

# MDE Semiconductor, Inc.

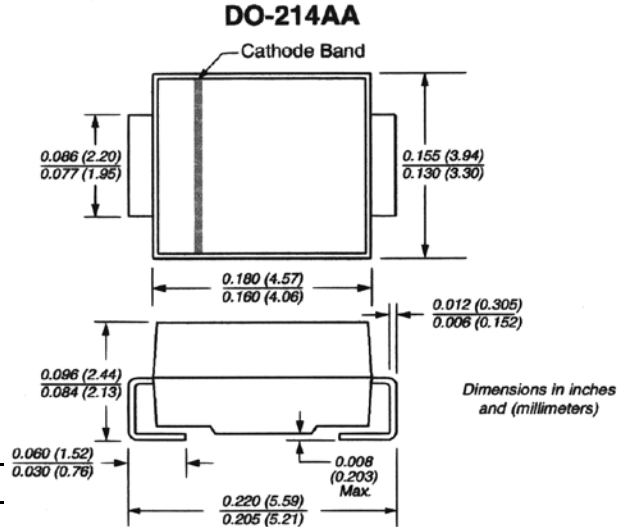
201 Shipyard Way, Unit C, Newport Beach, CA., USA 92663 Tel : 760-564-8656 • Fax : 760-564-2414  
1-800-831-4881 Email: sales@mdesemiconductor.com Web: www.mdesemiconductor.com

## MSMBJ SERIES

### SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR VOLTAGE-5.0 TO 440 Volts 600 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 1µA 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 DO214AA. 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: 0.003 ounces, 0.093 grams

Dimensions in inches (millimeters)

#### DEVICES FOR BIPOLAR APPLICATIONS

For Bidirectional use C or CA Suffix for types MSMBJ5.0 thru types MSMBJ440 (e.g. MSMBJ5.0C, MSMBJ440CA) 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, 2, Fig.1)	P <sub>PPM</sub>	Minimum 600	Watts
Peak Pulse Current of on 10/1000 µs waveform (Note 1, Fig 3)	I <sub>PPM</sub>	SEE TABLE 1	Amps
Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed on Rated Load, (JEDEC Method)(Note2, 3)	I <sub>FSM</sub>	100	Amps
Operatings and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 +150	°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 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

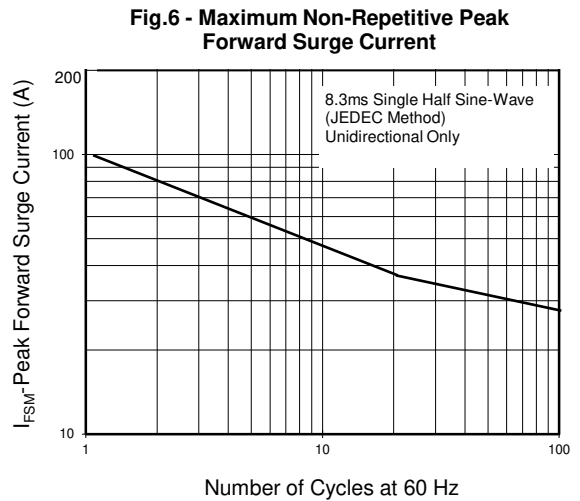
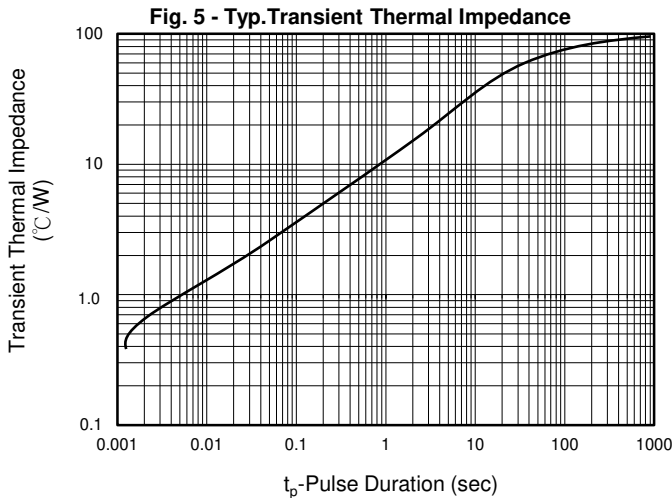
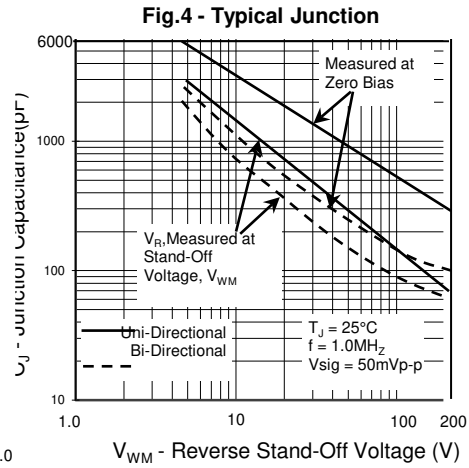
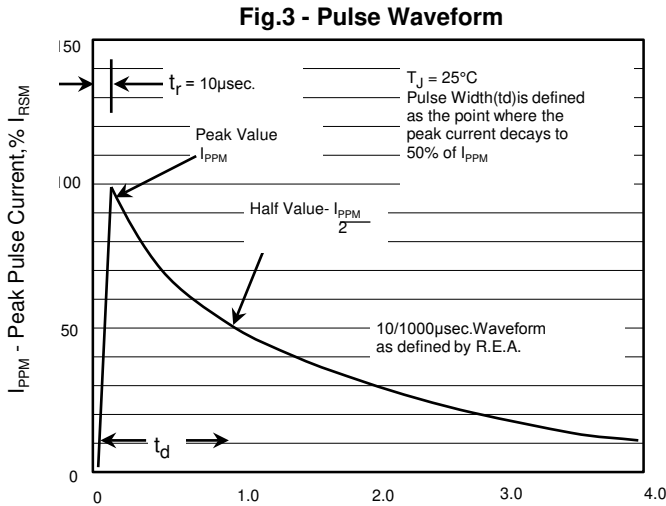
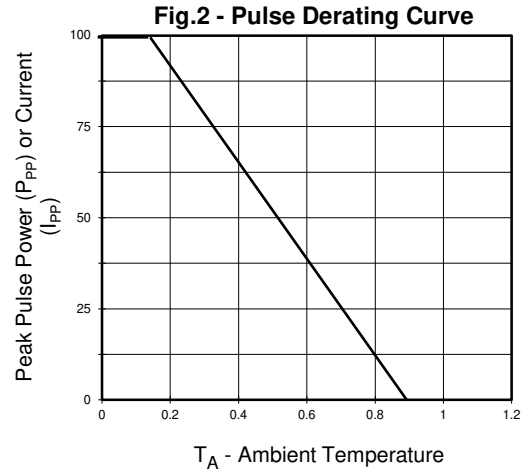
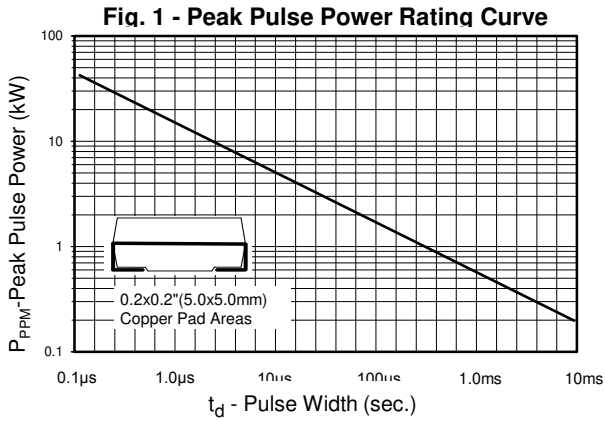
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## RATING AND CHARACTERISTIC CURVES MSMBJ SERIES



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## 600 Watt Surface Mount TVS

UNI-POLAR	BI-POLAR	DEVICE MARKING CODE		REVERSE STANDOFF VOLTAGE V <sub>RWM</sub> (V)	BREAKDOWN VOLTAGE V <sub>BR</sub> (V) MIN. @ I <sub>T</sub>	BREAKDOWN VOLTAGE V <sub>BR</sub> (V) MAX. @ I <sub>T</sub>	TEST CURRENT (I <sub>T</sub> ) mA	MAXIMUM CLAMPING VOLTAGE @I <sub>PP</sub> V <sub>C</sub> (V)	PEAK PULSE CURRENT I <sub>PP</sub> (A)	REVERSE LEAKAGE @ V <sub>RWM</sub> I <sub>R</sub> (μA)
		UNI	BI							
MSMBJ5.0A	MSMBJ5.0CA	KE	AE	5.00	6.40	7.00	10	9.2	65.3	800
MSMBJ6.0A	MSMBJ6.0CA	KG	AG	6.00	6.67	7.37	10	10.3	58.3	800
MSMBJ6.5A	MSMBJ6.5CA	KK	AK	6.50	7.22	7.98	10	11.2	53.6	500
MSMBJ7.0A	MSMBJ7.0CA	KM	AM	7.00	7.78	8.60	10	12.0	50.0	200
MSMBJ7.5A	MSMBJ7.5CA	KP	AP	7.50	8.33	9.21	1	12.9	46.6	100
MSMBJ8.0A	MSMBJ8.0CA	KR	AR	8.00	8.89	9.83	1	13.6	44.2	50
MSMBJ8.5A	MSMBJ8.5CA	KT	AT	8.50	9.44	10.40	1	14.4	41.7	20
MSMBJ9.0A	MSMBJ9.0CA	KV	AV	9.00	10.00	11.10	1	15.4	39.0	10
MSMBJ10A	MSMBJ10CA	KX	AX	10.00	11.10	12.30	1	17.0	35.3	5
MSMBJ11A	MSMBJ11CA	KZ	AZ	11.00	12.20	13.50	1	18.2	33.0	1
MSMBJ12A	MSMBJ12CA	LE	BE	12.00	13.30	14.70	1	19.9	30.2	1
MSMBJ13A	MSMBJ13CA	LG	BG	13.00	14.40	15.90	1	21.5	28.0	1
MSMBJ14A	MSMBJ14CA	LK	BK	14.00	15.60	17.20	1	23.2	25.9	1
MSMBJ15A	MSMBJ15CA	LM	BM	15.00	16.70	18.50	1	24.4	24.6	1
MSMBJ16A	MSMBJ16CA	LP	BP	16.00	17.80	19.70	1	26.0	23.1	1
MSMBJ17A	MSMBJ17CA	LR	BR	17.00	18.90	20.90	1	27.6	21.8	1
MSMBJ18A	MSMBJ18CA	LT	BT	18.00	20.00	22.10	1	29.2	20.6	1
MSMBJ20A	MSMBJ20CA	LV	BV	20.00	22.20	24.50	1	32.4	18.6	1
MSMBJ22A	MSMBJ22CA	LX	BX	22.00	24.40	26.90	1	35.5	16.9	1
MSMBJ24A	MSMBJ24CA	LZ	BZ	24.00	26.70	29.50	1	38.9	15.5	1
MSMBJ26A	MSMBJ26CA	ME	CE	26.00	28.90	31.90	1	42.1	14.3	1
MSMBJ28A	MSMBJ28CA	MG	CG	28.00	31.10	34.40	1	45.4	13.3	1
MSMBJ30A	MSMBJ30CA	MK	CK	30.00	33.30	36.80	1	48.4	12.4	1
MSMBJ33A	MSMBJ33CA	MM	CM	33.00	36.70	40.60	1	53.3	11.3	1
MSMBJ36A	MSMBJ36CA	MP	CP	36.00	40.00	44.20	1	58.1	10.4	1
MSMBJ40A	MSMBJ40CA	MR	CR	40.00	44.40	49.10	1	64.5	9.3	1
MSMBJ43A	MSMBJ43CA	MT	CT	43.00	47.80	52.80	1	69.4	8.7	1
MSMBJ45A	MSMBJ45CA	MV	CV	45.00	50.00	55.30	1	72.7	8.3	1
MSMBJ48A	MSMBJ48CA	MX	CX	48.00	53.30	58.90	1	77.4	7.8	1
MSMBJ51A	MSMBJ51CA	MZ	CZ	51.00	56.70	62.70	1	82.4	7.3	1
MSMBJ54A	MSMBJ54CA	NE	DE	54.00	60.00	66.30	1	87.1	6.9	1
MSMBJ58A	MSMBJ58CA	NG	DG	58.00	64.40	71.20	1	93.6	6.5	1
MSMBJ60A	MSMBJ60CA	NK	DK	60.00	66.70	73.70	1	96.8	6.2	1
MSMBJ64A	MSMBJ64CA	NM	DM	64.00	71.10	78.60	1	103.0	5.9	1
MSMBJ70A	MSMBJ70CA	NP	DP	70.00	77.80	86.00	1	113.0	5.3	1
MSMBJ75A	MSMBJ75CA	NR	DR	75.00	83.30	92.10	1	121.0	5.0	1
MSMBJ78A	MSMBJ78CA	NT	DT	78.00	86.70	95.80	1	126.0	4.8	1
MSMBJ85A	MSMBJ85CA	NV	DV	85.00	94.40	104.00	1	137.0	4.4	1
MSMBJ90A	MSMBJ90CA	NX	DX	90.00	100.00	111.00	1	146	4.1	1
MSMBJ100A	MSMBJ100CA	NZ	DZ	100.00	111.00	123.00	1	162	3.7	1
MSMBJ110A	MSMBJ110CA	PE	EE	110.00	122.00	135.00	1	177	3.4	1
MSMBJ120A	MSMBJ120CA	PG	EG	120.00	133.00	147.00	1	193	3.1	1
MSMBJ130A	MSMBJ130CA	PK	EK	130.00	144.00	159.00	1	209	2.9	1
MSMBJ150A	MSMBJ150CA	PM	EM	150.00	167.00	185.00	1	243	2.5	1
MSMBJ160A	MSMBJ160CA	PP	EP	160.00	178.00	197.00	1	259	2.3	1
MSMBJ170A	MSMBJ170CA	PR	ER	170.00	189.00	209.00	1	275	2.2	1
MSMBJ180A	MSMBJ180CA	PT	ET	180.00	201.00	222.00	1	292	2.1	1
MSMBJ200A	MSMBJ200CA	PV	EV	200.00	224.00	247.00	1	324	1.9	1
MSMBJ220A	MSMBJ220CA	PX	EX	220.00	246.00	272.00	1	356	1.7	1
MSMBJ250A	MSMBJ250CA	PZ	EZ	250.00	279.00	309.00	1	405	1.5	1
MSMBJ300A	MSMBJ300CA	QE	FE	300.00	335.00	371.00	1	486	1.7	1
MSMBJ350A	MSMBJ350CA	QG	FG	350.00	391.00	432.00	1	567	1.5	1
MSMBJ400A	MSMBJ400CA	QK	FK	400.00	447.00	494.00	1	648	1.3	1
MSMBJ440A	MSMBJ440CA	QM	FM	440.00	492.00	543.00	1	713	1.1	1

For bidirectional type having V<sub>rwm</sub> of 10 volts and less, the I<sub>R</sub> limit is double.

For parts without A , the V<sub>BR</sub> is ± 10%