V. Transient Voltage Suppressor

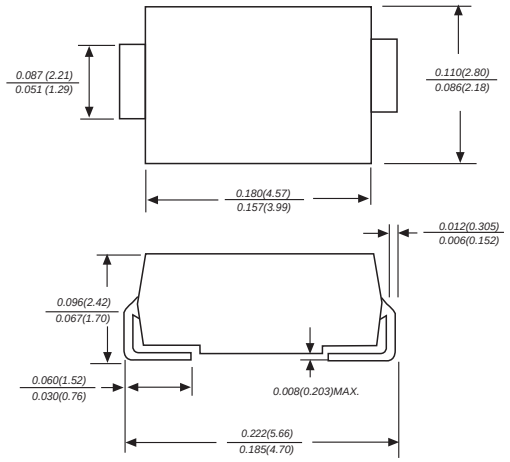
600W Surface Mount TVS (Stand-off Voltage: 5.0~188 Volts)
SMA6J Series (Package: SMA(DO-214AC))

FEATURES

- Optimized for LAN protection applications
- Ideal for ESD protection of data lines in accordance with IEC 1000-4-2 (IEC801-2)
- Ideal for EFT protection of data lines in accordance with IEC 1000-4-4 (IEC801-2)
- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Glass passivated junction
- 600W peak pulse power capability
- Excellent clamping capability
- Low incremental surge resistance
- Fast response time: typically less than 1.0ps from 0V to $V_{(BR)}$ min
- High temperature soldering guaranteed: 265℃/10s at terminals

MECHANICAL DATA

- Case : JEDEC DO-214AC molded plastic body over passivated junction
- Terminals : Solder plated, solderable per MIL-STD 750, method 2026
- Polarity : Color band denotes cathode end except for bi-directional types
- Mounting Position : Any
- Weight : 0.058 grams



Case: SMA
Dimensions in inches and (millimetres)

Devices for bi-directional applications

For bi-directional devices use suffix “CA” for types SMA6J5.0CA thru SMA6J188CA (e.g. SMA6J33CA)
Electrical characteristics apply in both directions.

Maximum Ratings & Characteristics

Ratings at 25℃ ambient temperature unless otherwise specified.

Ratings	Symbol	Value	Units
Peak pulse power dissipation with a 10/1000μs waveform (Note 1, 2, Fig.1)	P_{PPM}	Minimum 600	Watts
Peak forward surge current (Note 1, 2, 3)	I_{FSM}	100.0	Amps
Peak pulse current with a 10/1000μs waveform (Note 1)	I_{PPM}	See Table 1	Amps
Steady state power dissipation (Note 3)	$P_{M(AV)}$	5.0	Watts
Maximum instantaneous forward voltage at 50A (Note 3,4) unidirectional only	V_F	3.5/5.0	Volts
Operating junction and storage temperature range	Tj, Tstg,	-55 to +150	℃

Note:
1. Non-repetitive current pulse, per Fig.3 and derated above Ta = 25℃ per Fig.2
2. Mounted on 5.0mm^2 copper pads to each terminal.
3. Measured on 8.3ms single half sine-wine for uni-directional devices only.
4. V_F = 3.5V on SMA6J5.0A thru SMA6J85A devices and V_F = 5.0V on SMA6J100A thru SMA6J188A devices.

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Device Type	Device Marking Code	I_{RM} max @ V_{RM}			$V_{(BR)}$ @ I_R				V_{CL} @ I_{PPM} 10/1000 μs		R_D 10/1000 μs	V_{CL} @ I_{PPM} 8/20 μs		R_D 8/20 μs	αT
		25℃	85℃		Min	Typ	Max		Max			Max			Max
		μA		V	V			mA	V	A	Ω	V	A	Ω	10^{-4}/℃
SMA6J5.0(C)A	Full PN	10	50	5.0	6.40	6.74	7.07	10	9.1	68.0	0.029	13.4	298	0.021	5.7
SMA6J6.0(C)A	Full PN	10	50	6.0	6.70	7.05	7.41	10	9.5	61.0	0.034	13.7	290	0.022	5.9
SMA6J6.5(C)A	Full PN	10	50	6.5	7.20	7.58	7.96	10	10.2	56.0	0.040	14.5	276	0.024	6.1
SMA6J8.5(C)A	Full PN	10	50	8.5	9.40	9.90	10.40	1	13.3	41.7	0.070	18.7	205	0.041	7.3
SMA6J10(C)A	Full PN	0.2	1	10	11.1	11.7	12.3	1	15.7	37.0	0.093	19.6	184	0.040	7.8
SMA6J12(C)A	Full PN	0.2	1	12	13.3	14.0	14.7	1	18.8	31.0	0.133	23.5	157	0.056	8.3
SMA6J13(C)A	Full PN	0.2	1	13	14.4	15.2	15.9	1	20.4	29.0	0.154	23.9	147	0.054	8.4
SMA6J15(C)A	Full PN	0.2	1	15	16.7	17.6	18.5	1	23.6	25.1	0.206	27.7	123	0.075	8.8
SMA6J18(C)A	Full PN	0.2	1	18	20.0	21.1	22.1	1	28.3	21.5	0.288	33.2	102	0.108	9.2
SMA6J20(C)A	Full PN	0.2	1	20	22.2	23.4	24.5	1	31.4	19.4	0.354	36.8	93.0	0.132	9.4
SMA6J24(C)A	Full PN	0.2	1	24	26.7	28.1	29.5	1	37.8	16.0	0.516	44.3	80.0	0.184	9.6
SMA6J26(C)A	Full PN	0.2	1	26	28.9	30.4	31.9	1	40.9	14.9	0.600	47.9	75.0	0.213	9.7
SMA6J28(C)A	Full PN	0.2	1	28	31.1	32.7	34.4	1	44.0	13.8	0.697	51.6	68.0	0.253	9.8
SMA6J33(C)A	Full PN	0.2	1	33	36.7	38.6	40.6	1	51.9	11.8	0.963	60.8	57.0	0.356	10.0
SMA6J40(C)A	Full PN	0.2	1	40	44.4	46.7	49.1	1	62.8	9.7	1.42	73.6	48.0	0.511	10.1
SMA6J48(C)A	Full PN	0.2	1	48	53.3	56.1	58.9	1	75.4	8.1	2.04	88.4	40.0	0.736	10.3
SMA6J58(C)A	Full PN	0.2	1	58	64.4	67.8	71.2	1	91.1	6.7	2.97	100	33.0	0.863	10.4
SMA6J70(C)A	Full PN	0.2	1	70	77.8	81.9	86.0	1	110	5.5	4.38	120	27.0	1.27	10.5
SMA6J85(C)A	Full PN	0.2	1	85	94.0	99.0	104	1	134	4.6	6.45	146	22.5	1.85	10.6
SMA6J100(C)A	Full PN	0.2	1	100	111	117	123	1	157	3.8	9.03	172	19.0	2.58	10.7
SMA6J130(C)A	Full PN	0.2	1	130	144	152	159	1	204	3.0	14.9	223	15.0	4.24	10.8
SMA6J154(C)A	Full PN	0.2	1	154	171	180	189	1	242	2.4	22.1	265	12.6	6.00	10.8
SMA6J170(C)A	Full PN	0.2	1	170	189	199	209	1	275	2.2	30.0	292	11.3	7.39	10.8
SMA6J188(C)A	Full PN	0.2	1	188	209	220	231	1	328	2.0	48.5	323	10.3	8.97	10.8

Ratings and Characteristic Curves of SMA6J Series

FIG. 1-PEAK PULSE POWER RATING CURVE

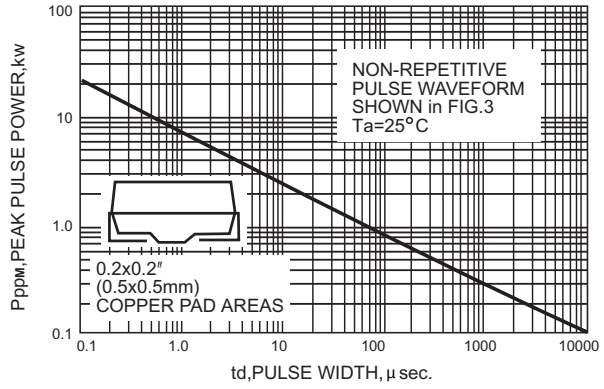

FIG. 2-PULSE DERATING CURVE

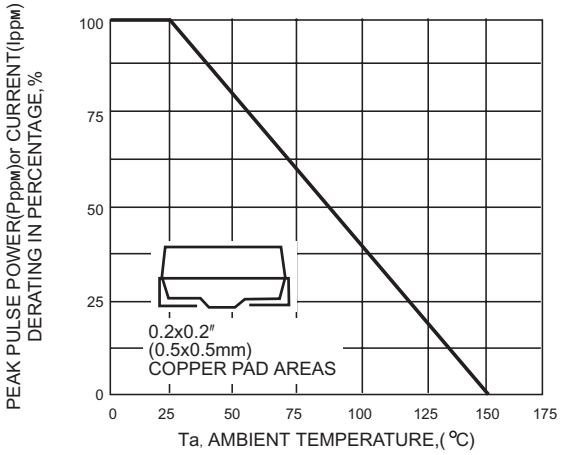

FIG.3-PULSE WAVEFORM

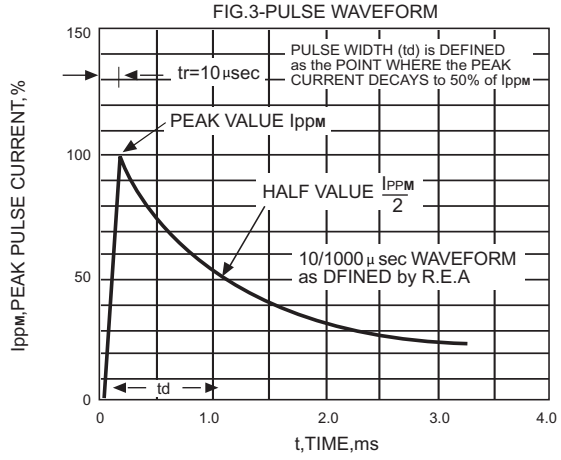

FIG. 4-TYPICAL JUNCTIONAL CAPACITANCE
UNIDIRECTIONAL

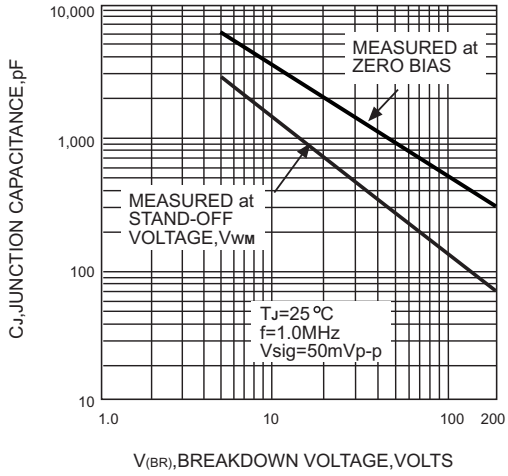

FIG.5-STEADY STATE POWER DERATING CURVE

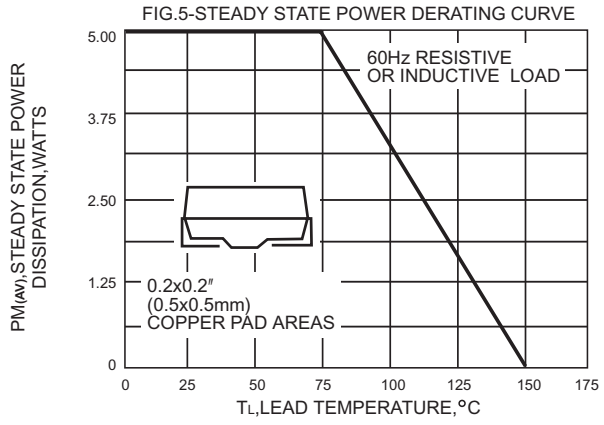

FIG.6-MAXIMUM NON-REPETITIVE FORWARD SURGE
CURRENT UNIDIRECTIONAL ONLY