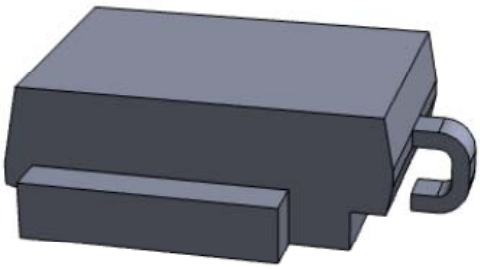
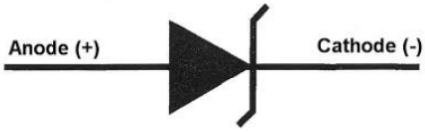
8.0M Series

Transient Voltage Suppressors family



DO-218



Features

- High current capability
- Low Forward Voltage Drop
- Low reverse current
- Low thermal resistance
- Excellent high temperature stability
- Low power loss and high efficiency
- High forward surge capability
- Meets ISO 16750-2 load dump test (varied by test condition)
- Meets MSL level 1, per J-STD-020, LF maximum peak of 245 °C

Primary Characteristics

V_{WM}	10 V to 43 V
V_{BR}	11.1 V to 52.8 V
P_{PPM} (10 x 1000 uS)	6600 W
P_{PPM} (10 x 10000 uS)	5200 W
P_D	8 W
I_{FSM}	700 A
Polarity	Uni-directional
Diode variation	Single

Mechanical Date

- Case: DO-218 outline plastic package
- Terminals: Matte tin plated, solderable per MIL-STD-750, Method 2026, J-STD-002 and JESD 22-B102
- Molding Compound Flammability Rating:UL94V-0
- HE3 suffix meets JESD 201 class 2 whisker test
- Polarity: Heatsink is anode

Application

- High peak power
- High-temperature
- Clamping diode
- Load switching and lighting

Ordering Information

Part No.	Remark	Package	Packing
8.0M Series	General	DO-218	750 / Tape & Reel
8.0M Series-H	Halogen Free		
8.0M Series-Q	AEC-Q101 qualified		

Maximum Ratings (TA=25°C unless otherwise noted)

Parameter		Symbol	Value	Units
Peak pulse power dissipation	10/1000 μs waveform	P_{PPM}	6600	W
	10/10000 μs waveform		5200	
Power dissipation on infinite heatsink at TC = 25 °C		P_D	8	W
Peak forward surge current 8.3 ms single half sine-wave		I_{FSM}	700	A
Typical thermal resistance, junction to case		$R_{\theta JC}$	0.90	°C/W
Operating junction and storage temperature range		T_J, T_{STG}	-55 to +175	°C

8.0M Series

Transient Voltage Suppressors family

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

Part Number	Breakdown Voltage V_{BR}(V)		Test Current I_T(mA)	Stand-OFF Voltage V_{WM}(V)	Maximum Reverse Leakage at V_{WM} I_D (uA)	Maximum Leakage at V_{WM} T_J = 175°C I_D (uA)	Max. Peak Pulse Current at 10/1000 us Waveform (A)	Maximum Clamping Voltage at I_{PPM} V_C (V)
	Min.	Max.						
8.0M10	11.1	13.6	5.0	10.0	15	250	351	18.8
8.0M10A		12.3	5.0	10.0	15	250	388	17.0
8.0M11	12.2	14.9	5.0	11.0	10	150	328	20.1
8.0M11A		13.5	5.0	11.0	10	150	363	18.2
8.0M12	13.3	16.3	5.0	12.0	10	150	300	22.0
8.0M12A		14.7	5.0	12.0	10	150	332	19.9
8.0M13	14.4	17.6	5.0	13.0	10	150	277	23.8
8.0M13A		15.9	5.0	13.0	10	150	307	21.5
8.0M14	15.6	19.1	5.0	14.0	10	150	256	25.8
8.0M14A		17.2	5.0	14.0	10	150	284	23.2
8.0M15	16.7	20.4	5.0	15.0	10	150	245	26.9
8.0M15A		18.5	5.0	15.0	10	150	270	24.4
8.0M16	17.8	21.8	5.0	16.0	10	150	229	28.8
8.0M16A		19.7	5.0	16.0	10	150	254	26.0
8.0M17	18.9	23.1	5.0	17.0	10	150	216	30.5
8.0M17A		20.9	5.0	17.0	10	150	239	27.6
8.0M18	20.0	24.4	5.0	18.0	10	150	205	32.2
8.0M18A		22.1	5.0	18.0	10	150	226	29.2
8.0M20	22.2	27.1	5.0	20.0	10	150	184	35.8
8.0M20A		24.5	5.0	20.0	10	150	204	32.4
8.0M22	24.4	29.8	5.0	22.0	10	150	168	39.4
8.0M22A		26.9	5.0	22.0	10	150	186	35.5
8.0M24	26.7	32.6	5.0	24.0	10	150	153	43.0
8.0M24A		29.5	5.0	24.0	10	150	170	38.9
8.0M26	28.9	35.3	5.0	26.0	10	150	142	46.6
8.0M26A		31.9	5.0	26.0	10	150	157	42.1
8.0M27	24.0	30.0	10.0	22.0	1.0	50.0	75	40
8.0M28	31.1	38.0	5.0	28.0	10	150	132	50.1
8.0M28A		34.4	5.0	28.0	10	150	145	45.4
8.0M30	33.3	40.7	5.0	30.0	10	150	123	53.5
8.0M30A		36.8	5.0	30.0	10	150	136	48.4
8.0M33	36.7	44.9	5.0	33.0	10	150	112	59.0
8.0M33A		40.6	5.0	33.0	10	150	124	53.3
8.0M36	40.0	48.9	5.0	36.0	10	150	103	64.3
8.0M36A		44.2	5.0	36.0	10	150	114	58.1
8.0M40	44.4	54.3	5.0	40.0	10	150	92.4	71.4
8.0M40A		49.1	5.0	40.0	10	150	102	64.5
8.0M43	47.8	58.4	5.0	43.0	10	150	86.0	76.7
8.0M43A		52.8	5.0	43.0	10	150	95.1	69.4

Note: For all types maximum VF = 1.8 V at IF = 100 A measured on 8.3 ms single half sine-wave or equivalent square wave,duty cycle = 4 pulses per minute maximum

Typical Performance Characteristics

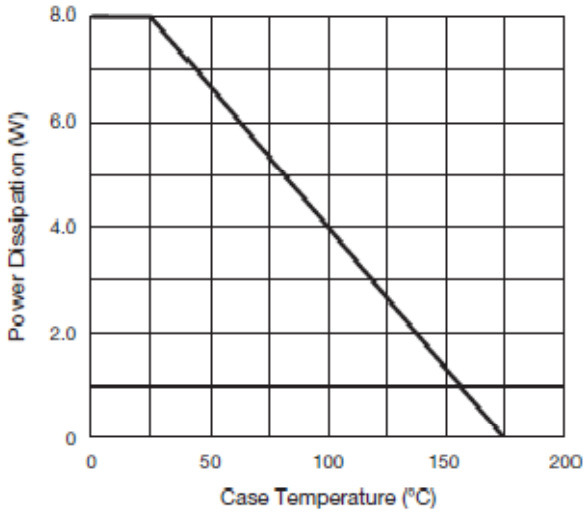


Fig. 1 - Power Derating Curve

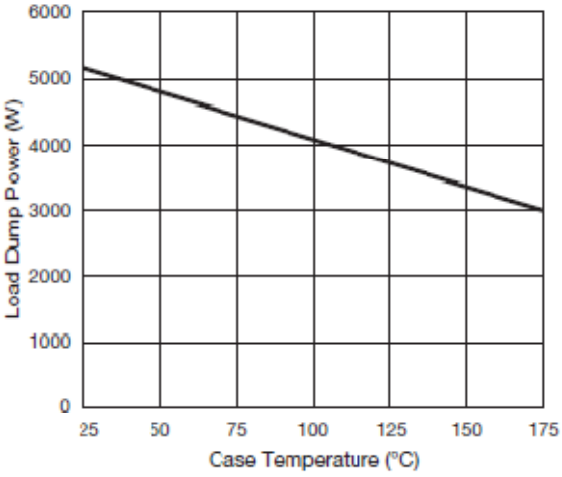


Fig. 2 - Load Dump Power Characteristics
(10 ms Exponential Waveform)

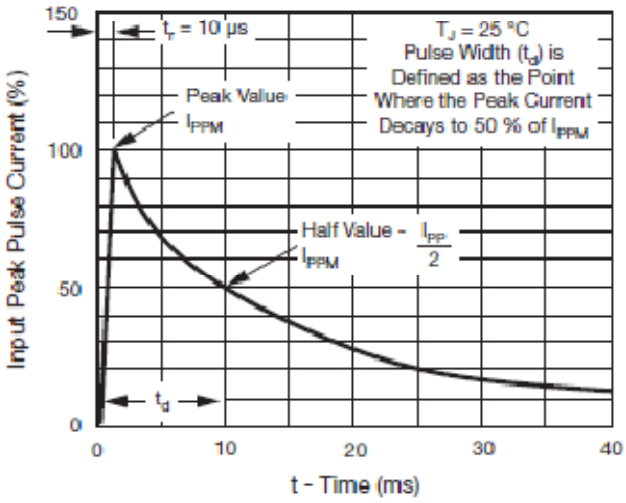


Fig. 3 - Pulse Waveform

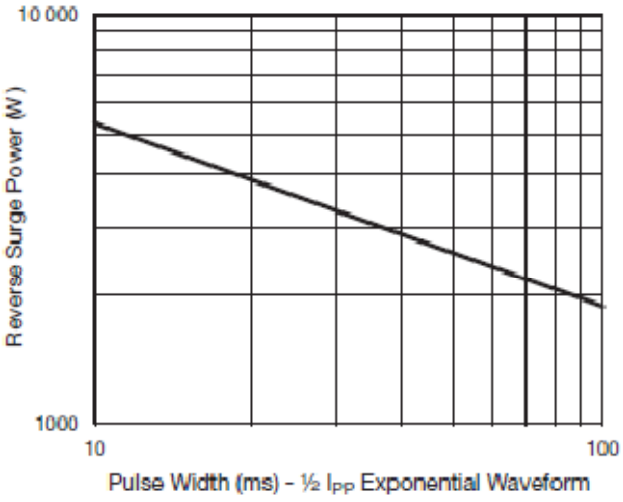


Fig. 4 - Reverse Power Capability

Typical Performance Characteristics

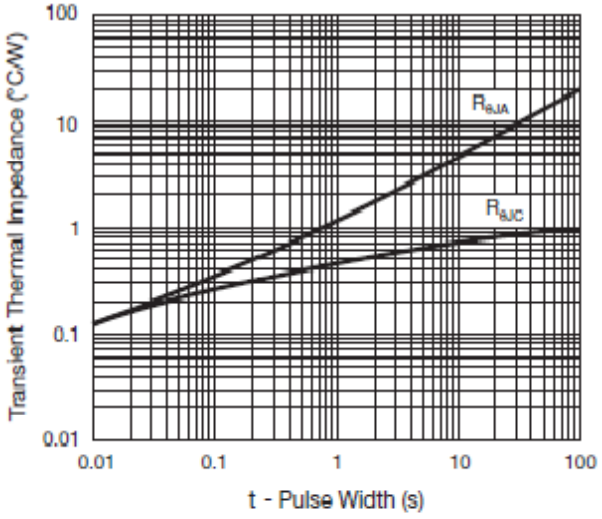


Fig. 5 - Typical Transient Thermal Impedance

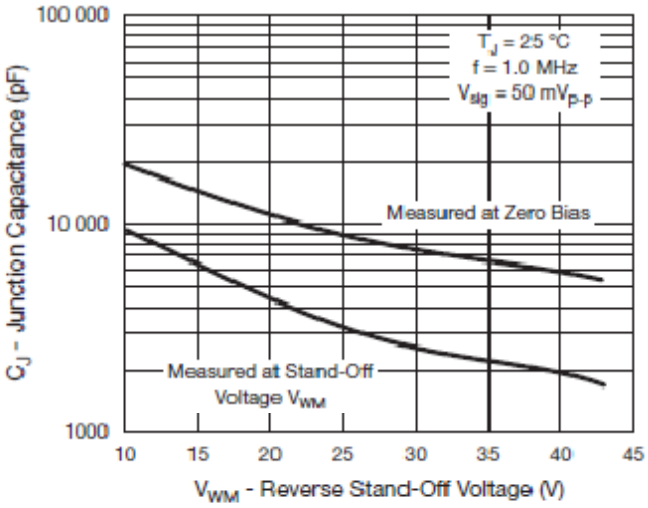
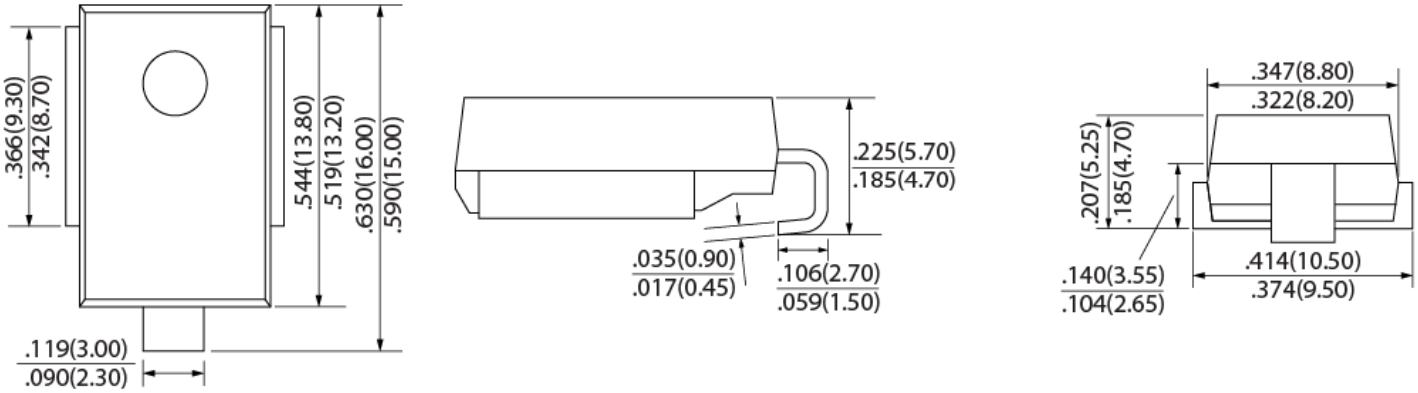


Fig. 6 - Typical Junction Capacitance

Package Outline Dimensions

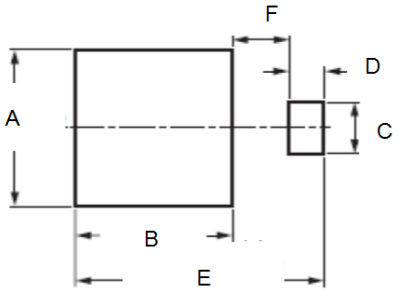


DO-218

Dimensions in inches and (millimeters)

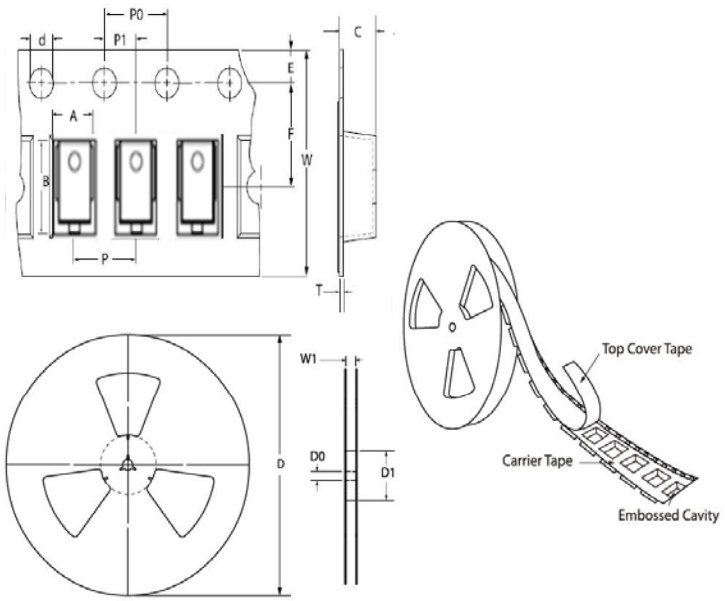
Suggested Pad Layout

Dimension \ Outline	DO-218 (mm)
A	11.0
B	9.5
C	3.5
D	3.0
E	15.8
F	3.3



Tape & Reel Specification

Item	Symbol	DO-218 (mm)
Carrier width	A	10.80±0.15
Carrier length	B	16.35±0.15
Carrier depth	C	6.0±0.15
Sprocket hole	d	1.50±0.10
Reel outside diameter	D	330+0/-3
Feed hole diameter	D0	13.0±0.5
Reel inner diameter	D1	61 (min)
Sprocket hole position	E	1.75±0.10
Punch hole position	F	11.50±0.10
Sprocket hole pitch	P	16.0±0.10
Sprocket hole pitch	Po	4.00±0.10
Embossment center	P1	2.00±0.10
Overall tape thickness	T	0.40±0.1
Tape width	W	24.0+0.3/ -0.1
Reel width	W1	25±0.3



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