



**INTERNATIONAL
SEMICONDUCTOR, INC.**

TRANSIENT VOLTAGE SUPPRESSORS

**SMLJ5.0
thru
SMLJ170A**

SURFACE MOUNT

3000 WATT PEAK POWER

5.0 to 170 VOLTS

MAXIMUM RATINGS AND CHARACTERISTICS

Ratings at 25°C ambient unless otherwise specified

RATING	SYMBOL	VALUE	UNITS
Peak Power Dissipation at $T_A=25^\circ\text{C}$, $T_p=1\text{ms}$ (Note 1)	P_{PK}	3000	Watts
Forward Surge Rating, 1/120 sec at 25°C (Excluding Bi-Directional)	I_{FS}	200	Amps
Clamping Time 0 Volts to V_{BR}	$t_{clamping}$	$< 1 \times 10^{-12}$	Sec
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +175	$^\circ\text{C}$

For Bi-Directional indicate a C or CA suffix after the part number

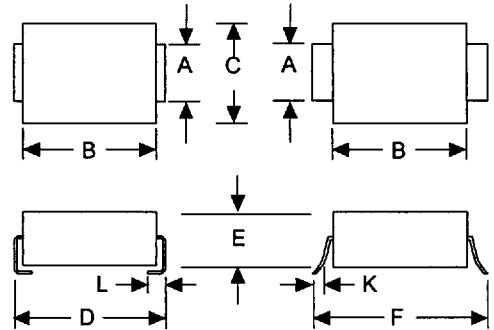
FEATURES

- 3000 Watts Peak Power
- Available in ranges from 5.0 to 170 volts
- Protects sensitive semiconductor circuits
- Available in Uni-Directional and Bi-Directional
- Low Inductance

NOTES TO CHARACTERISTICS AND SPECIFICATIONS:

1. Non-repetitive current pulse, per Fig.3 and derated above $T_A = 25^\circ\text{C}$ per Fig. 2
2. Mounted on copper leaf area of 0.79 sq in (20 sq mm)
3. 8.3 ms half sine-wave, duty cycle = 4 pulses per minute maximum
4. V_{BR} measured after I_T applied for 300 us. I_T = Square Wave Pulse or equivalent.
5. Surge current waveform per Fig.3 and derated per Fig. 4.

PACKAGE DIMENSIONS



DO-214AB

DO-215AB

A B C D E F K L

Dimensions In Inches

Min	0.115	0.260	0.220	0.305	0.075	0.380	0.025	0.030
Max	0.121	0.280	0.245	0.320	0.095	0.400	0.040	0.060

Dimensions In Millimeters

Min	2.92	6.60	5.59	7.75	1.90	9.65	0.635	0.760
Max	3.07	7.11	6.22	8.13	2.41	10.16	1.016	1.520

To Specify G Wing (Gull Wing) in place of J Wing, (J-Bend) change designation J to G

MECHANICAL CHARACTERISTICS

CASE: Molded Surface Mount

TERMINALS: Gull Wing or Modified J-Bend, tin lead plated

POLARITY: Cathode indicated by band. No marking on Bi-Directional Devices.

PACKAGING: Standard 12 mm tape (See EIA Std. RS-481.)

THERMAL RESISTANCE: 20°C/W (typical) junction to lead (tab) at mounting plane.

Figure 2: CAPACITANCE at STAND-OFF VOLTAGE

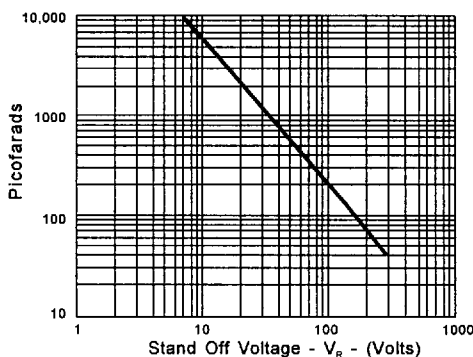


FIGURE 3 - PULSE WAVEFORM

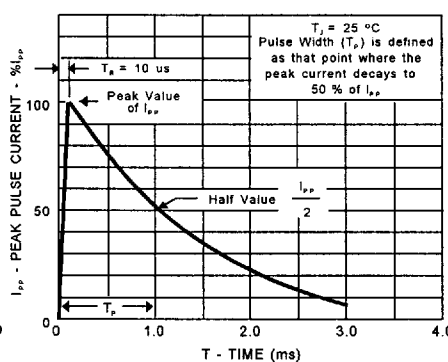
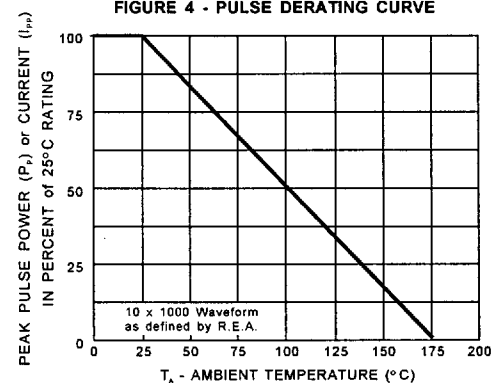


FIGURE 4 - PULSE DERATING CURVE



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SMLG and SMLJ Series ELECTRICAL CHARACTERISTICS at 25°C

ISI PART NUMBER	REVERSE STAND-OFF VOLTAGE (Note 4) V_R Volts	BREAKDOWN VOLTAGE			MAXIMUM CLAMPING VOLTAGE @ IPP (1 msec) VC Volts	MAXIMUM PEAK PULSE CURRENT (Fig. 2) I_{p-p} Amps	MAXIMUM REVERSE LEAKAGE @ V_R I_R μ A	MAXIMUM VOLTAGE VARIATION OF V_{BR} mV/°C
		Min V_{BR} Volts	Max V_{BR} Volts	@ IR mA				
SMLJ5.0	5.0	6.40	7.30	10	9.6	312.5	1000	5.0
SMLJ5.0A	5.0	6.40	7.00	10	9.2	326.0	1000	5.0
SMLJ6.0	6.0	6.67	8.15	10	11.4	263.2	1000	5.0
SMLJ6.0A	6.0	6.67	7.37	10	10.3	291.3	1000	5.0
SMLJ6.5	6.5	7.22	8.82	10	12.3	243.9	500	5.0
SMLJ6.6A	6.5	7.22	7.98	10	11.2	267.9	500	5.0
SMLJ7.0	7.0	7.78	9.51	10	13.3	225.6	200	5.0
SMLJ7.0A	7.0	7.78	8.60	10	12.0	250.0	200	5.0
SMLJ7.5	7.5	8.33	10.20	1	14.3	209.8	100	7.0
SMLJ7.5A	7.5	8.33	9.21	1	12.9	232.6	100	7.0
SMLJ8.0	8.0	8.89	10.90	1	15.0	200.0	50	7.0
SMLJ8.0A	8.0	8.89	9.83	1	13.6	220.6	50	7.0
SMLJ8.5	8.5	9.44	11.5	1	15.9	188.6	25	8.0
SMLJ8.5a	8.5	9.44	10.4	1	14.4	208.4	25	8.0
SMLJ9.0	9.0	10.0	12.2	1	16.9	177.4	10	9.0
SMLJ9.0A	9.0	10.0	11.1	1	15.4	194.8	10	9.0
SMLJ10	10	11.1	13.6	1	18.8	159.6	5	10
SMLJ10A	10	11.1	12.3	1	17.0	176.4	5	10
SMLJ11	11	12.2	14.9	1	20.1	149.2	5	11
SMLJ11A	11	12.2	13.5	1	18.2	164.8	5	11
SMLJ12	12	13.3	16.3	1	22.0	136.4	5	12
SMLJ12A	12	13.3	14.7	1	19.9	150.6	5	12
SMLJ13	13	14.4	17.6	1	23.8	126.0	5	13
SMLJ13A	13	14.4	15.9	1	21.5	139.4	5	13
SMLJ14	14	15.6	19.1	1	25.8	116.2	5	14
SMLJ14A	14	15.6	17.2	1	23.2	129.4	5	14
SMLJ15	15	16.7	20.4	1	26.9	111.6	5	16
SMLJ15A	15	16.7	18.5	1	24.4	123.0	5	16
SMLJ16	16	17.8	21.8	1	28.8	104.2	5	19
SMLJ16A	16	17.8	19.7	1	26.0	115.4	5	17
SMLJ17	17	18.9	23.1	1	30.5	98.4	5	20
SMLJ17A	17	18.9	20.9	1	27.6	106.6	5	19
SMLJ18	18	20.0	24.4	1	32.2	93.2	5	21
SMLJ18A	18	20.0	22.1	1	29.2	102.8	5	20
SMLJ20	20	22.2	27.1	1	35.8	83.8	5	23
SMLJ20A	20	22.2	24.5	1	32.4	92.6	5	23
SMLJ22	22	24.4	29.8	1	39.4	76.2	5	28
SMLJ22A	22	24.4	26.9	1	35.5	84.4	5	25
SMLJ24	24	26.7	32.6	1	43.0	69.8	5	31
SMLJ24A	24	26.7	29.5	1	38.9	77.2	5	28
SMLJ26	26	28.9	35.3	1	46.6	64.4	5	31
SMLJ26A	26	28.9	31.9	1	42.1	71.2	5	30
SMLJ28	28	31.1	38.0	1	50.1	60.0	5	35
SMLJ28A	28	31.1	34.4	1	45.4	66.0	5	31
SMLJ30	30	33.3	40.7	1	53.5	56.0	5	39
SMLJ30A	30	33.3	36.8	1	48.4	62.0	5	36
SMLJ33	33	36.7	44.9	1	59.0	50.4	5	42
SMLJ33A	33	36.7	40.6	1	53.3	56.2	5	39
SMLJ36	36	40.0	48.9	1	64.3	46.6	5	46
SMLJ36A	36	40.0	44.2	1	58.1	51.6	5	41
SMLJ40	40	44.4	54.3	1	71.4	42.0	5	51
SMLJ40A	40	44.4	49.1	1	64.5	46.4	5	46
SMLJ43	43	47.8	58.4	1	76.7	39.2	5	55
SMLJ43A	43	47.8	52.8	1	69.4	43.2	5	50
SMLJ45	45	50.0	61.1	1	80.3	37.4	5	58
SMLJ45A	45	50.0	55.3	1	72.7	41.2	5	52
SMLJ48	48	53.3	65.1	1	85.5	35.0	5	63
SMLJ48A	48	53.3	58.9	1	77.4	38.8	5	56
SMLJ51	51	56.7	69.3	1	91.1	37.0	5	66
SMLJ51A	51	56.7	62.7	1	82.4	36.4	5	61
SMLJ54	54	60.0	73.3	1	96.3	31.2	5	71
SMLJ54A	54	60.0	66.3	1	87.1	34.4	5	65
SMLJ58	58	64.4	78.7	1	103.0	39.2	5	78
SMLJ58A	58	64.4	71.2	1	93.6	32.0	5	70
SMLJ60	60	66.7	81.5	1	107.0	28.0	5	80
SMLJ60A	60	66.7	73.7	1	96.8	31.0	5	71
SMLJ64	64	71.1	86.9	1	114.0	26.4	5	86
SMLJ64A	64	71.1	78.6	1	103.0	29.2	5	76
SMLJ70	70	77.8	95.1	1	125	24.0	5	94
SMLJ70A	70	77.8	86.0	1	113	26.6	5	85
SMLJ75	75	83.3	102.0	1	134	22.4	5	101
SMLJ75A	75	83.3	92.1	1	121	24.8	5	91
SMLJ78	78	86.7	108.0	1	139	21.6	5	105
SMLJ78A	78	86.7	98.8	1	128	22.8	5	95
SMLJ85	85	94.4	115.0	1	151	19.8	5	114
SMLJ85A	85	94.4	104.0	1	137	20.8	5	103
SMLJ90	90	100	122	1	160	18.8	5	121
SMLJ90A	90	100	111	1	146	20.6	5	110
SMLJ100	100	111	136	1	179	16.8	5	135
SMLJ100A	100	111	123	1	162	18.6	5	123
SMLJ110	110	122	149	1	196	15.4	5	148
SMLJ110A	110	122	135	1	177	16.8	5	133
SMLJ120	120	133	163	1	214	14.0	5	162
SMLJ120A	120	133	147	1	193	15.6	5	146
SMLJ130	130	144	176	1	231	13.0	5	175
SMLJ130A	130	144	159	1	209	14.4	5	158
SMLJ150	150	167	204	1	268	11.2	5	203
SMLJ150A	150	167	185	1	243	12.4	5	184
SMLJ160	160	178	218	1	287	10.4	5	217
SMLJ160A	160	178	197	1	259	11.6	5	196
SMLJ170	170	189	231	1	304	9.8	5	230
SMLJ170A	170	189	209	1	275	11.0	5	208

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