

Semiconductor TVS Diode

Features

- 60 Watts Peak Pulse Power per Line ($t_p=8/20\mu s$)
- Protects Four Uidirectional I/O Lines
- Low Clamping Voltage
- Working Voltages : 3.3V
- Low Leakage Current
- IEC61000-4-2 (ESD) $\pm 20kV$ (air), $\pm 20kV$ (contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)
- IEC61000-4-5 (LIGHTING) 11A (8/20 μs)

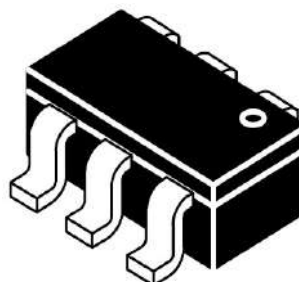
Applications

- Ethernet Interface
- Switchin Systems
- Access Equipment
- Central Office Equipment
- Customer Premise Equipment
- Microcontroller Input Protection

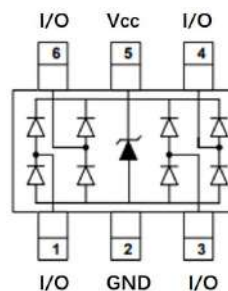
Mechanical Characteristics

- JEDEC SOT-26 Package
- Molding Compound Flammability Rating : UL 94V-O
- Quantity Per Reel : 3,000pcs
- Reel Size : 7 inch
- Device Marking: S3R

Dimensions SOT-26



Pin Configuration



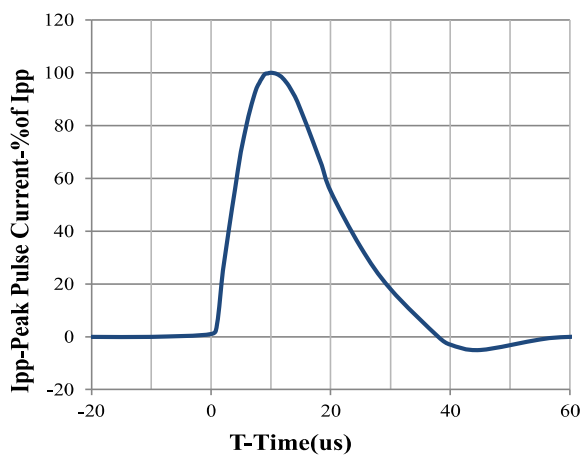
Absolute Maximum Ratings ($T_{amb}=25^{\circ}C$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	P _{pp}	70	W
ESD per IEC 61000-4-2 (Air)	V _{ESD}	± 20	Kv
ESD per IEC 61000-4-2 (Contact)		± 20	
Operating Temperature Range	T _J	-55 to +125	$^{\circ}C$
Storage Temperature Range	T _{STJ}	-55 to +150	$^{\circ}C$

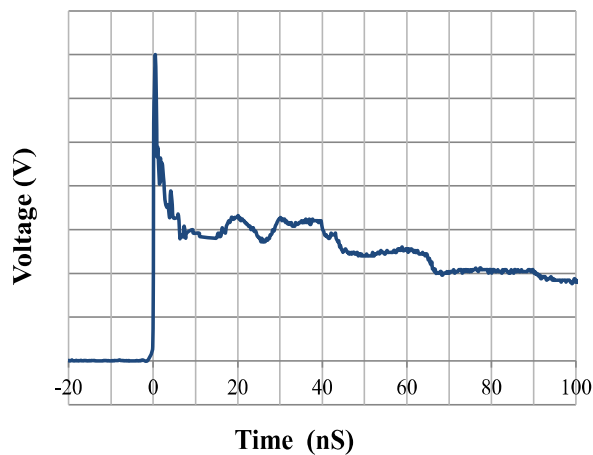
Electrical Characteristics (TA=25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V _{RWM}				3.3	V
Breakdown Voltage	V _{BR}	I _T = 1mA, I/O-GND	4	4.7	6	V
Breakdown Voltage	V _{BR}	I _T = 1mA, I/O-I/O	4.5	5.6	7	V
Breakdown Voltage	V _{BR}	I _T = 1mA, VCC-GND	3.5	4	5	V
Reverse Leakage Current	I _R	V _{RWM} = 3.3V		<5	100	nA
Clamping Voltage	V _C	I _{PP} = 1A (8 / 20μs pulse), I/O-GND		5.8	10	V
Clamping Voltage	V _C	I _{PP} = 5A (8 / 20μs pulse), I/O-GND		9	14	V
Clamping Voltage	V _C	I _{PP} = 1A (8 / 20μs pulse), I/O-I/O		7.5	12	V
Clamping Voltage	V _C	I _{PP} = 5A (8 / 20μs pulse), I/O-I/O		16	20	V
Clamping Voltage	V _C	I _{PP} = 1A (8 / 20μs pulse), VCC-GND		4.2	6	V
Clamping Voltage	V _C	I _{PP} = 11A (8 / 20μs pulse), VCC-GND		6	10	V
Junction Capacitance	C _J	V _R = 0V, f = 1MHz, I/O-GND		0.6	0.8	pF
Junction Capacitance	C _J	V _R = 0V, f = 1MHz, I/O-I/O		0.3	0.4	pF
Junction Capacitance	C _J	V _R = 0V, f = 1MHz, VCC-GND		20		pF

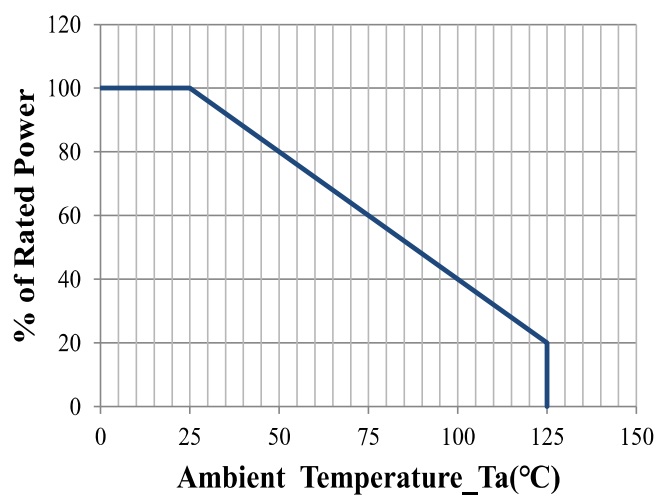
Typical Performance Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise Specified)



8 / 20us Pulse Waveform

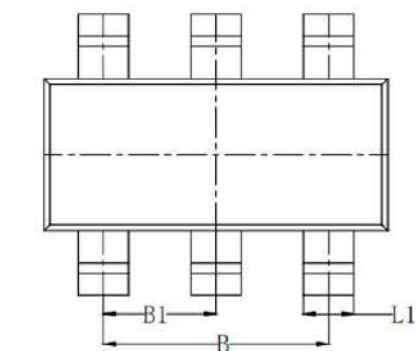


IEC61000-4-2 Pulse Waveform

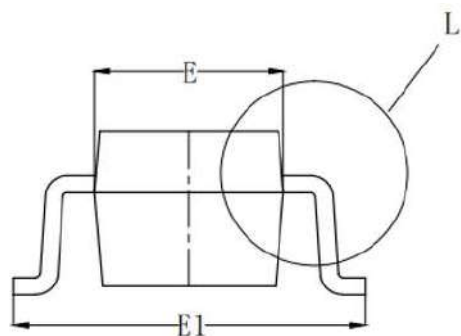


Power Derating Curve

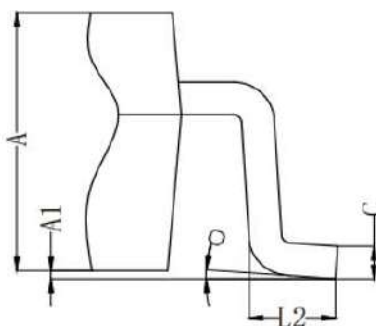
SOT-26 Package Outline Drawing



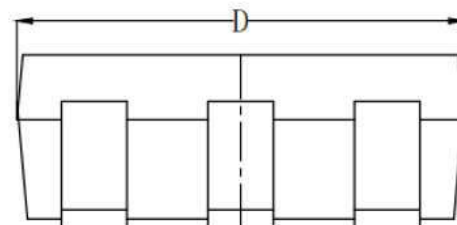
SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	Min	Typ	Max	Min	Typ	Max
A	1.05	1.10	1.15	0.042	0.044	0.046
A1	0.00	0.05	0.10	0.000	0.002	0.004
B	1.90 TYP			0.076 TYP		
B1	0.95 TYP			0.038 TYP		
C	0.10	0.15	0.20	0.004	0.006	0.008
D	2.82	2.92	3.02	0.113	0.117	0.121
E	1.50	1.60	1.70	0.060	0.064	0.068
E1	2.65	2.80	2.95	0.106	0.112	0.118
L1	0.30	0.40	0.50	0.012	0.016	0.020
L2	0.30	0.45	0.60	0.012	0.018	0.024
Ø	0°	4°	8°	0°	4°	8°



SIDE VIEW

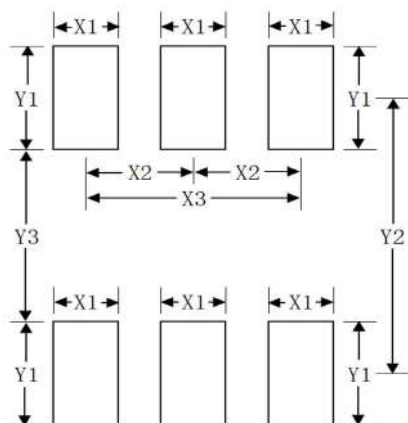


SIDE VIEW



SIDE VIEW

Suggested Land Pattern



SYM	DIMENSIONS	
	MILLIMETER	INCHES
X1	0.60	0.024
X2	0.95	0.038
X3	1.90	0.076
Y1	1.00	0.040
Y2	2.40	0.096
Y3	1.40	0.056