24V RRG	TESDC24V		RR	G	Green compound
TESDC24V-E0 RRG	TESDC24V	E0	RR	G	Green compound

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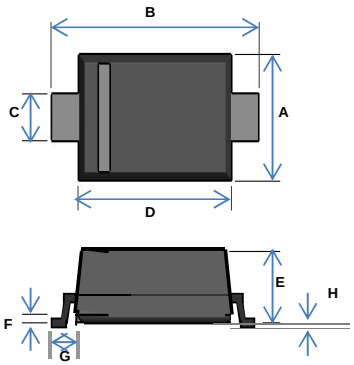
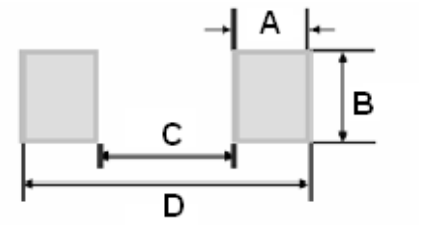
DIMENSIONS



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	1.15	1.40	0.045	0.055
B	2.30	2.70	0.091	0.106
C	0.25	0.45	0.010	0.018
D	1.60	1.80	0.063	0.071
E	0.80	1.00	0.031	0.039
F	0.05	0.17	0.002	0.007
G	0.475 REF		0.19 REF	
H	-	0.10	-	0.004

SUGGESTED PAD LAYOUT



DIM.	Unit (mm)	Unit (inch)
	Typ.	Typ.
A	0.63	0.025
B	0.83	0.033
C	1.60	0.063
D	2.85	0.112

APPLICATION INFROMATION

- 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 cross-sectional 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

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