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

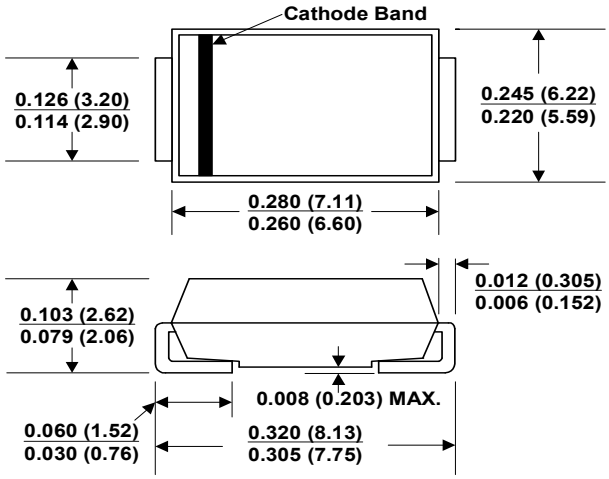
MSMLJ SERIES

SURFACE MOUNT TRANSIENT VOLTAGE SUPPRESSOR
VOLTAGE-5.0 TO 170 Volts
3000 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

DO-214AB (MSMC J-Bend)



Dimensions in inches and(millimeters)

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, 0.21 grams)

DEVICES FOR BIPOLAR APPLICATIONS

For Bidirectional use C or CA Suffix for types MSMLJ5.0 thru types MSMLJ170 (e.g. MSMLJ5.0C, MSMLJ170CA) 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_{PPM}	Minimum 3000	Watts
Peak Pulse Current of on 10/1000 μs 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}	300	Amps
Operatings and Storage Temperature Range	T_J, T_{STG}	-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 8.0mm x 8.0mm (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

9/29/2022

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3000 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 (µA)
		UNI	BI							
MSMLJ5.0A	MSMLJ5.0CA	RDE	DDE	5.00	6.40	7.00	10	9.2	326.1	800
MSMLJ6.0A	MSMLJ6.0CA	RDG	DDG	6.00	6.67	7.37	10	10.3	291.3	800
MSMLJ6.5A	MSMLJ6.5CA	RDK	DDK	6.50	7.22	7.98	10	11.2	267.9	500
MSMLJ7.0A	MSMLJ7.0CA	PDM	DDM	7.00	7.78	8.60	10	12.0	250.0	200
MSMLJ7.5A	MSMLJ7.5CA	PDP	DDP	7.50	8.33	9.21	1	12.9	232.6	100
MSMLJ8.0A	MSMLJ8.0CA	PDR	DDR	8.00	8.89	9.83	1	13.6	220.6	50
MSMLJ8.5A	MSMLJ8.5CA	PDT	DDT	8.50	9.44	10.40	1	14.4	208.3	20
MSMLJ9.0A	MSMLJ9.0CA	PDV	DDV	9.00	10.00	11.10	1	15.4	194.8	10
MSMLJ10A	MSMLJ10CA	PDX	DDX	10.00	11.10	12.30	1	17.0	176.5	5
MSMLJ11A	MSMLJ11CA	PDZ	DDZ	11.00	12.20	13.50	1	18.2	164.8	5
MSMLJ12A	MSMLJ12CA	PEE	DEE	12.00	13.30	14.70	1	19.9	150.8	5
MSMLJ13A	MSMLJ13CA	PEG	DEG	13.00	14.40	15.90	1	21.5	139.5	5
MSMLJ14A	MSMLJ14CA	PEK	DEK	14.00	15.60	17.20	1	23.2	129.3	2
MSMLJ15A	MSMLJ15CA	PEM	DEM	15.00	16.70	18.50	1	24.4	123.0	2
MSMLJ16A	MSMLJ16CA	PEP	DEP	16.00	17.80	19.70	1	26.0	115.4	2
MSMLJ17A	MSMLJ17CA	PER	DER	17.00	18.90	20.90	1	27.6	108.7	2
MSMLJ18A	MSMLJ18CA	PET	DET	18.00	20.00	22.10	1	29.2	102.7	2
MSMLJ20A	MSMLJ20CA	PEV	DEV	20.00	22.20	24.50	1	32.4	92.6	2
MSMLJ22A	MSMLJ22CA	PEX	DEX	22.00	24.40	26.90	1	35.5	84.5	2
MSMLJ24A	MSMLJ24CA	PEZ	DEZ	24.00	26.70	29.50	1	38.9	77.1	2
MSMLJ26A	MSMLJ26CA	PFE	DFE	26.00	28.90	31.90	1	42.1	71.3	2
MSMLJ28A	MSMLJ28CA	PFG	DFG	28.00	31.10	34.40	1	45.4	66.1	2
MSMLJ30A	MSMLJ30CA	PFK	DFK	30.00	33.30	36.80	1	48.4	62.0	2
MSMLJ33A	MSMLJ33CA	PFM	DFM	33.00	36.70	40.60	1	53.3	56.3	2
MSMLJ36A	MSMLJ36CA	PFP	DFP	36.00	40.00	44.20	1	58.1	51.6	2
MSMLJ40A	MSMLJ40CA	PFR	DFR	40.00	44.40	49.10	1	64.5	46.5	2
MSMLJ43A	MSMLJ43CA	PFT	DFT	43.00	47.80	52.80	1	69.4	43.2	2
MSMLJ45A	MSMLJ45CA	PFV	DFV	45.00	50.00	55.30	1	72.7	41.3	2
MSMLJ48A	MSMLJ48CA	PFX	DFX	48.00	53.30	58.90	1	77.4	38.8	2
MSMLJ51A	MSMLJ51CA	PFZ	DFZ	51.00	56.70	62.70	1	82.4	36.4	2
MSMLJ54A	MSMLJ54CA	RGE	DGE	54.00	60.00	66.30	1	87.1	34.4	2
MSMLJ58A	MSMLJ58CA	PGG	DGG	58.00	64.40	71.20	1	93.6	32.1	2
MSMLJ60A	MSMLJ60CA	PGK	DGK	60.00	66.70	73.70	1	96.8	31.0	2
MSMLJ64A	MSMLJ64CA	PGM	DGM	64.00	71.10	78.60	1	103.0	29.1	2
MSMLJ70A	MSMLJ70CA	PGP	DGP	70.00	77.80	86.00	1	113.0	26.5	2
MSMLJ75A	MSMLJ75CA	PGR	DGR	75.00	83.30	92.10	1	121.0	24.8	2
MSMLJ78A	MSMLJ78CA	PGT	DGT	78.00	86.70	95.80	1	126.0	23.8	2
MSMLJ85A	MSMLJ85CA	PGV	DGV	85.00	94.40	104.00	1	137.0	21.9	2
MSMLJ90A	MSMLJ90CA	PGX	DGX	90.00	100.00	111.00	1	146.0	20.5	2
MSMLJ100A	MSMLJ100CA	PGZ	DGZ	100.00	111.00	123.00	1	162.0	18.5	2
MSMLJ110A	MSMLJ110CA	PHE	DHE	110.00	122.00	135.00	1	177.0	16.9	2
MSMLJ120A	MSMLJ120CA	PHG	DHG	120.00	133.00	147.00	1	193.0	15.5	2
MSMLJ130A	MSMLJ130CA	PHK	DHK	130.00	144.00	159.00	1	209.0	14.4	2
MSMLJ150A	MSMLJ150CA	PHM	DHM	150.00	167.00	185.00	1	243.0	12.3	2
MSMLJ160A	MSMLJ160CA	PHP	DHP	160.00	178.00	197.00	1	259.0	11.6	2
MSMLJ170A	MSMLJ170CA	PHR	DHR	170.00	189.00	209.00	1	275.0	10.9	2
MSMLJ180A	MSMLJ180CA	PHT	DHT	180.00	200.00	221.00	1	292.0	10.3	2
MSMLJ220A	MSMLJ220CA	PKE	DKE	220.00	244.00	270.00	1	356.0	8.4	2

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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RATING AND CHARACTERISTIC CURVES MSMLJ SERIES

Fig. 1 - Peak Pulse Power Rating Curve

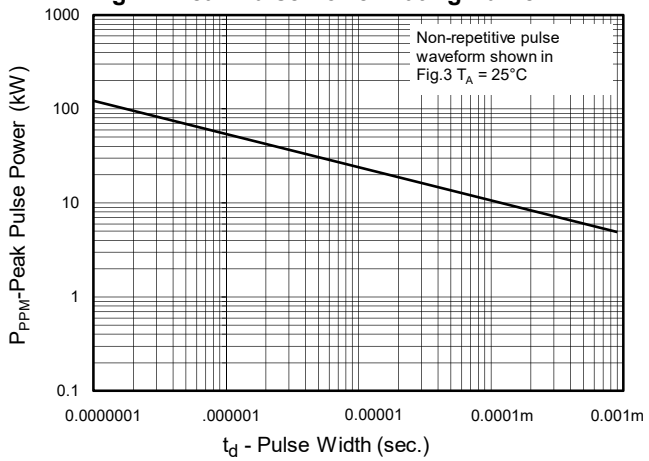

Fig.2 - Pulse Derating

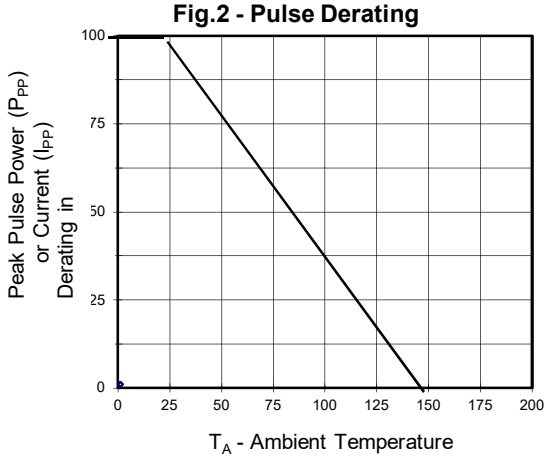

Fig.3 - Pulse Waveform

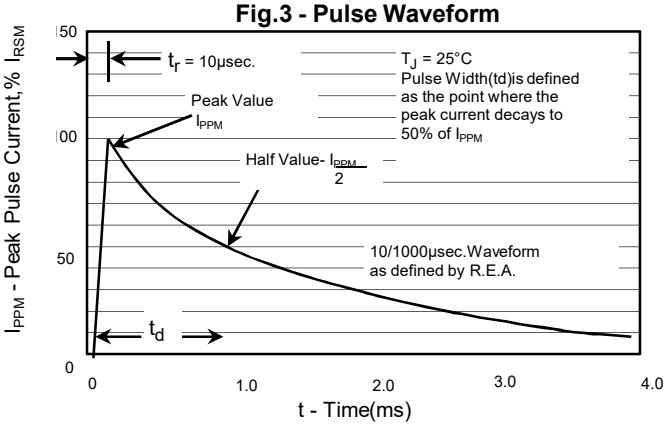

Fig. 4 - Typical Junction Capacitance

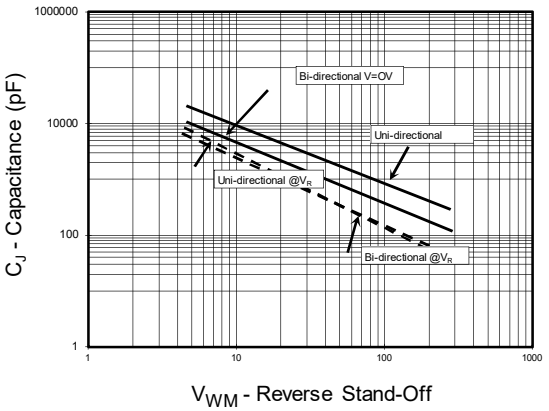

Fig. 5 - Steady State Power Derating Curve

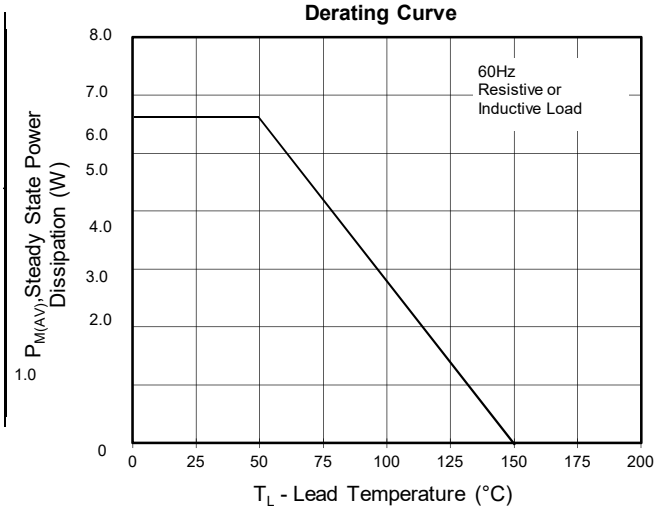

Fig.6 - Maximum Non-Repetitive Forward Surge Current Uni-Directional Only