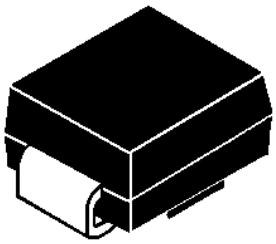
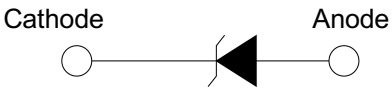
600W Surface Mount Transient Voltage Suppressors



SMA

Bi-directional



Uni-directional

Features

- Peak power dissipation 600W @10 x 1000 us Pulse
- Low profile package.
- Excellent clamping capability.
- Very fast response time。
- Typical I_R less than 1uA when V_{BR} min above 12V.
- IEC 61000-4-2 ESD 30KV(Air), 30KV(Contact)
- ESD protection of data lines in accordance with IEC 61000-4-2
- EFT protection of data lines in accordance with IEC 61000-4-4
- Halogen free and RoHS compliant
- Lead-free finish

Mechanical Characteristics

- CASE: SMA (DO-214AC) Molded Plastic over glass passivated junction.
- Mounting Position: Any
- Polarity: by cathode band denotes uni-directional device, none cathode band denotes bi-directional device.
- Terminal: Solder plated

Maximum Ratings And Characteristics @ 25°C Ambient Temperature (unless otherwise noted)

Parameter	Symbol	Value	Units
Peak Pulse Power Dissipation on 10/1000 us Waveform (Note 1, 2, FIG.1)	P_{PPM}	Min 600	W
Power Dissipation on Infinite Heat Sink at T_L=50°C	P_D	3.3	W
Peak Pulse Current of on 10/1000us Waveform (Note 1, FIG.3)	I_{PPM}	See Table 1	A
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave (Note 2. 3)	I_{FSM}	60	A
Operating Junction Temperature Range	T_J	-55 to 150	°C
Storage Temperature Range	T_{STG}	-55 to 150	°C

Notes:

1. Non-repetitive current pulse, per Fig.3 and derated above T_A=25°C per Fig.2.
2. Mounted on 5.0x5.0mm^2 (0.03mm thick) Copper Pads to each terminal.
3. Measured on 8.3ms single half sine-wave, or equivalent square wave, for Unidirectional device only.

Electrical Specification @ Tamb 25°C

Type Number		Marking		Reverse Stand-Off Voltage	Breakdown Voltage Min.@I_T	Breakdown Voltage Max.@I_T	Test Current	Maximum Clamping Voltage@I_{PP}	Peak Pulse Current	Reverse Leakage @V_{RWM}
(Uni)	(Bi)	(Uni)	(Bi)	V_{RMW}(V)	$V_{BR\ MIN}$(V)	$V_{BR\ MAX}$(V)	I_T (mA)	V_C(V)	I_{PP}(A)	I_R(uA)
SMA6J5.0A	SMA6J5.0CA	HEG	TEG	5.0	6.40	7.00	10	9.2	65.3	500
SMA6J6.0A	SMA6J6.0CA	HGG	TGG	6.0	6.67	7.37	10	10.3	58.3	500
SMA6J6.5A	SMA6J6.5CA	HKG	TKG	6.5	7.22	7.98	10	11.2	53.6	200
SMA6J7.0A	SMA6J7.0CA	HMG	TMG	7.0	7.78	8.60	10	12.0	50.0	200
SMA6J7.5A	SMA6J7.5CA	HPG	TPG	7.5	8.33	9.21	1	12.9	46.6	100
SMA6J8.0A	SMA6J8.0CA	HRG	TRG	8.0	8.89	9.83	1	13.6	44.2	50
SMA6J8.5A	SMA6J8.5CA	HTG	TTG	8.5	9.44	10.40	1	14.4	41.7	50
SMA6J9.0A	SMA6J9.0CA	HVG	TVG	9	10.0	11.1	1	15.4	39.0	10
SMA6J10A	SMA6J10CA	HXG	TXG	10	11.1	12.3	1	17.0	35.3	5
SMA6J11A	SMA6J11CA	HZG	TZG	11	12.2	13.5	1	18.2	33.0	1
SMA6J12A	SMA6J12CA	IEG	UEG	12	13.3	14.7	1	19.9	30.2	1
SMA6J13A	SMA6J13CA	IGG	UGG	13	14.4	15.9	1	21.5	27.9	1
SMA6J14A	SMA6J14CA	IKG	UKG	14	15.6	17.2	1	23.2	25.9	1
SMA6J15A	SMA6J15CA	IMG	UMG	15	16.7	18.5	1	24.4	24.6	1
SMA6J16A	SMA6J16CA	IPG	UPG	16	17.8	19.7	1	26.0	23.1	1
SMA6J17A	SMA6J17CA	IRG	URG	17	18.9	20.9	1	27.6	21.8	1
SMA6J18A	SMA6J18CA	ITG	UTG	18	20.0	22.1	1	29.2	20.6	1
SMA6J20A	SMA6J20CA	IVG	UVG	20	22.2	24.5	1	32.4	18.6	1
SMA6J22A	SMA6J22CA	IXG	UXG	22	24.4	26.9	1	35.5	16.9	1
SMA6J24A	SMA6J24CA	IZG	UZG	24	26.7	29.5	1	38.9	15.5	1
SMA6J26A	SMA6J26CA	JEG	VEG	26	28.9	31.9	1	42.1	14.3	1
SMA6J28A	SMA6J28CA	JGG	VGG	28	31.1	34.4	1	45.4	13.3	1
SMA6J30A	SMA6J30CA	JKG	VKG	30	33.3	36.8	1	48.4	12.4	1
SMA6J33A	SMA6J33CA	JMG	VMG	33	36.7	40.6	1	53.3	11.3	1
SMA6J36A	SMA6J36CA	JPG	VPG	36	40.0	44.2	1	58.1	10.4	1
SMA6J40A	SMA6J40CA	JRG	VRG	40	44.4	49.1	1	64.5	9.3	1
SMA6J43A	SMA6J43CA	JTG	VTG	43	47.8	52.8	1	69.4	8.7	1
SMA6J45A	SMA6J45CA	JVG	VVG	45	50.0	55.3	1	72.7	8.3	1
SMA6J48A	SMA6J48CA	JXG	VXG	48	53.3	58.9	1	77.4	7.8	1
SMA6J51A	SMA6J51CA	JZG	VZG	51	56.7	62.7	1	82.4	7.3	1
SMA6J54A	SMA6J54CA	REG	WEG	54	60.0	66.3	1	87.1	6.9	1
SMA6J58A	SMA6J58CA	RGG	WGG	58	64.4	71.2	1	93.6	6.5	1

※ For Bi-directional type having V_{RWM} of 10 Volts and less, the I_R limit is double.

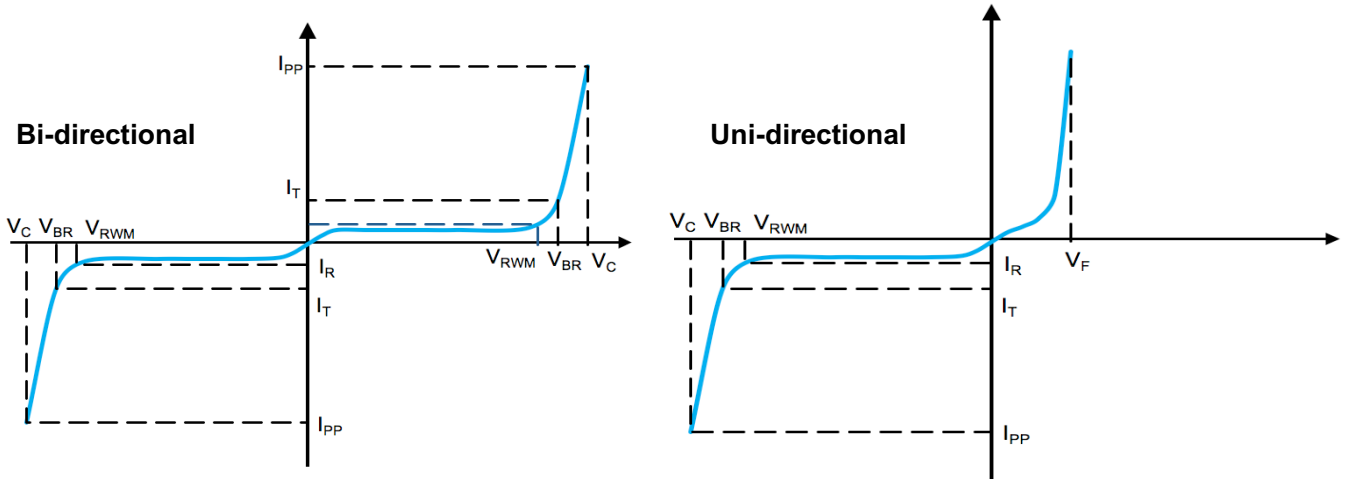
※ For parts without A, the V_{BR} is ± 10% and V_C is 5% higher than with A parts.

Type Number		Marking		Reverse Stand-Off Voltage	Breakdown Voltage Min.@IT	Breakdown Voltage Max.@IT	Test Current	Maximum Clamping Voltage @IPP	Peak Pulse Current	Reverse Leakage @VRWM
(Uni)	(Bi)	(Uni)	(Bi)	V_{RWM}(V)	$V_{BR\ MIN}$(V)	$V_{BR\ MAX}$(V)	I_T (mA)	V_C(V)	I_{PP}(A)	I_R(uA)
SMA6J60A	SMA6J60CA	RKG	WKG	60	66.7	73.7	1	96.8	6.2	1
SMA6J64A	SMA6J64CA	RMG	WMG	64	71.1	78.6	1	103	5.9	1
SMA6J70A	SMA6J70CA	RPG	WPG	70	77.8	86	1	113	5.3	1
SMA6J75A	SMA6J75CA	RRG	WRG	75	83.3	92.1	1	121	5.0	1
SMA6J78A	SMA6J78CA	RTG	WTG	78	86.7	95.8	1	126	4.8	1
SMA6J85A	SMA6J85CA	RVG	WVG	85	94.4	104	1	137	4.4	1
SMA6J90A	SMA6J90CA	RXG	WXG	90	100	111	1	146	4.1	1
SMA6J100A	SMA6J100CA	RZG	WZG	100	111	123	1	162	3.7	1
SMA6J110A	SMA6J110CA	SEG	XEG	110	122	135	1	177	3.4	1
SMA6J120A	SMA6J120CA	SGG	XGG	120	133	147	1	193	3.1	1
SMA6J130A	SMA6J130CA	SKG	XKG	130	144	159	1	209	2.9	1
SMA6J150A	SMA6J150CA	SMG	XMG	150	167	185	1	243	2.5	1
SMA6J160A	SMA6J160CA	SPG	XPG	160	178	197	1	259	2.3	1
SMA6J170A	SMA6J170CA	SRG	XRG	170	189	209	1	275	2.2	1
SMA6J180A	SMA6J180CA	STG	XTG	180	201	222	1	292	2.1	1

※ For Bi-directional type having V_{RWM} of 10 Volts and less, the I_R limit is double.

※ For parts without A, the V_{BR} is ± 10% and V_C is 5% higher than with A parts

I-V Curve Characteristics



P_{PPM} **Peak Pulse Power Dissipation** - Max power dissipation

V_{RWM} **Reverse Stand-off Voltage** - Maximum voltage that can be applied to TVS without operation

V_{BR} **Breakdown Voltage** – Maximum voltage that flows though the TVS at a specified current (I_T)

V_C **Clamping Voltage** – Peak voltage measured across the TVS at a specified I_{PPM} (peak impulse current)

I_R **Reverse Leakage Current** – Current measured at V_R

V_F **Forward Voltage Drop for Uni-directional**

Ratings and Characteristic Curves (T_A=25°C unless otherwise noted)

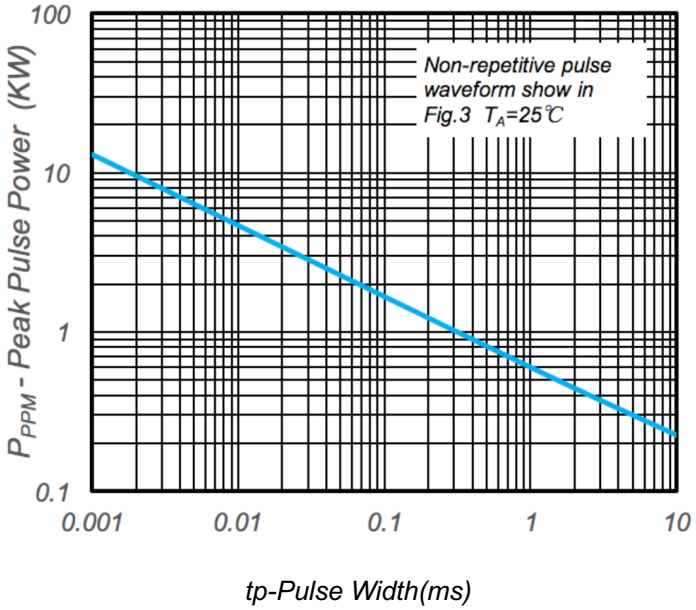


Fig.1 - Peak Pulse Power Rating

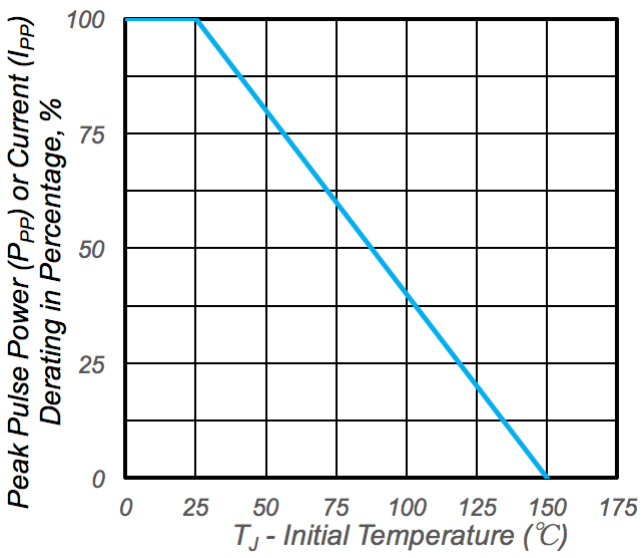


Fig.2 - Pulse Derating Cure

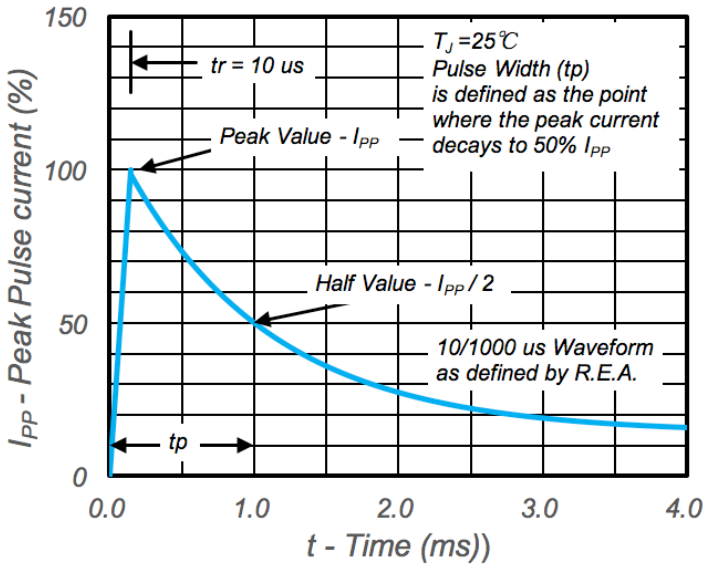


Fig.3 – Pulse Waveform

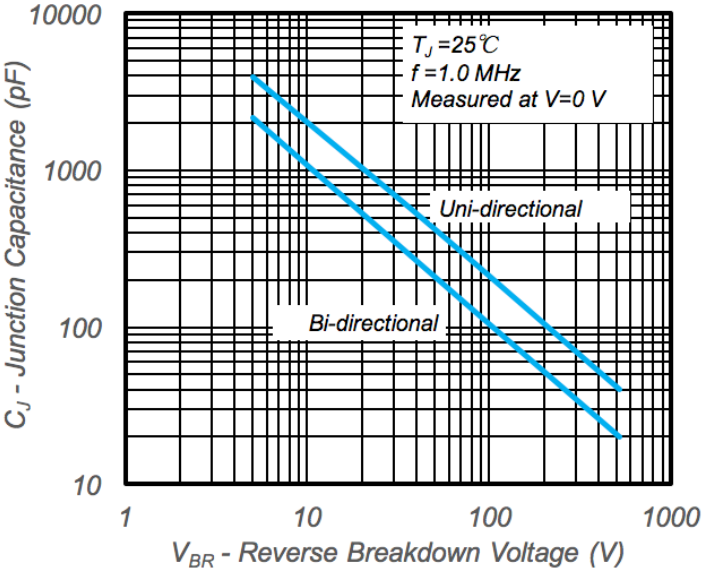
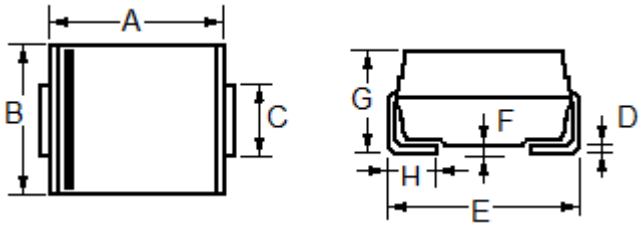


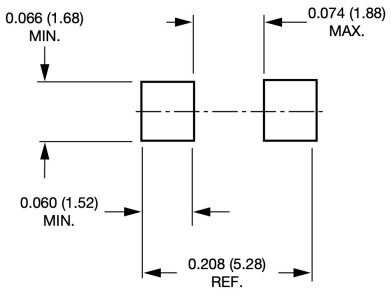
Fig.4 - Typical Junction Capacitance

Package Outline Dimensions and Pad Layouts

DO-214AC (SMA)



Mounting Pad Layout



Dim	Millimeters		Inches	
	Min	Max	Min	Max
A	3.99	4.50	0.157	0.177
B	2.54	2.79	0.100	0.110
C	1.25	1.65	0.049	0.065
D	0.152	0.305	0.006	0.012
E	4.93	5.28	0.194	0.208
F	----	0.203	----	0.008
G	1.98	2.29	0.078	0.090
H	0.76	1.52	0.030	0.060