

MDE Semiconductor, Inc.

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MSMCJ SERIES

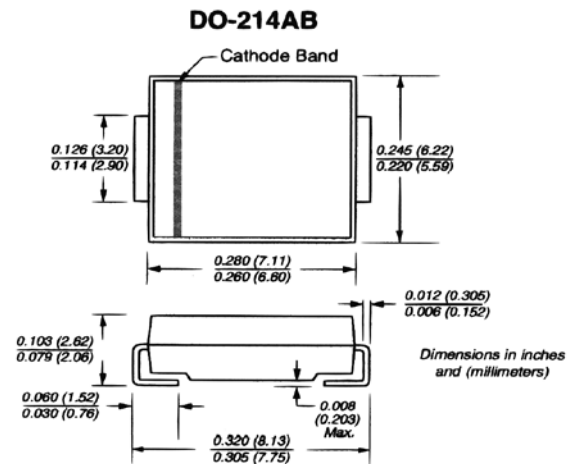
SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR VOLTAGE-5.0 TO 440 Volts 1500 Watt Peak Pulse Power

FEATURES

- For surface mounted applications in order to optimize board space
- Low profile package
- Built-in strain relief
- Glass passivated junction
- Low inductance
- 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 types
- Typical IR less than 1 μ A above 10V
- High temperature soldering:
250°C/10 seconds at terminals
- Plastic package has Underwriters Laboratory Flammability Classification 94 V-O

MECHANICAL DATA

Case: JEDEC DO214AB. Molded plastic over glass passivated junction
Terminals: Solder plated, solderable per MIL-STD-750, Method 2026
Polarity: Color band denoted positive end (cathode) except Bidirectional
Standard Packaging: 12mm tape (EIA STD RS-481)
Weight: 0.007 ounces, 0.021 grams



Dimensions in inches (millimeters)

DEVICES FOR BIPOLAR APPLICATIONS

For Bidirectional use C or CA Suffix for types MSMCJ5.0 thru types MSMCJ440 (e.g. MSMCJ5.0C, MSMCJ440CA) 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 μ s waveform (NOTE 1, 2, Fig.1)	P_{PPM}	Minimum 1500	Watts
Peak Pulse Current of on 10/1000 μ s waveform (Note 1, Fig 3)	I_{PPM}	SEE TABLE 1	Amps
Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed on Rated Load, (JEDEC Method)(Note2, 3)	I_{FSM}	200	Amps
Operating and Storage Temperature Range	T_J, T_{STG}	-55 +150	°C

NOTES:

1. Non-repetitive current pulse, per Fig.3 and derated above $T_a=25^\circ\text{C}$ per Fig.2.
2. Mounted on Copper Pad area of 0.8x0.8" (20x20mm) 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 MSMCJ SERIES

Fig. 1 - Peak Pulse Power Rating

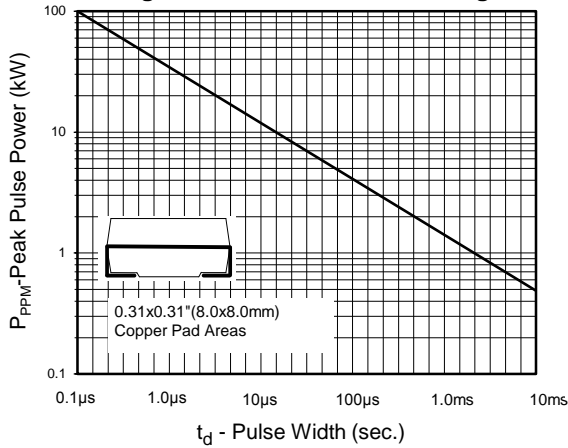


Fig.2 - Pulse Derating Curve

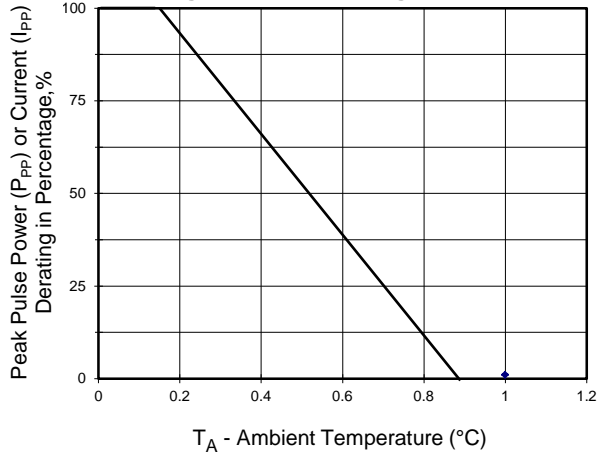


Fig.3 - Pulse Waveform

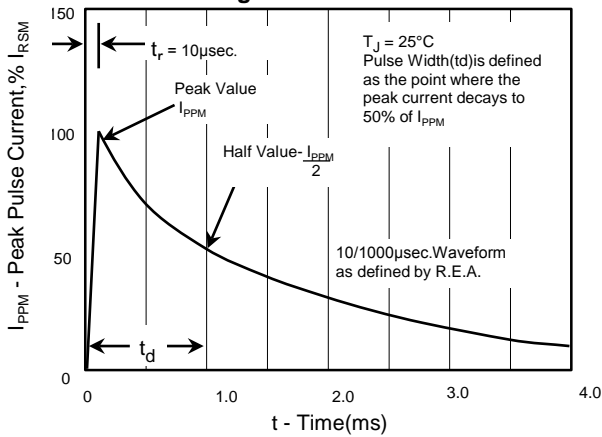


Fig.4 - Typical Junction Capacitance Uni-Directional

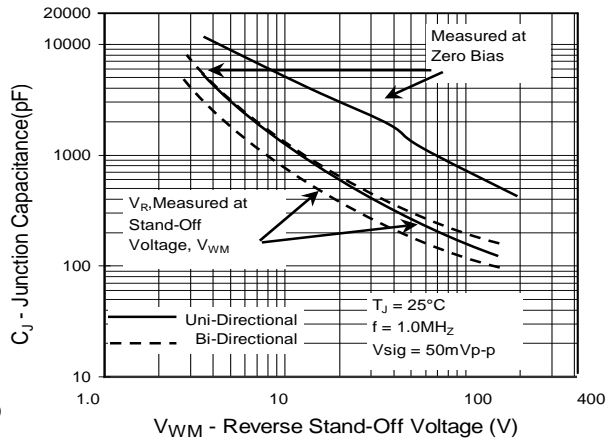


Fig. 5 - Typ. Transient Thermal Impedance

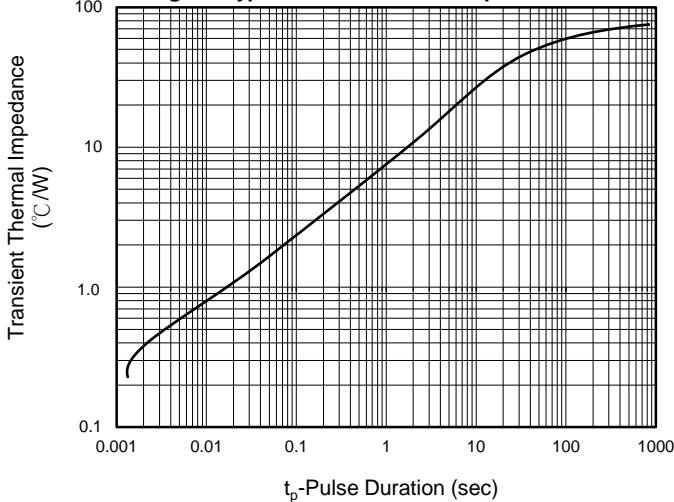
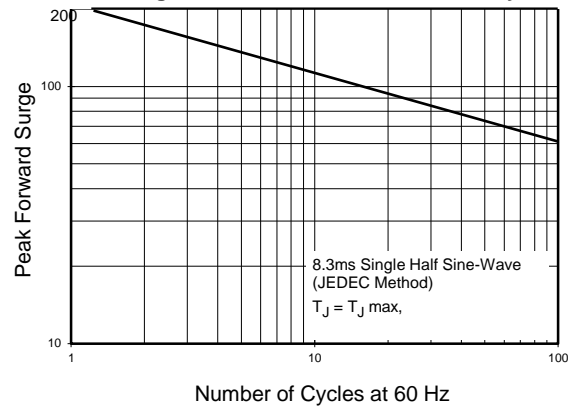


Fig.6 - Maximum Non-Repetitive Forward Surge Current Uni-Directional Use Only



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1500 Watt Surface Mount TVS

UNI-POLAR	BI-POLAR	DEVICE MARKING CODE		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 (μ A)
		UNI	BI							
MSMCJ5.0A	MSMCJ5.0CA	GDE	BDE	5.00	6.40	7.00	10	9.2	163.0	800
MSMCJ6.0A	MSMCJ6.0CA	GDG	BDG	6.00	6.67	7.37	10	10.3	145.7	800
MSMCJ6.5A	MSMCJ6.5CA	GDK	BDK	6.50	7.22	7.98	10	11.2	134.0	500
MSMCJ7.0A	MSMCJ7.0CA	GDM	BDM	7.00	7.78	8.60	10	12.0	125.0	200
MSMCJ7.5A	MSMCJ7.5CA	GDP	BDP	7.50	8.33	9.21	1	12.9	116.3	100
MSMCJ8.0A	MSMCJ8.0CA	GDR	BDR	8.00	8.89	9.83	1	13.6	110.3	50
MSMCJ8.5A	MSMCJ8.5CA	GDT	BDT	8.50	9.44	10.40	1	14.4	104.2	20
MSMCJ9.0A	MSMCJ9.0CA	GDV	BDV	9.00	10.00	11.10	1	15.4	97.4	10
MSMCJ10A	MSMCJ10CA	GDX	BDX	10.00	11.10	12.30	1	17.0	88.3	5
MSMCJ11A	MSMCJ11CA	GDZ	BDZ	11.00	12.20	13.50	1	18.2	82.5	1
MSMCJ12A	MSMCJ12CA	GEE	BEE	12.00	13.30	14.70	1	19.9	75.4	1
MSMCJ13A	MSMCJ13CA	GEG	BEG	13.00	14.40	15.90	1	21.5	69.8	1
MSMCJ14A	MSMCJ14CA	GEK	BEK	14.00	15.60	17.20	1	23.2	64.7	1
MSMCJ15A	MSMCJ15CA	GEM	BEM	15.00	16.70	18.50	1	24.4	61.5	1
MSMCJ16A	MSMCJ16CA	GEP	BEP	16.00	17.80	19.70	1	26.0	57.7	1
MSMCJ17A	MSMCJ17CA	GER	BER	17.00	18.90	20.90	1	27.6	54.4	1
MSMCJ18A	MSMCJ18CA	GET	BET	18.00	20.00	22.10	1	29.2	51.4	1
MSMCJ20A	MSMCJ20CA	GEV	BEV	20.00	22.20	24.50	1	32.4	46.3	1
MSMCJ22A	MSMCJ22CA	GEX	BEX	22.00	24.40	26.90	1	35.5	42.3	1
MSMCJ24A	MSMCJ24CA	GEZ	BEZ	24.00	26.70	29.50	1	38.9	38.6	1
MSMCJ26A	MSMCJ26CA	GFE	BFE	26.00	28.90	31.90	1	42.1	35.7	1
MSMCJ28A	MSMCJ28CA	GFG	BFG	28.00	31.10	34.40	1	45.4	33.1	1
MSMCJ30A	MSMCJ30CA	GFK	BFK	30.00	33.30	36.80	1	48.4	31.0	1
MSMCJ33A	MSMCJ33CA	GFM	BFM	33.00	36.70	40.60	1	53.3	28.2	1
MSMCJ36A	MSMCJ36CA	GFP	BFP	36.00	40.00	44.20	1	58.1	25.9	1
MSMCJ40A	MSMCJ40CA	GFR	BFR	40.00	44.40	49.10	1	64.5	23.3	1
MSMCJ43A	MSMCJ43CA	GFT	BFT	43.00	47.80	52.80	1	69.4	21.7	1
MSMCJ45A	MSMCJ45CA	GFV	BFV	45.00	50.00	55.30	1	72.7	20.6	1
MSMCJ48A	MSMCJ48CA	GFX	BFX	48.00	53.30	58.90	1	77.4	19.4	1
MSMCJ51A	MSMCJ51CA	GFZ	BFZ	51.00	56.70	62.70	1	82.4	18.2	1
MSMCJ54A	MSMCJ54CA	GGE	BGE	54.00	60.00	66.30	1	87.1	17.3	1
MSMCJ58A	MSMCJ58CA	GGG	BGG	58.00	64.40	71.20	1	93.6	16.1	1
MSMCJ60A	MSMCJ60CA	GGK	BGK	60.00	66.70	73.70	1	96.8	15.5	1
MSMCJ64A	MSMCJ64CA	GGM	BGM	64.00	71.10	78.60	1	103.0	14.6	1
MSMCJ70A	MSMCJ70CA	GGP	BGP	70.00	77.80	86.00	1	113.0	13.3	1
MSMCJ75A	MSMCJ75CA	GGR	BGR	75.00	83.30	92.10	1	121.0	12.4	1
MSMCJ78A	MSMCJ78CA	GGT	BGT	78.00	86.70	95.80	1	126.0	11.9	1
MSMCJ85A	MSMCJ85CA	GGV	BGV	85.00	94.40	104.00	1	137.0	11.0	1
MSMCJ90A	MSMCJ90CA	GGX	BGX	90.00	100.00	111.00	1	146.0	10.3	1
MSMCJ100A	MSMCJ100CA	GGZ	BGZ	100.00	111.00	123.00	1	162.0	9.3	1
MSMCJ110A	MSMCJ110CA	GHE	BHE	110.00	122.00	135.00	1	177.0	8.5	1
MSMCJ120A	MSMCJ120CA	GHG	BHG	120.00	133.00	147.00	1	193.0	7.8	1
MSMCJ130A	MSMCJ130CA	GHK	BHK	130.00	144.00	159.00	1	209.0	7.2	1
MSMCJ150A	MSMCJ150CA	GHM	BHM	150.00	167.00	185.00	1	243.0	6.2	1
MSMCJ160A	MSMCJ160CA	GHP	BHP	160.00	178.00	197.00	1	259.0	5.8	1
MSMCJ170A	MSMCJ170CA	GHR	BHR	170.00	189.00	209.00	1	275.0	5.5	1
MSMCJ180A	MSMCJ180CA	GHT	BHT	180.00	201.00	222.00	1	292.0	5.1	1
MSMCJ200A	MSMCJ200CA	GHV	BHV	200.00	224.00	247.00	1	324.0	4.6	1
MSMCJ220A	MSMCJ220CA	GHX	BHX	220.00	246.00	272.00	1	356.0	4.2	1
MSMCJ250A	MSMCJ250CA	GHZ	BHZ	250.00	279.00	309.00	1	405.0	3.7	1
MSMCJ300A	MSMCJ300CA	GJE	BJE	300.00	335.00	371.00	1	486.0	4.1	1
MSMCJ350A	MSMCJ350CA	GJG	BJG	350.00	391.00	432.00	1	567.0	3.5	1
MSMCJ400A	MSMCJ400CA	GJK	BJK	400.00	447.00	494.00	1	648.0	3.0	1
MSMCJ440A	MSMCJ440CA	GJM	BJM	440.00	492.00	543.00	1	713.0	2.8	1

For bidirectional type having V_{RWM} of 10 volts and less, the I_R limit is double.

For parts without A, the V_{BR} is $\pm 10\%$