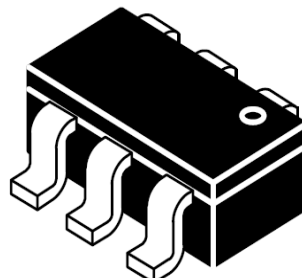


Semiconductor TVS Diode

Features

- Ultra low leakage: nA level
- Operating voltage: 3.3V
- Low Clamping Voltage
- Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
Air discharge: $\pm 30\text{kV}$
Contact discharge: 30kV
 - IEC61000-4-4 (EFT) 40A (5/50ns)
 - IEC61000-4-5 (Lightning) 24A (8/20 μs)
- RoHS Compliant

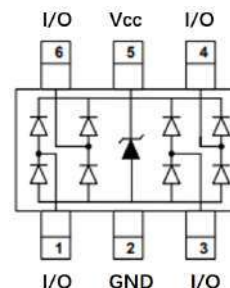
Dimensions SOT-26



Applications

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

Pin Configuration



Mechanical Characteristics

- JEDEC SOT-26 Package
- Molding Compound Flammability Rating : UL 94V-O
- Quantity Per Reel : 3,000pcs
- Reel Size : 7 inch
- Device Marking: E1S

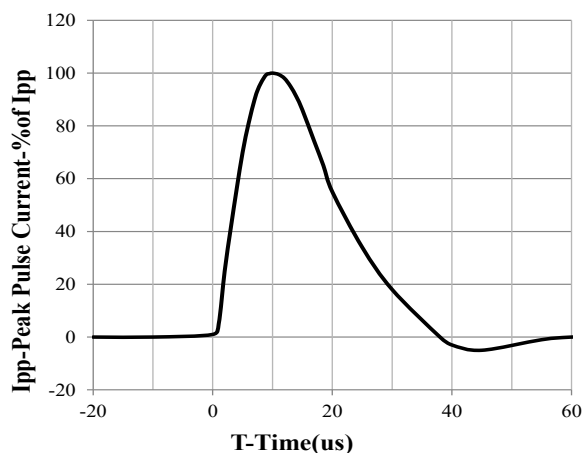
Absolute Maximum Ratings (Tamb=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	Ppp	480	W
ESD per IEC 61000-4-2 (Air)	V _{ESD}	± 30	Kv
ESD per IEC 61000-4-2 (Contact)		± 30	
Operating Temperature Range	T _J	-40to +125	°C
Storage Temperature Range	T _{STJ}	-55 to +150	°C

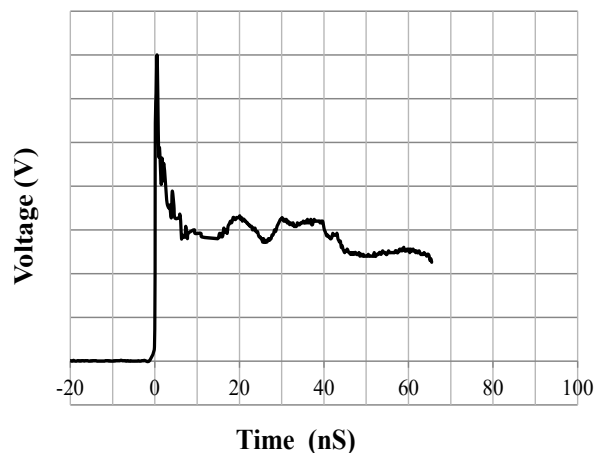
Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}				3.3	V
Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$, I/O-GND	4.1	5.5	6.5	V
Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$, I/O-I/O	5	6.3	7.5	V
Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$, VCC-GND	4	4.8	6	V
Reverse Leakage Current	I_R	$V_{RWM} = 3.3\text{V}$			100	nA
Clamping Voltage	V_C	$I_{PP} = 1\text{A}$ (8 / 20 μs pulse), I/O-GND		6.2	8	V
Clamping Voltage	V_C	$I_{PP} = 20\text{A}$ (8 / 20 μs pulse), I/O-GND		10.4	16	V
Clamping Voltage	V_C	$I_{PP} = 24\text{A}$ (8 / 20 μs pulse), I/O-GND		11	20	V
Clamping Voltage	V_C	$I_{PP} = 1\text{A}$ (8 / 20 μs pulse), I/O-I/O		8.4	10	V
Clamping Voltage	V_C	$I_{PP} = 20\text{A}$ (8 / 20 μs pulse), I/O-I/O		19	28	V
Clamping Voltage	V_C	$I_{PP} = 24\text{A}$ (8 / 20 μs pulse), I/O-I/O		24	35	V
Clamping Voltage	V_C	$I_{PP} = 1\text{A}$ (8 / 20 μs pulse), VCC-GND		5.3	6.5	V
Clamping Voltage	V_C	$I_{PP} = 20\text{A}$ (8 / 20 μs pulse), VCC-GND		7.5	11	V
Clamping Voltage	V_C	$I_{PP} = 40\text{A}$ (8 / 20 μs pulse), VCC-GND		10	15	V
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$, I/O-GND		2.5	3.5	pF
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$, I/O-I/O		1.5	2.5	pF
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$, VCC-GND		880	1500	pF

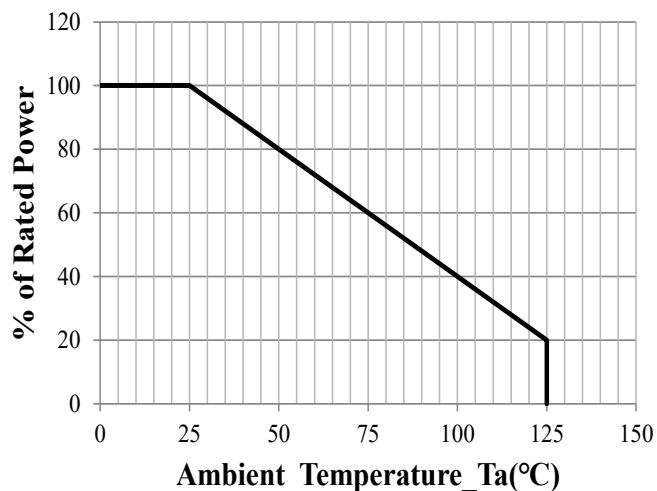
Typical Performance Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise Specified)



8 / 20us Pulse Waveform

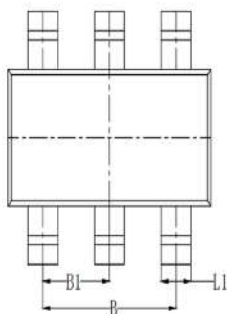


IEC61000-4-2 Pulse Waveform



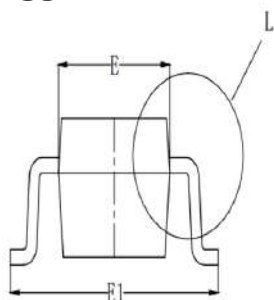
Power Derating Curve

SOT-26 Package Outline Drawing

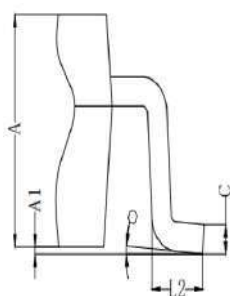


SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	Min	Typ	Max	Min	Typ	Max
A	1.05	1.10	1.15	0.0413	0.0433	0.0453
A1	0.00	0.05	0.10	0.0000	0.0020	0.0039
B	1.90 TYP			0.0748 TYP		
B1	0.95 TYP			0.0374 TYP		
C	0.10	0.15	0.20	0.0039	0.0059	0.0079
D	2.82	2.92	3.02	0.1110	0.1150	0.1189
E	1.50	1.60	1.70	0.0591	0.0630	0.0669
E1	2.65	2.80	2.95	0.1043	0.1102	0.1161
L1	0.30	0.40	0.50	0.0118	0.0157	0.0197
L2	0.30	0.45	0.60	0.0118	0.0177	0.0236
O	0°	4°	8°	0°	4°	8°

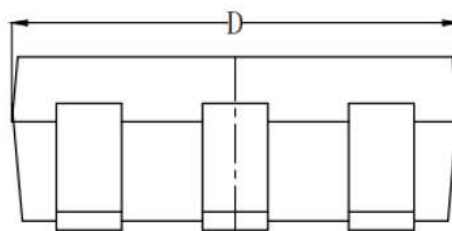
Suggested Land Pattern



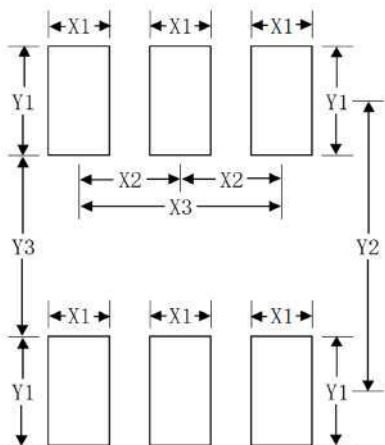
SIDE VIEW



SIDE VIEW



SIDE VIEW



SYM	DIMENSIONS	
	MILLIMETER	INCHES
X1	0.60	0.024
X2	0.95	0.037
X3	1.90	0.075
Y1	1.00	0.039
Y2	2.40	0.094
Y3	1.40	0.055