

SuperTVS – 600W Surface mount transient voltage suppressor

1. Features

- Glass passivated chip
- 600W peak pulse power capability with a 10/1000us waveform, repetition rate (duty cycle): 0.01%
- Excellent clamping capability
- Low reverse leakage
- Fast response time

2. Mechanical Data

- Case: DO-214AC (SMA) molded plastic
- Lead: solderable per MIL-STD-750 Method 2026
- Epoxy: UL 94V-0 rate flame retardant

3. Package and Circuit

Package	Marking	BI- directional	UNI-directional
SMA			

4. Maximum Ratings and Characteristics

Ratings at 25°C ambient temperature unless otherwise specified

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation on 10/1000us waveform (Note1)	P_{PPM}	600	W
Peak Pulse Current With a 10/1000us Waveform (Note1)	I_{PP}	See Next Table	A
Peak Forward Surge Current (Note2)	I_{FSM}	60	A
Power Dissipation On Infinite Heatsink at $T_L=75^{\circ}\text{C}$	P_D	5	W
Operating Junction Temperature and Storage Temperature Range	T_j, T_{stg}	-55 ~ +150	$^{\circ}\text{C}$

Note:

1. Non-repetitive current pulse, per Fig.5 and derated above $T_A=25^{\circ}\text{C}$ per Fig.1;
2. Measured on 8.3ms single half sine-wave or equivalent square wave, duty cycle=4 pulses per minute maximum.

5. Electrical Characteristics (TA=25°C, unless otherwise noted)

Type		Marking Code		Reverse Stand-off Voltage	Breakdown Voltage		Test Current	Reverse Leakage	Max. Clamp Voltage	Peak Pulse Current
					VBR @IT		IT	IR@ VRWM	VC@IPP	IPP
					VRWM	Min Max				
UNI	BI	Uni	Bi	V	V	V	mA	μA	V	A
SMA6J5.0A	SMA6J5.0CA	KE	AE	5	6.4	7	10	800	9.2	65.3
SMA6J6.0A	SMA6J6.0CA	KG	AG	6	6.67	7.37	10	800	10.3	58.3
SMA6J6.5A	SMA6J6.5CA	KK	AK	6.5	7.22	7.98	10	500	11.2	53.6
SMA6J7.0A	SMA6J7.0CA	KM	AM	7	7.78	8.6	10	200	12	50.0
SMA6J7.5A	SMA6J7.5CA	KP	AP	7.5	8.33	9.21	1	100	12.9	46.6
SMA6J8.0A	SMA6J8.0CA	KR	AR	8	8.89	9.83	1	50	13.6	44.2
SMA6J8.5A	SMA6J8.5CA	KT	AT	8.5	9.44	10.4	1	20	14.4	41.7
SMA6J9.0A	SMA6J9.0CA	KV	AV	9	10	11.1	1	10	15.4	39.0
SMA6J10A	SMA6J10CA	KX	AX	10	11.1	12.3	1	5	17	35.3
SMA6J11A	SMA6J11CA	KZ	AZ	11	12.2	13.5	1	1	18.2	33.0
SMA6J12A	SMA6J12CA	LE	BE	12	13.3	14.7	1	1	19.9	30.2
SMA6J13A	SMA6J13CA	LG	BG	13	14.4	15.9	1	1	21.5	28.0
SMA6J14A	SMA6J14CA	LK	BK	14	15.6	17.2	1	1	23.2	25.9
SMA6J15A	SMA6J15CA	LM	BM	15	16.7	18.5	1	1	24.4	24.6
SMA6J16A	SMA6J16CA	LP	BP	16	17.8	19.7	1	1	26	23.1
SMA6J17A	SMA6J17CA	LR	BR	17	18.9	20.9	1	1	27.6	21.8
SMA6J18A	SMA6J18CA	LT	BT	18	20	22.1	1	1	29.2	20.6
SMA6J20A	SMA6J20CA	LV	BV	20	22.2	24.5	1	1	32.4	18.6
SMA6J22A	SMA6J22CA	LX	BX	22	24.4	26.9	1	1	35.5	16.9
SMA6J24A	SMA6J24CA	LZ	BZ	24	26.7	29.5	1	1	38.9	15.5
SMA6J26A	SMA6J26CA	ME	CE	26	28.9	31.9	1	1	42.1	14.3
SMA6J28A	SMA6J28CA	MG	CG	28	31.1	34.4	1	1	45.4	13.3
SMA6J30A	SMA6J30CA	MK	CK	30	33.5	36.8	1	1	48.4	12.4
SMA6J33A	SMA6J33CA	MM	CM	33	36.7	40.6	1	1	53.3	11.3
SMA6J36A	SMA6J36CA	MP	CP	36	40	44.2	1	1	58.1	10.4
SMA6J40A	SMA6J40CA	MR	CR	40	44.4	49.1	1	1	64.5	9.3
SMA6J43A	SMA6J43CA	MT	CT	43	47.8	52.8	1	1	69.4	8.7
SMA6J45A	SMA6J45CA	MV	CV	45	50	55.3	1	1	72.7	8.3
SMA6J48A	SMA6J48CA	MX	CX	48	53.3	58.9	1	1	77.4	7.8
SMA6J51A	SMA6J51CA	MZ	CZ	51	56.7	62.7	1	1	82.4	7.3
SMA6J54A	SMA6J54CA	NE	DE	54	60	66.3	1	1	87.1	6.9

Type		Marking Code		Reverse Stand-off Voltage	Breakdown Voltage		Test Current	Reverse Leakage	Max. Clamp Voltage	Peak Pulse Current
					VBR @IT		IT	IR@ VRWM	VC@IPP	IPP
				VRWM	Min	Max				
UNI	BI	Uni	Bi	V	V	V	mA	μA	V	A
SMA6J58A	SMA6J58CA	NG	DG	58	64.4	71.2	1	1	93.6	6.5
SMA6J60A	SMA6J60CA	NK	DK	60	66.7	73.7	1	1	96.8	6.2
SMA6J64A	SMA6J64CA	NM	DM	64	71.1	78.6	1	1	103	5.9
SMA6J70A	SMA6J70CA	NP	DP	70	77.8	86	1	1	113	5.3
SMA6J75A	SMA6J75CA	NR	DR	75	83.3	92.1	1	1	121	5.0
SMA6J78A	SMA6J78CA	NT	DT	78	86.7	95.8	1	1	126	4.8
SMA6J85A	SMA6J85CA	NV	DV	85	94.4	104	1	1	137	4.4
SMA6J90A	SMA6J90CA	NX	DX	90	100	111	1	1	146	4.1
SMA6J100A	SMA6J100CA	NZ	DZ	100	111	123	1	1	162	3.7
SMA6J110A	SMA6J110CA	PE	EE	110	122	135	1	1	177	3.4
SMA6J120A	SMA6J120CA	PG	EG	120	133	147	1	1	193	3.1
SMA6J130A	SMA6J130CA	PK	EK	130	144	159	1	1	209	2.9
SMA6J150A	SMA6J150CA	PM	EM	150	167	185	1	1	243	2.5
SMA6J160A	SMA6J160CA	PP	EP	160	178	197	1	1	259	2.3
SMA6J170A	SMA6J170CA	PR	ER	170	189	209	1	1	275	2.2
SMA6J180A	SMA6J180CA	PT	ET	180	201	222	1	1	292	2.1
SMA6J190A	SMA6J190CA	PA	EC	190	209	243	1	1	308	2.0
SMA6J200A	SMA6J200CA	PV	EV	200	224	247	1	1	324	1.9
SMA6J210A	SMA6J210CA	PB	ED	210	231	268	1	1	340	1.8
SMA6J220A	SMA6J220CA	PX	EX	220	246	272	1	1	356	1.7
SMA6J250A		PZ		250	279	309	1	1	405	1.5
SMA6J300A		QE		300	335	371	1	1	486	1.3
SMA6J350A		QG		350	391	432	1	1	567	1.1
SMA6J400A		QK		400	447	494	1	1	648	0.9
SMA6J440A		QM		440	492	543	1	1	713	0.9

6. Ratings and Characteristic Curves ($T_A = 25^\circ\text{C}$ unless otherwise note)

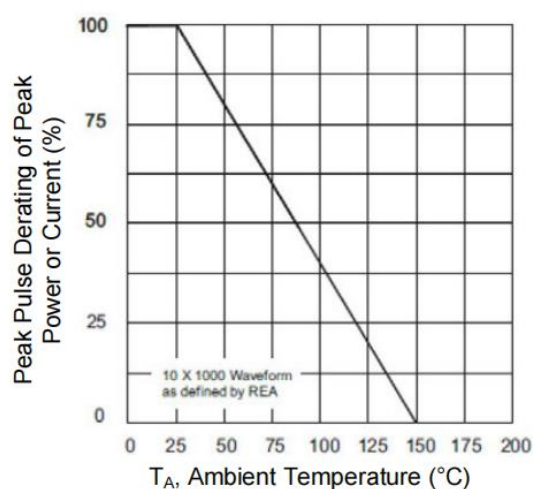


Figure 1. Pulse Derating Curve

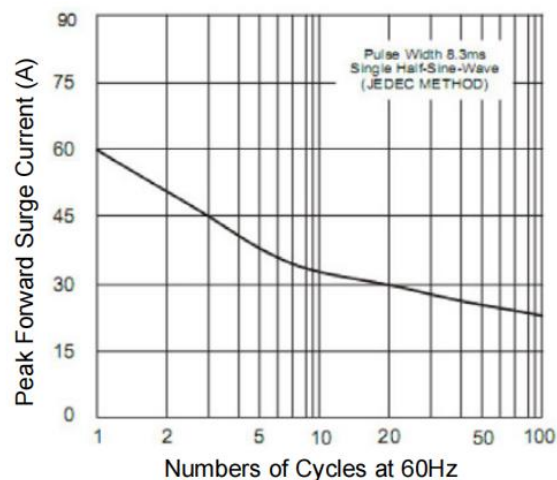


Figure 2. Maximum Non-Repetitive Surge Current

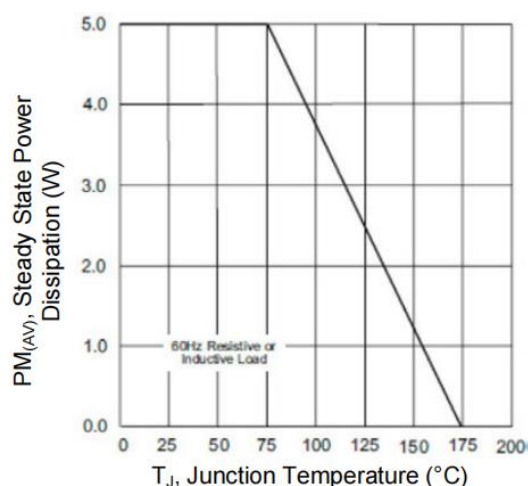


Figure 3. Steady State Power Derating Curve

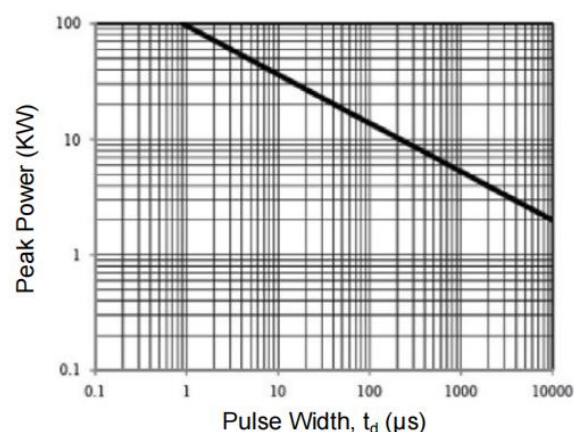


Figure 4. Peak Pulse Power Rating Curve

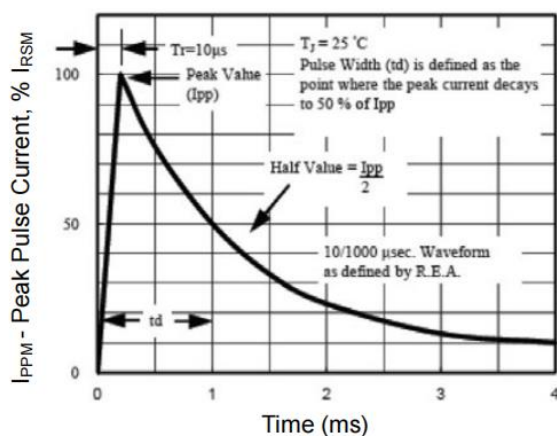


Figure 5. Pulse Waveform

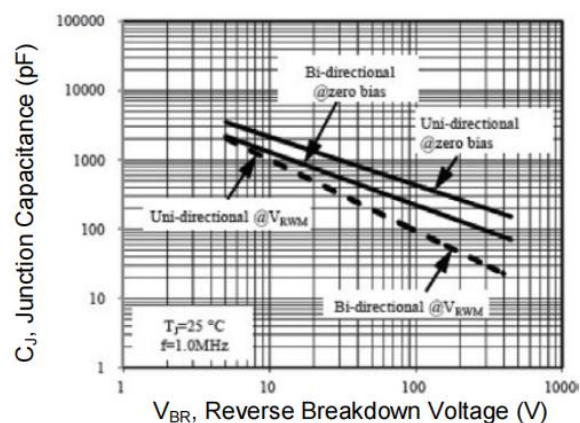
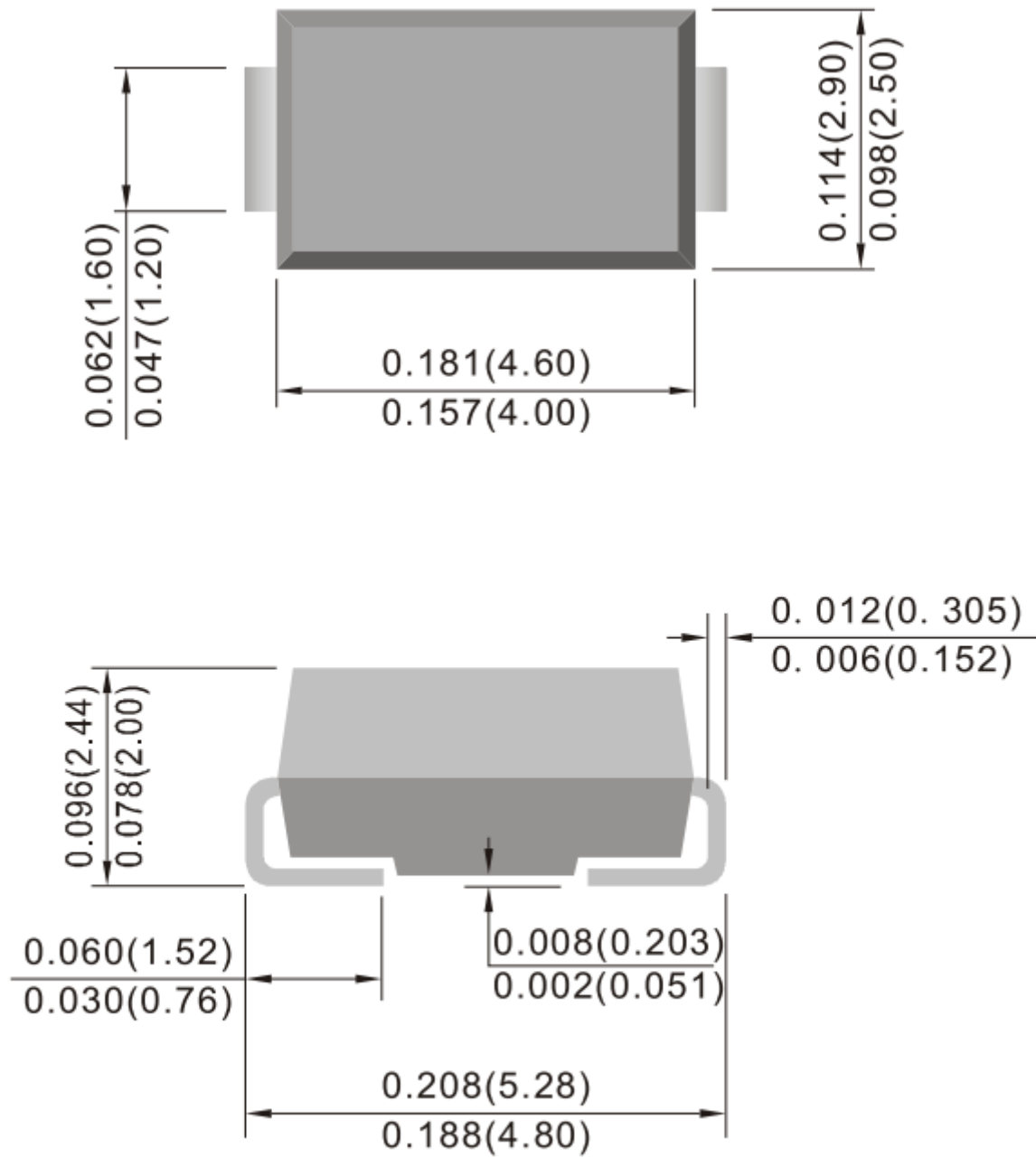


Figure 6. Typical Junction Capacitance

7. Dimension (SMA)



Unit : inch(mm)