6SMAJ Series

Surface Mount
Uni/Bi-Directional TVS Diodes

Peak Pulse Power - 600 W
Reverse Stand Off Voltage - 5 to 75 V

Description

The 6SMAJ series is designed specifically to protect sensitive electronic equipment from voltage transients induced by lightning and other transient voltage events.

Features

- For surface mounted applications
- Low profile package
- 600W Peak pulse power capability at 10/1000μs waveform
- Excellent clamping capability
- Typical IR less than 1uA above 10V
- Fast response time: typically less than 1.0ps from 0 Volts to VBR min
- High temperature soldering: 260℃/10s

Mechanical Data

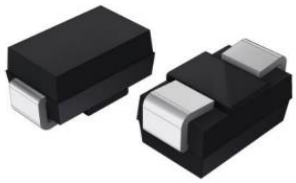
- Case:SMA(DO-214AC)package
- Case material: “green” molding compound
- UL flammability classification rating 94V-0
- Polarity : by cathode band denotes uni-directional device, none cathode band denotes bi-directional device
- Weight: 0.07grams

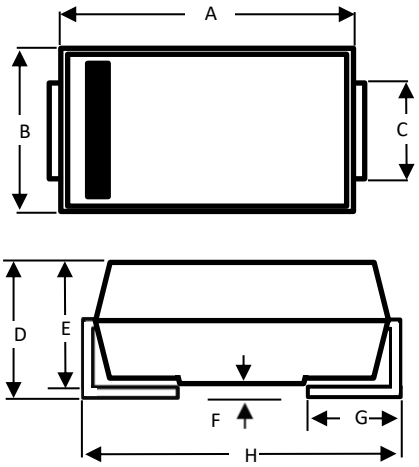
Note: Products with logo HY or hy are made by HY Electronic (Cayman) Limited

Applications

TVS devices are ideal for the protection of I/O Interfaces,Vcc bus and other vulnerable circuits used in telecom, computer, industrial and consumer electronic applications.

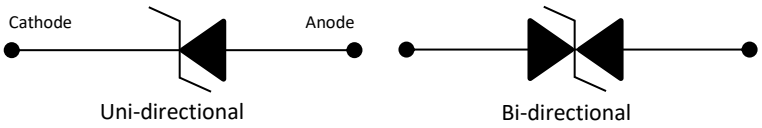
Package Outline Dimensions





SMA Package		
Dim	Min	Max
A	3.99	4.50
B	2.50	2.79
C	1.20	1.70
D	1.98	2.40
E	1.98	2.20
F	-	0.203
G	0.76	1.52
H	4.93	5.28
All Dimensions in mm		

Device Schematic



Ordering Information

- Package :SMA(DO-214AC)
- Reel Size :13 (inches)
- Quantity Per Reel :5Kpcs
- Quantity Per Box :10Kpcs
- Quantity Per Carton :80Kpcs

Maximum Ratings (@TA = +25°C, unless otherwise specified.)

Absolute Ratings

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation at TA=25°C by 10/1000us Waveform (Note 1)	P_{PP}	600	W
Power Dissipation on Infinite Heat Sink at TL=50°C	$P_{M(AV)}$	3.3	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave (Note 2)	I_{FSM}	60	A
Maximum Instantaneous Forward Voltage at 50A (Note 2)	V_F	5	V
Operating Temperature Range	T_j	-55 to +150	° C
Storage Temperature Range	T_{STG}	-55 to +150	° C

Note:

1. Non-repetitive current pulse, per Fig.4 and derated above Tj(initial) =25ºC per Fig.1
2. For unidirectional units only

Electrical Characteristics (@T_A = 25°C, unless otherwise specified.)

Part Number		Marking Code		Reverse Working Voltage V_{RWM}(V)	Reverse Breakdown Voltage V_B(V)			Reverse Leakage (Max) I_R(uA) @V_R	Reverse Clamping Voltage (Max) V_C(V) @I_{PP}	Peak Pulse Current (Max) I_{PP}(A)
Uni.	Bi.	Uni.	Bi.		Min.	Max.	@I_T(mA)			
6SMAJ5.0A	6SMAJ5.0CA	6SMAJ5.0A	6SMAJ5.0CA	5.0	6.40	7.00	10	800	9.2	65.3
6SMAJ6.0A	6SMAJ6.0CA	6SMAJ6.0A	6SMAJ6.0CA	6.0	6.67	7.37	10	800	10.3	58.3
6SMAJ6.5A	6SMAJ6.5CA	6SMAJ6.5A	6SMAJ6.5CA	6.5	7.22	7.98	10	500	11.2	53.6
6SMAJ7.0A	6SMAJ7.0CA	6SMAJ7.0A	6SMAJ7.0CA	7.0	7.78	8.60	10	200	12.0	50.0
6SMAJ7.5A	6SMAJ7.5CA	6SMAJ7.5A	6SMAJ7.5CA	7.5	8.33	9.21	1	100	12.9	46.5
6SMAJ8.0A	6SMAJ8.0CA	6SMAJ8.0A	6SMAJ8.0CA	8.0	8.89	9.83	1	50	13.6	44.2
6SMAJ8.5A	6SMAJ8.5CA	6SMAJ8.5A	6SMAJ8.5CA	8.5	9.44	10.40	1	20	14.4	41.7
6SMAJ9.0A	6SMAJ9.0CA	6SMAJ9.0A	6SMAJ9.0CA	9.0	10.0	11.1	1	10	15.4	39.0
6SMAJ10A	6SMAJ10CA	6SMAJ10A	6SMAJ10CA	10	11.1	12.3	1	5	17.0	35.3
6SMAJ11A	6SMAJ11CA	6SMAJ11A	6SMAJ11CA	11	12.2	13.5	1	1	18.2	33.0
6SMAJ12A	6SMAJ12CA	6SMAJ12A	6SMAJ12CA	12	13.3	14.7	1	1	19.9	30.2
6SMAJ13A	6SMAJ13CA	6SMAJ13A	6SMAJ13CA	13	14.4	15.9	1	1	21.5	27.9
6SMAJ14A	6SMAJ14CA	6SMAJ14A	6SMAJ14CA	14	15.6	17.2	1	1	23.2	25.9
6SMAJ15A	6SMAJ15CA	6SMAJ15A	6SMAJ15CA	15	16.7	18.5	1	1	24.4	24.6
6SMAJ16A	6SMAJ16CA	6SMAJ16A	6SMAJ16CA	16	17.8	19.7	1	1	26.0	23.1
6SMAJ17A	6SMAJ17CA	6SMAJ17A	6SMAJ17CA	17	18.9	20.9	1	1	27.6	21.8
6SMAJ18A	6SMAJ18CA	6SMAJ18A	6SMAJ18CA	18	20.0	22.1	1	1	29.2	20.6
6SMAJ20A	6SMAJ20CA	6SMAJ20A	6SMAJ20CA	20	22.2	24.5	1	1	32.4	18.6
6SMAJ22A	6SMAJ22CA	6SMAJ22A	6SMAJ22CA	22	24.4	26.9	1	1	35.5	16.9
6SMAJ24A	6SMAJ24CA	6SMAJ24A	6SMAJ24CA	24	26.7	29.5	1	1	38.9	15.4
6SMAJ26A	6SMAJ26CA	6SMAJ26A	6SMAJ26CA	26	28.9	31.9	1	1	42.1	14.3
6SMAJ28A	6SMAJ28CA	6SMAJ28A	6SMAJ28CA	28	31.1	34.4	1	1	45.4	13.2
6SMAJ30A	6SMAJ30CA	6SMAJ30A	6SMAJ30CA	30	33.3	36.8	1	1	48.4	12.4
6SMAJ33A	6SMAJ33CA	6SMAJ33A	6SMAJ33CA	33	36.7	40.6	1	1	53.3	11.3
6SMAJ36A	6SMAJ36CA	6SMAJ36A	6SMAJ36CA	36	40.0	44.2	1	1	58.1	10.4
6SMAJ40A	6SMAJ40CA	6SMAJ40A	6SMAJ40CA	40	44.4	49.1	1	1	64.5	9.3
6SMAJ43A	6SMAJ43CA	6SMAJ43A	6SMAJ43CA	43	47.8	52.8	1	1	69.4	8.7
6SMAJ45A	6SMAJ45CA	6SMAJ45A	6SMAJ45CA	45	50.0	55.3	1	1	72.7	8.3
6SMAJ48A	6SMAJ48CA	6SMAJ48A	6SMAJ48CA	48	53.3	58.9	1	1	77.4	7.8
6SMAJ51A	6SMAJ51CA	6SMAJ51A	6SMAJ51CA	51	56.7	62.7	1	1	82.4	7.3
6SMAJ54A	6SMAJ54CA	6SMAJ54A	6SMAJ54CA	54	60.0	66.3	1	1	87.1	6.9
6SMAJ58A	6SMAJ58CA	6SMAJ58A	6SMAJ58CA	58	64.4	71.2	1	1	93.6	6.4
6SMAJ60A	6SMAJ60CA	6SMAJ60A	6SMAJ60CA	60	66.7	73.7	1	1	96.8	6.2
6SMAJ64A	6SMAJ64CA	6SMAJ64A	6SMAJ64CA	64	71.1	78.6	1	1	103.0	5.83
6SMAJ70A	6SMAJ70CA	6SMAJ70A	6SMAJ70CA	70	77.8	86.0	1	1	113.0	5.31
6SMAJ75A	6SMAJ75CA	6SMAJ75A	6SMAJ75CA	75	83.3	92.1	1	1	121.0	4.96

Note:
1. Suffix "A" denotes 5% tolerance device.
2. Add suffix "CA" after part number to specify bi-directional devices.
3. The IR limit is double for bi-directional devices.

Rating and Characteristic Curves

FIG.1 - Peak Pulse Power Derating Curve

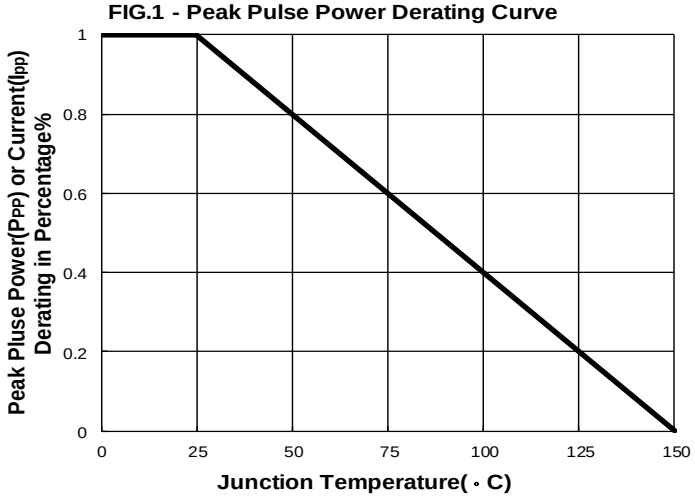


FIG.2 - Steady State Power Derating Curve

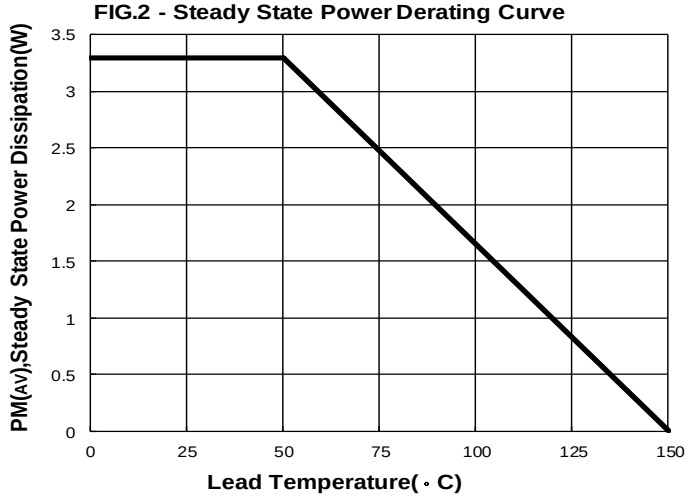


FIG.3 - Maximun Non-Repetitive Forward Surge Current Uni-Directional Only

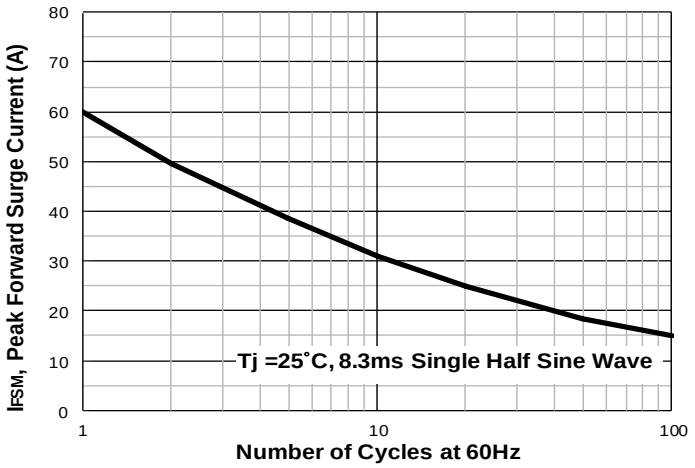


FIG.4 - Pulse Waveform

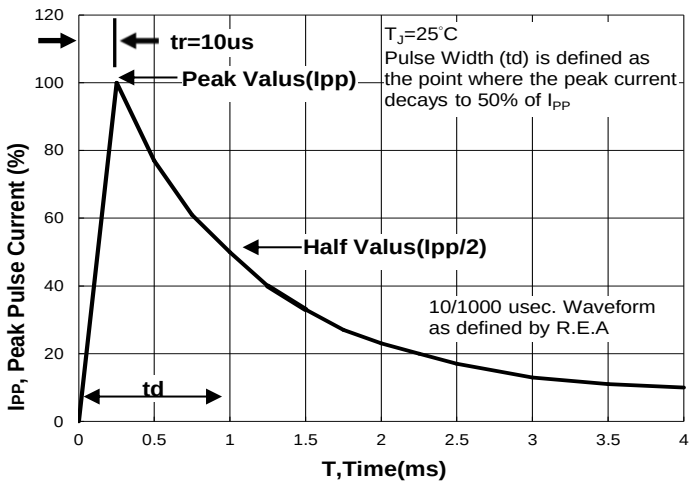


FIG.5 - Typical Junction Capacitance

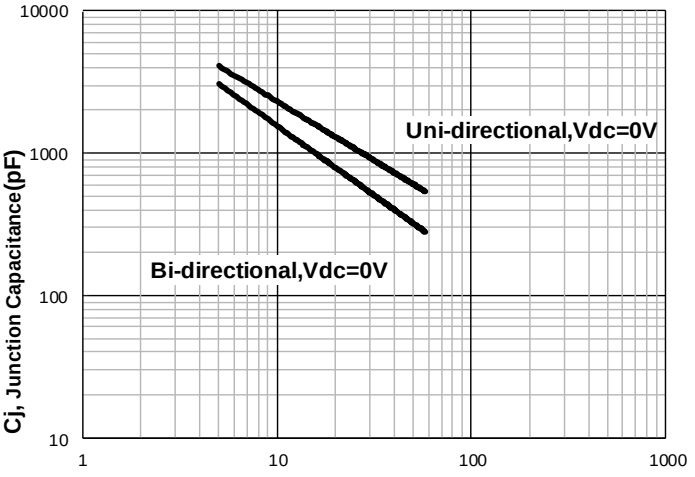
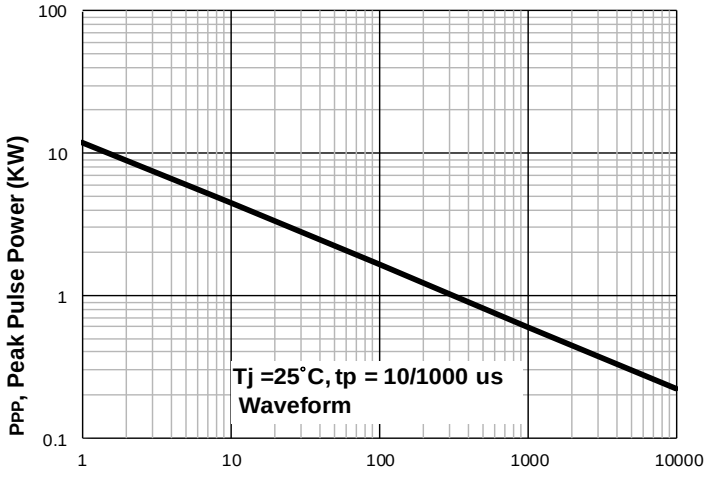


FIG.6 - Peak Pulse Power Rating Curve



The curve above is for reference only.

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