SM8 Transient Voltage Suppressor Diode Series

General Information

The SM8 series is designed to protect voltage sensitive components from high voltage, high energy transients. They have excellent clamping capability, high surge capability, low zener impedance and fast response time. The SM8 series is supplied in YINT Semiconductor's exclusive, cost-effective, highly reliable and is ideally suited for use in communication systems, automotive, numerical controls , process controls, medical equipment, business machines, power supplies and many other industrial/consumer Applications.

Molded plastic
glass passivated junction.

Features

- Case: DO-218AB
- For surface mounted applications in order to optimize board space.
- Polarity:Color band denoted positive end (cathode) except Bidirectional.
- Typical failure mode is short from over-specified voltage or current
- High Temperature soldering:260°C/10 seconds at terminals.
- Terminal:Solder plated,solderable per MIL-STD-750,Method 2026.

Applications

TVS devices are ideal for the protection of I/O Interfaces, V_{CC} bus and other vulnerable circuits used in Telecom, Computer, Industrial and Consumer electronic applications.

Electrical Characteristics (@ TA = 25° C Unless Otherwise Noted)

Parameter	Symbol	Value	Unit
Minimum Peak Pulse Power Dissipation (T = 1 ms) (note1 note 2)	P_{PK}	6600	Watts
Peak Forward Surge Current 8.3 ms Single Half Sine Wave Superimposed on Rated Load (JEDEC Method) (Note 3)	I_{FSM}	700	Amps
Steady State Power Dissipation @ TL = 75 °C	$P_{M(AV)}$	8.0	Watts
Operating Temperature Range	T_J	-55 to +150	°C
Storage Temperature Range	T_{STG}	-55 to +175	°C

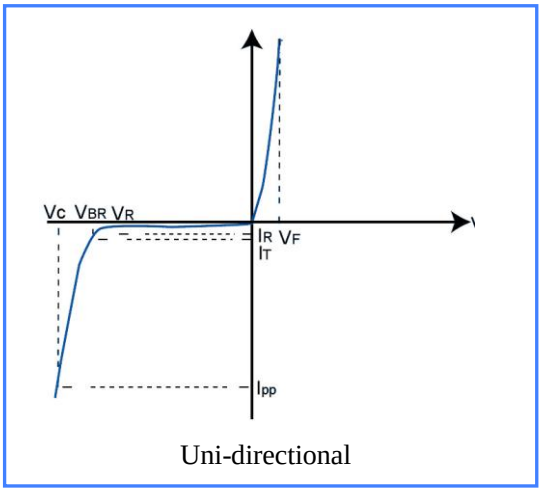
NOTES:

1. Non-repetitive current pulse, per Pulse Waveform graph and derated above T_A = 25 °C per Pulse Derating Curve.
2. Thermal Resistance Junction to Lead.
3. 8.3 ms Single Half-Sine Wave duty cycle = 4 pulses maximum per minute (unidirectional units only).

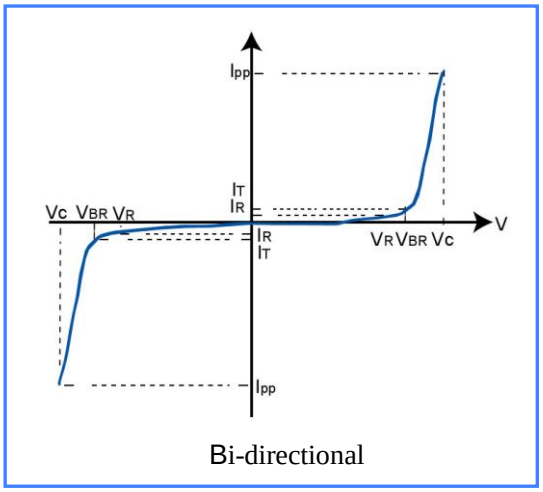
Electrical Characteristics (@ TA = 25° C Unless Otherwise Noted)

Part Number	Reverse Stand off Voltage V_R(Volts)	Breakdown Voltage V_{BR} (Volts)@I_T		Test Current I_T(mA)	Maximun Reverse Leakage I_R @ V_R(μA)	Maximum Peak Pulse Current Ipp(A) 10/1000uS	Maximum Clamping Voltage V_C @I_{pp}(V)
		Min .V	Max .V				
SM8S12	12	13.3	16.3	5.0	10	300	22
SM8S12A	12	13.3	14.7	5.0	10	332	19.9
SM8S13	13	14.4	17.6	5.0	10	227	23.8
SM8S13A	13	14.4	15.9	5.0	10	307	21.5
SM8S14	14	15.6	19.1	5.0	10	256	25.6
SM8S14A	14	15.6	17.2	5.0	10	284	23.2
SM8S15	15	16.7	20.4	5.0	10	245	26.9
SM8S15A	15	16.7	18.5	5.0	10	270	24.4
SM8S16	16	17.8	21.8	5.0	10	229	28.8
SM8S16A	16	17.8	19.7	5.0	10	254	26.0
SM8S17	17	18.9	23.1	5.0	10	216	30.5
SM8S17A	17	18.9	20.9	5.0	10	239	27.6
SM8S18	18	20.0	24.4	5.0	10	205	32.2
SM8S18A	18	20.0	22.1	5.0	10	226	29.2
SM8S20	20	22.2	27.1	5.0	10	184	35.8
SM8S20A	20	22.2	24.5	5.0	10	204	32.4
SM8S22	22	24.4	29.8	5.0	10	168	39.4
SM8S22A	22	24.4	26.9	5.0	10	186	35.5
SM8S24	24	26.7	32.6	5.0	10	153	43.0
SM8S24A	24	26.7	29.6	5.0	10	170	38.9
SM8S26	26	28.9	35.3	5.0	10	142	46.6
SM8S26A	26	28.9	31.9	5.0	10	157	42.1
SM8S28	28	31.1	38.0	5.0	10	132	50.1
SM8S28A	28	31.1	34.4	5.0	10	145	45.4
SM8S30	30	33.3	40.7	5.0	10	123	53.5
SM8S30A	30	33.3	36.8	5.0	10	136	48.4
SM8S33	33	36.7	44.9	5.0	10	112	59
SM8S33A	33	36.7	40.6	5.0	10	120	53
SM8S36	36	40.0	48.9	5.0	10	103	64.3
SM8S36A	36	40.0	44.2	5.0	10	114	58.1
SM8S40	40	44.4	54.3	5.0	10	92.4	71.4
SM8S40A	40	44.4	49.1	5.0	10	102	64.5
SM8S43	43	47.8	58.4	5.0	10	86	76.7
SM8S43A	43	47.8	52.8	5.0	10	95.1	69.4

I-V Curve Characteristics



Uni-directional

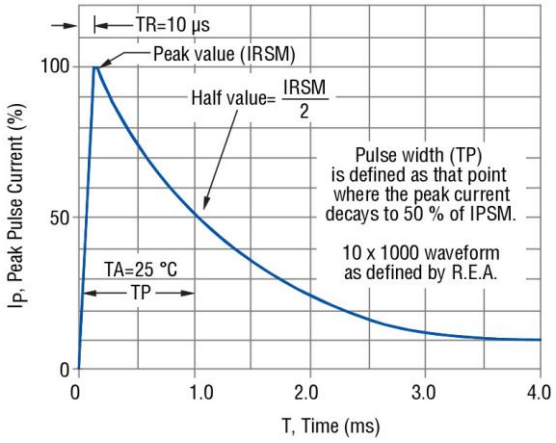


Bi-directional

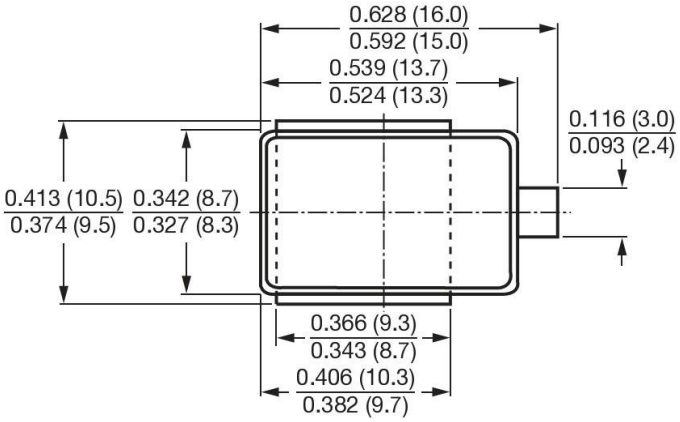
Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Maximum Reverse Leakage Current @V_{RWM}
V_{BR}	Breakdown Voltage @ I_T(Test Current)

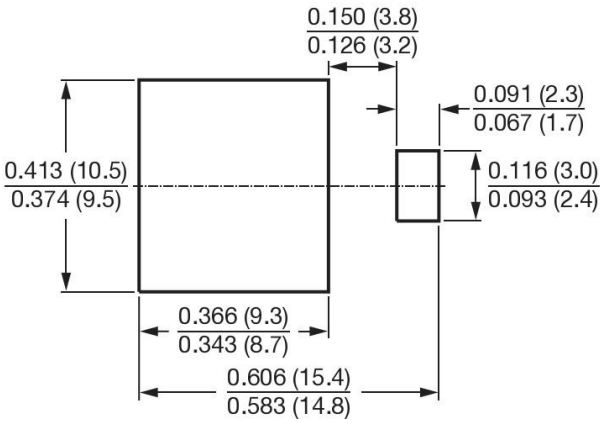
Rating & Characteristic Curves

Figure 1- Pulse Waveform

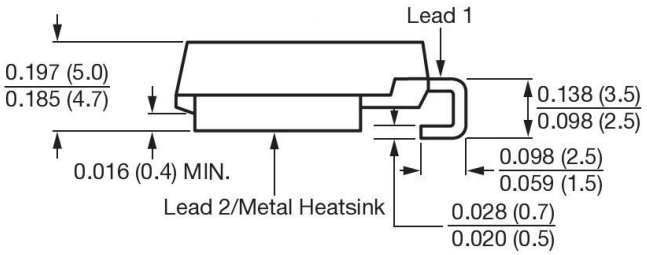


PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





Mount Pad Layout



Disclaimer

Specifications are subject to change without notice.

The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.

Users should verify actual device performance in their specific applications.