

MDE Semiconductor, Inc.

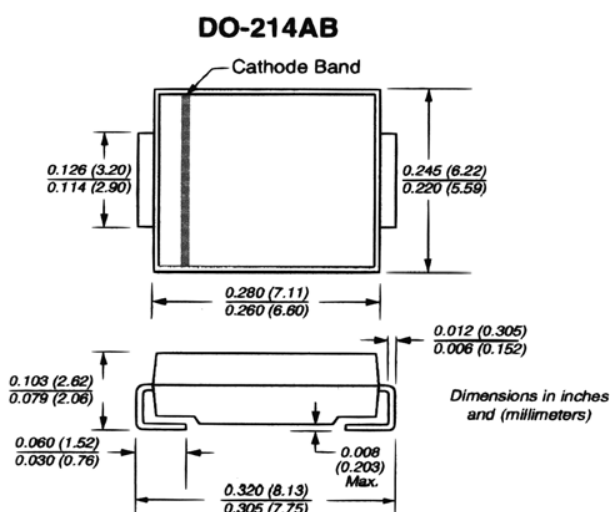
78-150 Calle Tampico, Unit 210, La Quinta, CA. U.S.A. 92253 Tel: 760-564-8656 • Fax: 760-564-2414

SMLJ 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



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)

DEVICES FOR BIPOLAR APPLICATIONS

For Bidirectional use C or CA Suffix for types SMLJ5.0 thru types SMLJ170 (e.g. SMLJ5.0C, SMLJ170CA)
 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}	100	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 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.

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RATING AND CHARACTERISTIC CURVES SMLJ SERIES

Figure 1
PEAK PULSE POWER VS PULSE TIME

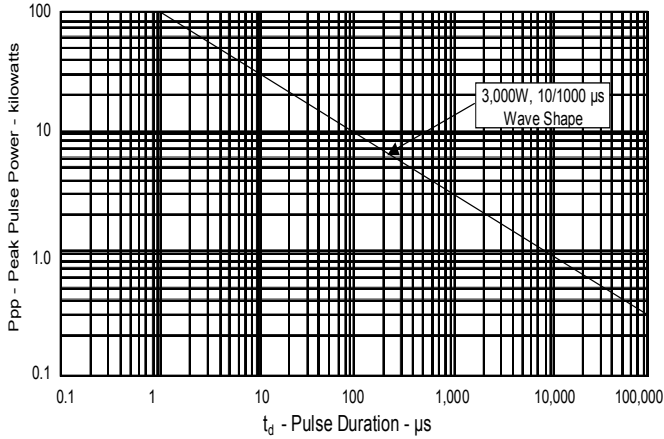


Fig. 2 – Pulse Derating Curve

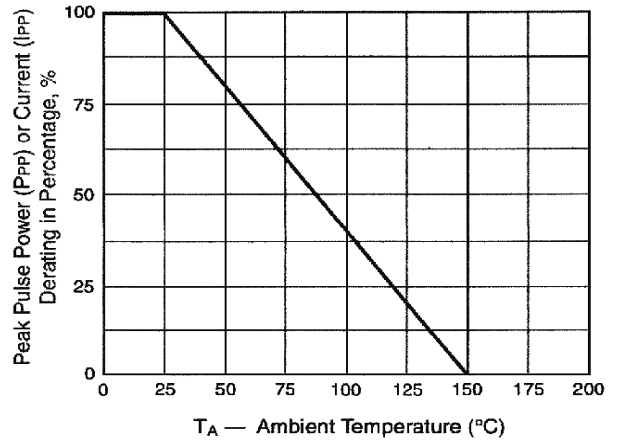


Fig. 3 – Pulse Waveform

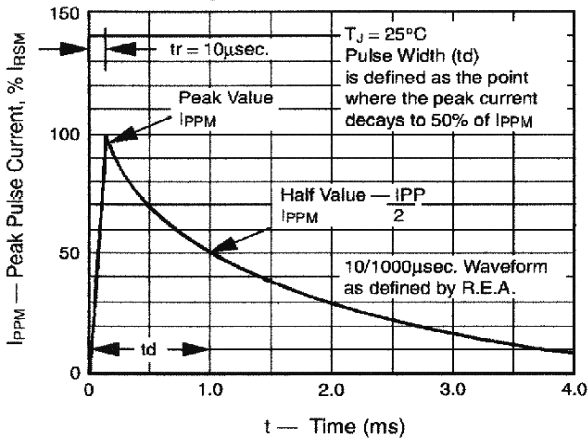


Fig. 4 – Typical Junction Capacitance

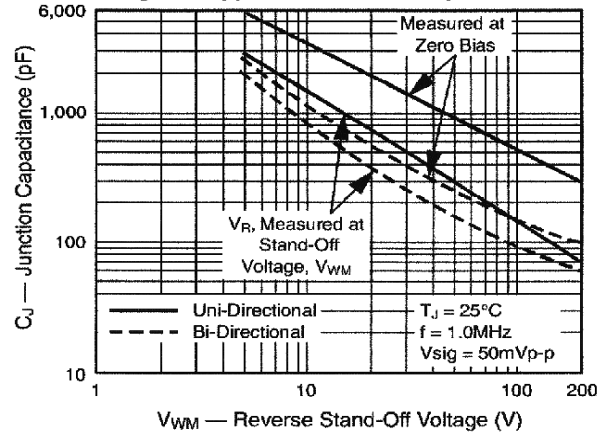


Fig. 5 – Typical Transient Thermal Impedance

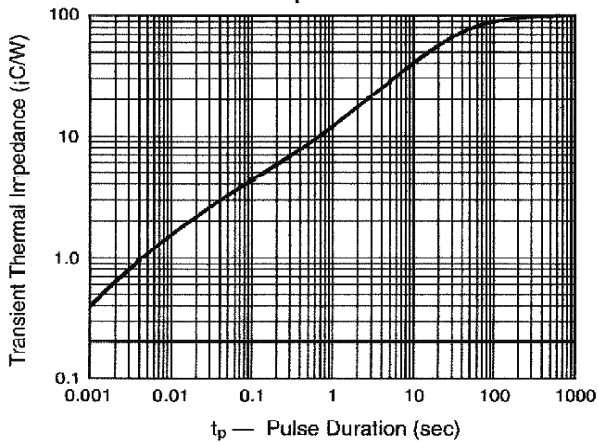
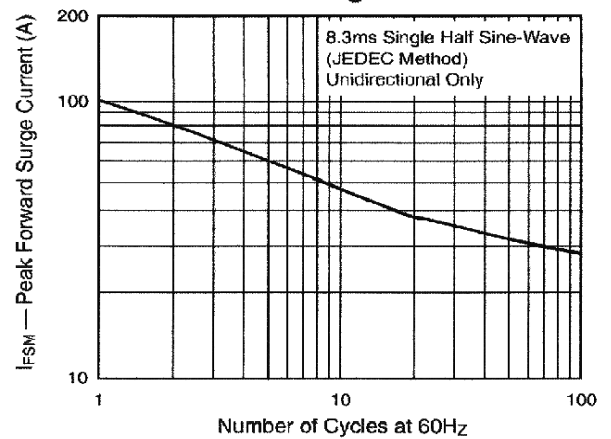


Fig. 6 – Maximum Non-Repetitive Peak Forward Surge Current



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3000 Watt Surface Mount TVS

UNI-DIRECTIONAL PART NUMBER	DEVICE MARKING CODE UNI-POLAR	DEVICE MARKING CODE BI-POLAR	REVERSE STANDOFF VOLTAGE VRWM (V)	BREAKDOWN VOLTAGE VBR (V) MIN. @ IT	BREAKDOWN VOLTAGE VBR (V) MAX. @ IT	TEST CURRENT (It) mA	MAXIMUM CLAMPING VOLTAGE @Ipp Vc (V)	PEAK PULSE CURRENT Ipp (A)	REVERSE LEAKAGE @ VRWM IR (µA)
SMLJ5.0	RDD	DDD	5.00	6.40	7.30	10	9.6	312.5	800
SMLJ5.0A	RDE	DDE	5.00	6.40	7.00	10	9.2	326.1	800
SMLJ6.0	RDF	DDF	6.00	6.67	8.15	10	11.4	263.2	800
SMLJ6.0A	RDG	DDG	6.00	6.67	7.37	10	10.3	291.3	800
SMLJ6.5	RDH	DDH	6.50	7.22	8.82	10	12.3	243.9	500
SMLJ6.5A	RDK	DDK	6.50	7.22	7.98	10	11.2	267.9	500
SMLJ7.0	PDL	DDL	7.00	7.78	9.51	10	13.3	225.6	200
SMLJ7.0A	PDM	DDM	7.00	7.78	8.60	10	12.0	250.0	200
SMLJ7.5	PDN	DDN	7.50	8.33	10.20	1	14.3	209.8	100
SMLJ7.5A	PDP	DDP	7.50	8.33	9.21	1	12.9	232.6	100
SMLJ8.0	PDQ	DDQ	8.00	8.89	10.90	1	15.0	200.0	50
SMLJ8.0A	PDR	DDR	8.00	8.89	9.83	1	13.6	220.6	50
SMLJ8.5	PDS	DDS	8.50	9.44	11.50	1	15.9	188.7	20
SMLJ8.5A	PDT	DDT	8.50	9.44	10.40	1	14.4	208.3	20
SMLJ9.0	PDU	DDU	9.00	10.00	12.20	1	16.9	177.5	10
SMLJ9.0A	PDV	DDV	9.00	10.00	11.10	1	15.4	194.8	10
SMLJ10	PDW	DDW	10.00	11.10	13.60	1	18.8	159.6	5
SMLJ10A	PDX	DDX	10.00	11.10	12.30	1	17.0	176.5	5
SMLJ11	PDY	DDY	11.00	12.20	14.90	1	20.1	149.3	5
SMLJ11A	PDZ	DDZ	11.00	12.20	13.50	1	18.2	164.8	5
SMLJ12	PED	DED	12.00	13.30	16.30	1	22.0	136.4	5
SMLJ12A	PEE	DEE	12.00	13.30	14.70	1	19.9	150.8	5
SMLJ13	PEF	DEF	13.00	14.40	17.60	1	23.8	126.1	5
SMLJ13A	PEG	DEG	13.00	14.40	15.90	1	21.5	139.5	5
SMLJ14	PEH	DEH	14.00	15.60	19.10	1	25.8	116.3	5
SMLJ14A	PEK	DEK	14.00	15.60	17.20	1	23.2	129.3	5
SMLJ15	PEL	DEL	15.00	16.70	20.40	1	26.9	111.5	5
SMLJ15A	PEM	DEM	15.00	16.70	18.50	1	24.4	123.0	5
SMLJ16	PEN	DEN	16.00	17.80	21.80	1	28.8	104.2	5
SMLJ16A	PEP	DEP	16.00	17.80	19.70	1	26.0	115.4	5
SMLJ17	PEQ	DEQ	17.00	18.90	23.10	1	30.5	98.4	5
SMLJ17A	PER	DER	17.00	18.90	20.90	1	27.6	108.7	5
SMLJ18	PES	DES	18.00	20.00	24.40	1	32.2	93.2	5
SMLJ18A	PET	DET	18.00	20.00	22.10	1	29.2	102.7	5
SMLJ20	PEU	DEU	20.00	22.20	27.10	1	35.8	83.8	5
SMLJ20A	PEV	DEV	20.00	22.20	24.50	1	32.4	92.6	5
SMLJ22	PEW	DEW	22.00	24.40	29.80	1	39.4	76.1	5
SMLJ22A	PEX	DEX	22.00	24.40	26.90	1	35.5	84.5	5
SMLJ24	PEY	DEY	24.00	26.70	32.60	1	43.0	69.8	5
SMLJ24A	PEZ	DEZ	24.00	26.70	29.50	1	38.9	77.1	5
SMLJ26	PFD	DFD	26.00	28.90	35.30	1	46.6	64.4	5
SMLJ26A	PFE	DFE	26.00	28.90	31.90	1	42.1	71.3	5
SMLJ28	PFF	DFF	28.00	31.10	38.00	1	50.1	59.5	5
SMLJ28A	PFG	DFG	28.00	31.10	34.40	1	45.4	66.1	5
SMLJ30	PFH	DFH	30.00	33.30	40.70	1	53.5	56.1	5
SMLJ30A	PFK	DFK	30.00	33.30	36.80	1	48.4	62.0	5
SMLJ33	PFL	DFL	33.00	36.70	44.90	1	59.0	50.8	5
SMLJ33A	PFM	DFM	33.00	36.70	40.60	1	53.3	56.3	5

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SMLJ36	PFN	DFN	36.00	40.00	48.90	1	64.3	46.7	5
SMLJ36A	PFP	DFP	36.00	40.00	44.20	1	58.1	51.6	5
SMLJ40	PFQ	DFQ	40.00	44.40	54.30	1	71.4	42.0	5
SMLJ40A	PFR	DFR	40.00	44.40	49.10	1	64.5	46.5	5
SMLJ43	PFS	DFR	43.00	47.80	58.40	1	76.7	39.1	5
SMLJ43A	PFT	DFT	43.00	47.80	52.80	1	69.4	43.2	5
SMLJ45	PFU	DFU	45.00	50.00	61.10	1	80.3	37.4	5
SMLJ45A	PFV	DFV	45.00	50.00	55.30	1	72.7	41.3	5
SMLJ48	PFW	DFW	48.00	53.30	65.20	1	85.5	35.1	5
SMLJ48A	PFX	DFX	48.00	53.30	58.90	1	77.4	38.8	5
SMLJ51	PFY	DFY	51.00	56.70	69.30	1	91.1	32.9	5
SMLJ51A	PFZ	DFZ	51.00	56.70	62.70	1	82.4	36.4	5
SMLJ54A	PGE	DGE	54.00	60.00	66.30	1	87.1	34.4	5
SMLJ58	PGF	DGF	58.00	64.40	78.70	1	103.0	29.1	5
SMLJ58A	PGG	DGG	58.00	64.40	71.20	1	93.6	32.1	5
SMLJ60	PGH	DGH	60.00	66.70	81.50	1	107.0	28.0	5
SMLJ60A	PGK	DGK	60.00	66.70	73.70	1	96.8	31.0	5
SMLJ64	PGL	DGL	64.00	71.10	86.90	1	114.0	26.3	5
SMLJ64A	PGM	DGM	64.00	71.10	78.60	1	103.0	29.1	5
SMLJ70	PGN	DGN	70.00	77.80	95.10	1	125.0	24.0	5
SMLJ70A	PGP	DGP	70.00	77.80	86.00	1	113.0	26.5	5
SMLJ75	PGQ	DGQ	75.00	83.30	102.00	1	134.0	22.4	5
SMLJ75A	PGR	DGR	75.00	83.30	92.10	1	121.0	24.8	5
SMLJ78	PGS	DGS	78.00	86.70	106.00	1	139.0	21.6	5
SMLJ78A	PGT	DGT	78.00	86.70	95.80	1	126.0	23.8	5
SMLJ85	PGU	DGU	85.00	94.40	115.00	1	151.0	19.9	5
SMLJ85A	PGV	DGV	85.00	94.40	104.00	1	137.0	21.9	5
SMLJ90	PGW	DGW	90.00	100.00	122.00	1	160.0	18.8	5
SMLJ90A	PGX	DGX	90.00	100.00	111.00	1	146.0	20.5	5
SMLJ100	PGY	DGY	100.00	111.00	136.00	1	179.0	16.8	5
SMLJ100A	PGZ	DGZ	100.00	111.00	123.00	1	162.0	18.5	5
SMLJ110	PHD	DHD	110.00	122.00	149.00	1	196.0	15.3	5
SMLJ110A	PHE	DHE	110.00	122.00	135.00	1	177.0	16.9	5
SMLJ120	PHF	DHF	120.00	133.00	163.00	1	214.0	14.0	5
SMLJ120A	PHG	DHG	120.00	133.00	147.00	1	193.0	15.5	5
SMLJ130	PHH	DHH	130.00	144.00	176.00	1	230.0	13.0	5
SMLJ130A	PHK	DHK	130.00	144.00	159.00	1	209.0	14.4	5
SMLJ150	PHL	DHL	150.00	167.00	204.00	1	268.0	11.2	5
SMLJ150A	PHM	DHM	150.00	167.00	185.00	1	243.0	12.3	5
SMLJ160	PHN	DHN	160.00	178.00	218.00	1	287.0	10.5	5
SMLJ160A	PHP	DHP	160.00	178.00	197.00	1	259.0	11.6	5
SMLJ170	PHQ	DHQ	170.00	189.00	231.00	1	304.0	9.9	5
SMLJ170A	PHR	DHR	170.00	189.00	209.00	1	275.0	10.9	5

For Bidirectional type having Vrwm of 10volts anL less, the IR limit is Double.