MDE Semiconductor, Inc.

78-150 Calle Tampico, Unit 210, La Quinta, CA., USA 92253 Tel : 760-564-8656 • Fax : 760-564-2414
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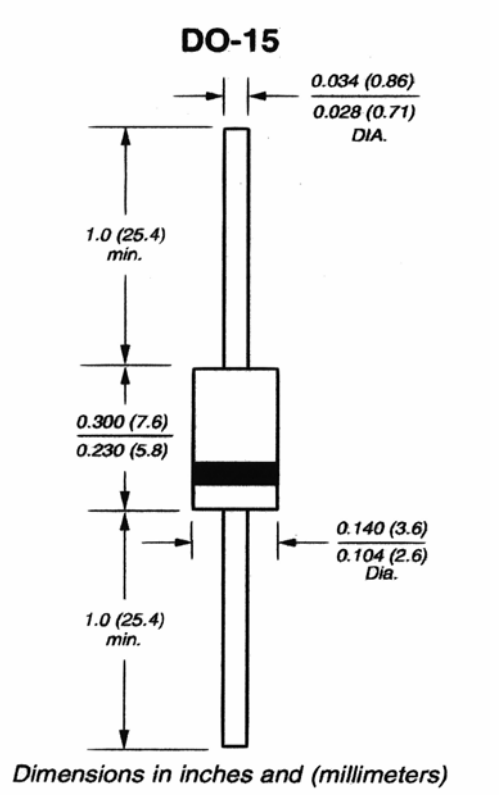
SA5.0 THRU SA180CA

GLASS PASSIVATED JUNCTION TRANSIENT VOLTAGE SUPPRESSOR
VOLTAGE-5.0 TO 180.0 Volts
500 Watt Peak Pulse Power

FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94 V-O
- Glass passivated junction
- 500W Peak Pulse Power capability on 10/1000 µs waveform
- Glass passivated junction
- Low incremental surge resistance
- Excellent clamping capability
- Repetition rate (duty cycle): 0.01%
- Fast response time: typically less than 1.0 ps from 0 volts to BV for unidirectional and 5.0ns for bidirectional and 5.0ns for bi directional
- Typical IR less than 1µA above 10V
- High temperature soldering guaranteed: 300°C/10 seconds/ .375", (9.5mm) lead length, 5lbs., (2.3kg) tension



Dimensions in inches and (millimeters)

MECHANICAL DATA

Case: JEDEC DO-15 Molded plastic over glass passivated junction
Terminals: Plated Axial leads, solderable per MIL-STD-750, Method 2026
Polarity: Color band denoted positive end (cathode) except Bipolar
Mounting Position: Any
Weight: 0.015 ounces, 0.4 grams

DEVICES FOR BIPOLAR APPLICATIONS

For Bidirectional use C or CA Suffix for types SA5.0 thru types SA180 (e.g. SA5.0C, SA180CA)
Electrical characteristics apply in both directions.

MAXIMUM RATINGS AND CHARACTERISTICS

Ratings at 25°C ambient temperature unless otherwise specified.

RATING	SYMBOL	VALUE	UNITS
Peak Pulse Power Dissipation on 10/1000 µs waveform (NOTE 1, Fig.1)	P_{PPM}	Minimum 500	Watts
Peak Pulse Current of on 10/1000 µs waveform (Note 1)	I_{PPM}	SEE TABLE 1	Amps
Steady State Power Dissipation at TL = 75°C Lead lengths .375", 9.5mm (Note 2)	$P_M(AV)$	3.0	Watts
Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed on Rated Load, Unidirectional only (JEDEC Method)(Note 3)	I_{FSM}	70	Amps
Operatings and Storage Temperature Range	T_J, T_{STG}	-55 +175	°C

NOTES:

1. Non-repetitive current pulse, per Fig.3 and derated above Ta=25 °C per Fig.2.
2. Mounted on Copper Pad area of 1.6x1.6" (40x40mm) per Fig.5.
3. 8.3ms single half sine-wave, or equivalent square wave, Duty cycle=4 pulses per minutes maximum.

Certified RoHS Compliant

UL File # E223026

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RATING AND CHARACTERISTIC CURVES SA5.0 THRU SA180CA

Pig.1 - Peak Pulse Power Rating Curve

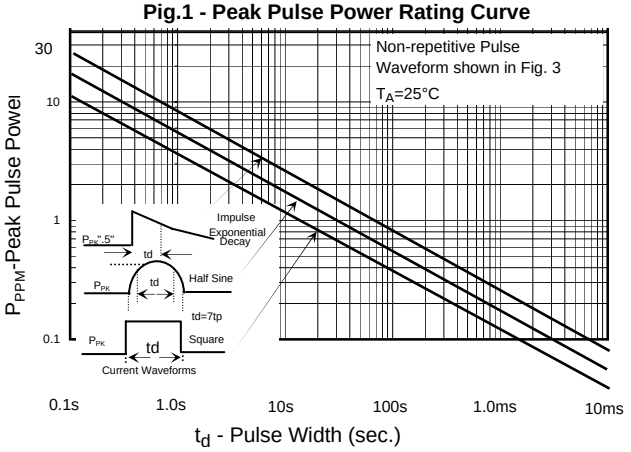


Fig.2-Power Derating Curve

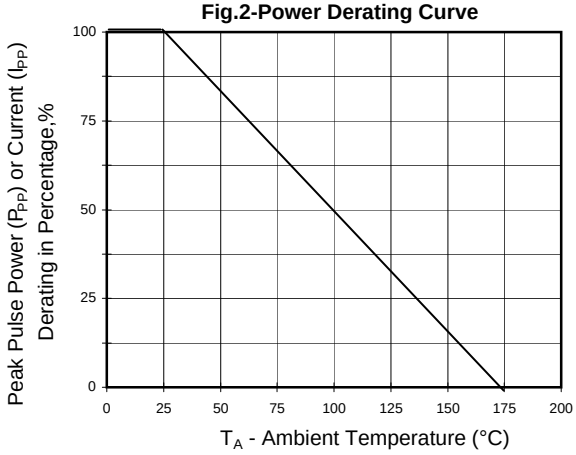


Fig.3 - Pulse Waveform

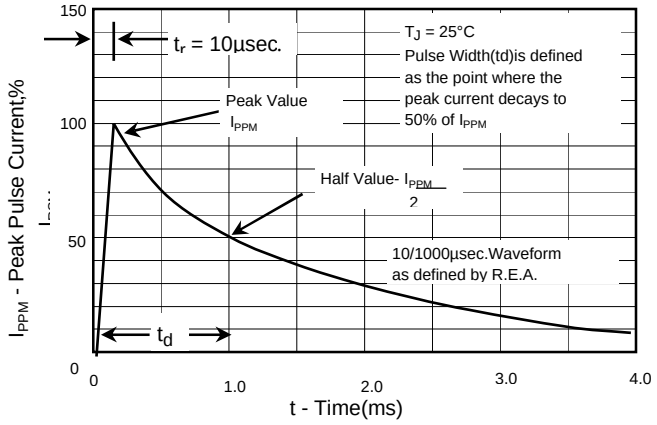


Fig.6 - Maximum Non-Repetitive Forward Surge Current Uni-Directional Only

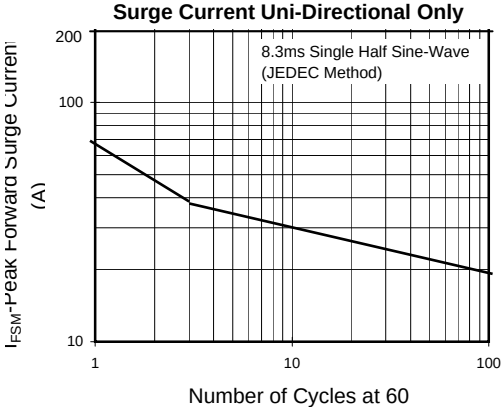


Fig. 5 - Steady State Power Derating Curve

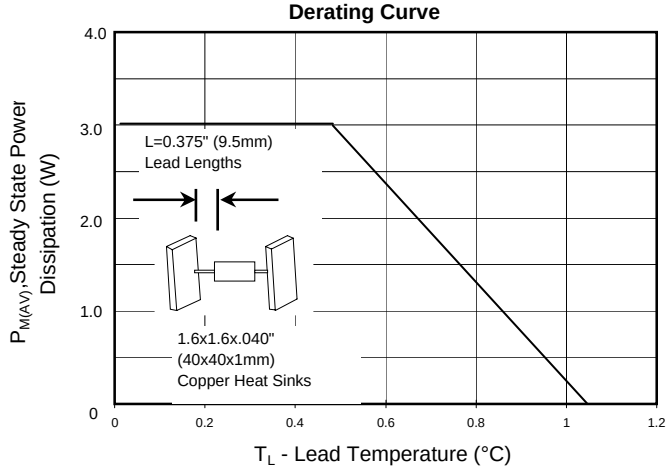
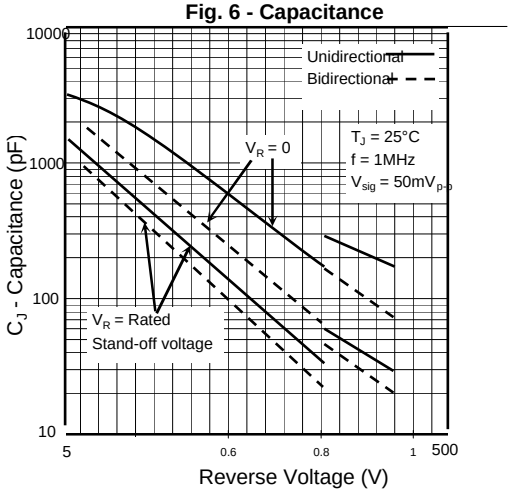


Fig. 6 - Capacitance



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500 Watt TVS

UNI-POLAR	BI-POLAR	REVERSE STANDOFF VOLTAGE V_{RWM} (V)	BREAKDOWN VOLTAGE V_{BR} (V) MIN. @ I_T	BREAKDOWN VOLTAGE V_{BR} (V) MAX. @ I_T	TEST CURRENT (I_T) mA	MAXIMUM CLAMPING VOLTAGE @I_{PP} V_C (V)	PEAK PULSE CURRENT I_{PP} (A)	REVERSE LEAKAGE @ V_{RWM} I_R (µA)
SA5.0A	SA5.0CA	5.00	6.40	7.00	10	9.2	55.4	600
SA6.0A	SA6.0CA	6.00	6.67	7.37	10	10.3	49.5	600
SA6.5A	SA6.5CA	6.50	7.22	7.98	10	11.2	45.5	400
SA7.0A	SA7.0CA	7.00	7.78	8.60	10	12.0	42.5	150
SA7.5A	SA7.5CA	7.50	8.33	9.21	1	12.9	39.5	50
SA8.0A	SA8.0CA	8.00	8.89	9.83	1	13.6	37.5	25
SA8.5A	SA8.5CA	8.50	9.44	10.40	1	14.4	35.4	10
SA9.0A	SA9.0CA	9.00	10.00	11.10	1	15.4	33.1	5
SA10A	SA10CA	10.00	11.10	12.30	1	17.0	30.0	3
SA11A	SA11CA	11.00	12.20	13.50	1	18.2	28.0	3
SA12A	SA12CA	12.00	13.30	14.70	1	19.9	25.6	3
SA13A	SA13CA	13.00	14.40	15.90	1	21.5	23.7	3
SA14A	SA14CA	14.00	15.60	17.20	1	23.2	22.0	3
SA15A	SA15CA	15.00	16.70	18.50	1	24.4	20.9	3
SA16A	SA16CA	16.00	17.80	19.70	1	26.0	19.6	3
SA17A	SA17CA	17.00	18.90	20.90	1	27.6	18.5	3
SA18A	SA18CA	18.00	20.00	22.10	1	29.2	17.5	3
SA20A	SA20CA	20.00	22.20	24.50	1	32.4	15.7	3
SA22A	SA22CA	22.00	24.40	26.90	1	35.5	14.4	3
SA24A	SA24CA	24.00	26.70	29.50	1	38.9	13.1	3
SA26A	SA26CA	26.00	28.90	31.90	1	42.1	12.1	3
SA28A	SA28CA	28.00	31.10	34.40	1	45.4	11.2	3
SA30A	SA30CA	30.00	33.30	36.80	1	48.4	10.5	3
SA33A	SA33CA	33.00	36.70	40.60	1	53.3	9.6	3
SA36A	SA36CA	36.00	40.00	44.20	1	58.1	8.8	3
SA40A	SA40CA	40.00	44.40	49.10	1	64.5	7.9	3
SA43A	SA43CA	43.00	47.80	52.80	1	69.4	7.3	3
SA45A	SA45CA	45.00	50.00	55.30	1	72.7	7.0	3
SA48A	SA48CA	48.00	53.30	58.90	1	77.4	6.6	3
SA51A	SA51CA	51.00	56.70	62.70	1	82.4	6.2	3
SA54A	SA54CA	54.00	60.00	66.30	1	87.1	5.9	3
SA58A	SA58CA	58.00	64.40	71.20	1	93.6	5.4	3
SA60A	SA60CA	60.00	66.70	73.70	1	96.8	5.3	3
SA64A	SA64CA	64.00	71.10	78.60	1	103.0	5.0	3
SA70A	SA70CA	70.00	77.80	86.00	1	113.0	4.5	3
SA75A	SA75CA	75.00	83.30	92.10	1	121.0	4.2	3
SA78A	SA78CA	78.00	86.70	95.80	1	126.0	4.0	3
SA85A	SA85CA	85.00	94.40	104.00	1	137.0	3.7	3
SA90A	SA90CA	90.00	100.00	111.00	1	146	3.5	3
SA100A	SA100CA	100.00	111.00	123.00	1	162	3.1	3
SA110A	SA110CA	110.00	122.00	135.00	1	177	2.9	3
SA120A	SA120CA	120.00	133.00	147.00	1	193	2.6	3
SA130A	SA130CA	130.00	144.00	159.00	1	209	2.4	3
SA150A	SA150CA	150.00	167.00	185.00	1	243	2.1	3
SA160A	SA160CA	160.00	178.00	197.00	1	259	2.0	3
SA170A	SA170CA	170.00	189.00	209.00	1	275	1.9	3
SA180A	SA180CA	180.00	200.00	233.00	1	289	1.7	3

For bidirectional type having Vrwm of 10 volts and less, the IR limit is double.
For parts without A , the VBR is ± 10%

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