

# Unidirectional and Bidirectional Surface Mount Transient Voltage Suppressor



## Features:

- Rating to 200V  $V_{BR}$
- For surface mounted applications
- Reliable low cost construction utilizing molded plastic technique
- Plastic material has UL recognition 94V-0
- Typical IR less than 1 $\mu$ A above 10V
- Fast response time : typically less than 1.0ns for Uni-direction, less than 5.0ns for Bi-direction, from 0 Volts to BV min

## Mechanical Data:

Case	: Molded Plastic
Polarity	: Cathode band denotes uni-directional device No cathode band denotes bi-directional device
Weight	: 0.002 ounces, 0.053 grams
Reverse Voltage	: 5 to 170 Volts
Power Dissipation	: 400 Watts

# Datasheet.Live

## Maximum Ratings and Electrical Characteristics:

Rating at 25°C ambient temperature unless otherwise specified.  
Single phase, half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%

Characteristics	Symbol	Values	Unit
Peak Power Dissipation at $T_A = 25^\circ\text{C}$ TP = 1ms (Note 1, 2)	$P_{PK}$	Min. 400	Watts
Peak Forward Surge Current 8.3ms Single Half Sine-Wave Super Imposed on Rated Load (JEDEC Method)	$I_{FSM}$	40	Amps
Steady State Power Dissipation at $T_L = 75^\circ\text{C}$	$P_{M(AV)}$	1	Watts
Max. Instantaneous Forward Voltage at 50A for Uni-Directional Devices Only (Note 3)	$V_F$	3.5	Volts
Operating Temperature Range	$T_J$	-55 to +150	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-55 to +175	$^\circ\text{C}$

## Notes:

1. Non-repetitive current pulse ,per Fig. 3 and derated above  $T_A = 25^\circ\text{C}$  per Fig. 1.
2. Thermal Resistance junction to Lead.
3. 8.3ms single half-wave duty cycle=4 pulses per minutes maximum (uni-directional units only).

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Part Number		Working Peak Reverse Voltage	Breakdown Voltage VBR Volts			Max. Reverse Voltage at $I_{RSM}$ (Clamping Voltage)	Max. Reverse Surge Current	Max. Reverse Leakage at $V_{RWM}$
Device Unidirectional	Device Bidirectional	$V_{RWM}$ (V)	Min. (V)	Max. (V)	$I_t$ (mA)	$V_{RSM}$ (V)	$I_{RSM}$ (Amps)	IR ( $\mu$ A)
SMAJ10A+	SMAJ10CA+	10	11.1	12.3	1	17	23.5	5/10
-	SMAJ11CA+	11	12.2	13.5	1	18.2	22	5
SMAJ120A+	-	120	133	147	1	193	2	5
SMAJ12A+	SMAJ12CA+	12	13.3	14.7	1	19.9	20.1	5
SMAJ13A+	SMAJ13CA+	13	14.4	15.9	1	21.5	18.6	5
SMAJ150A+	SMAJ150CA+	150	167	185	1	243	1.6	5
SMAJ15A+	SMAJ15CA+	15	16.7	18.5	1	24.4	16.4	5
SMAJ16A+	-	16	17.8	19.7	1	26	15.3	5
SMAJ18A+	SMAJ18CA+	18	20	22.1	1	29.2	13.7	5
SMAJ20A+	SMAJ20CA+	20	22.2	24.5	1	32.4	12.3	5
SMAJ22A+	-	22	24.4	26.9	1	35.5	11.2	5
SMAJ24A+	SMAJ24CA+	24	26.7	29.5	1	38.9	10.3	5
SMAJ26A+	SMAJ26CA+	26	28.9	31.9	1	42.1	9.5	5
SMAJ28A+	-	28	31.1	34.4	1	45.4	8.8	5
SMAJ30A+	SMAJ30CA+	30	33.3	36.8	1	48.4	8.3	5
SMAJ33A+	SMAJ33CA+	33	36.7	40.6	1	53.3	7.5	5
SMAJ36A+	SMAJ36CA+	36	40	44.2	1	58.1	6.9	5
SMAJ40A+	SMAJ40CA+	40	44.4	49.1	1	64.5	6.2	5
-	SMAJ43CA+	43	47.8	52.8	1	69.4	5.7	5
-	SMAJ48CA+	48	53.3	58.9	1	77.4	5.2	5
SMAJ5.0A+	SMAJ5.0CA+	5	6.4	7	10	9.2	43.5	800/1600
SMAJ51A+	SMAJ51CA+	51	56.7	62.7	1	82.4	4.9	5
SMAJ54A+	SMAJ54CA+	54	60	66.3	1	87.1	4.6	5
SMAJ58A+	SMAJ58CA+	58	64.4	71.2	1	93.6	4.3	5
SMAJ6.0A+	-	6	6.67	7.37	10	10.3	38.8	800/1600
SMAJ6.5A+	-	6.5	7.22	7.98	10	11.2	35.7	500/1000
SMAJ60A+	-	60	66.7	73.7	1	96.8	4.1	5
SMAJ64A+	-	64	71.1	78.6	1	103	3.9	5
-	SMAJ7.0CA+	7	7.78	8.6	10	12	33.3	200/400
SMAJ7.5A+	-	7.5	8.33	9.21	1	12.9	31	100/200
SMAJ8.5A+	-	8.5	9.44	10.4	1	14.4	27.7	10/20
-	SMAJ9.0CA+	9	10	11.1	1	15.4	26	5/10

## Ratings and Characteristic Curves

FIG.1-PULSE DERATING CURVE

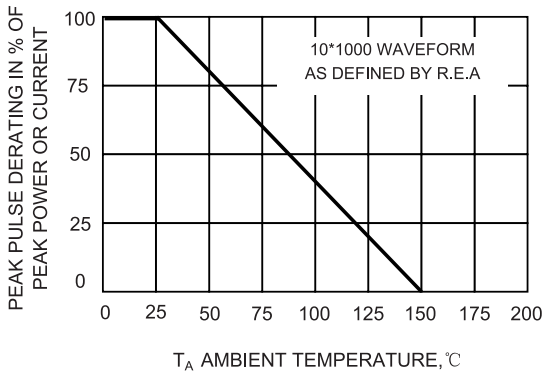


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

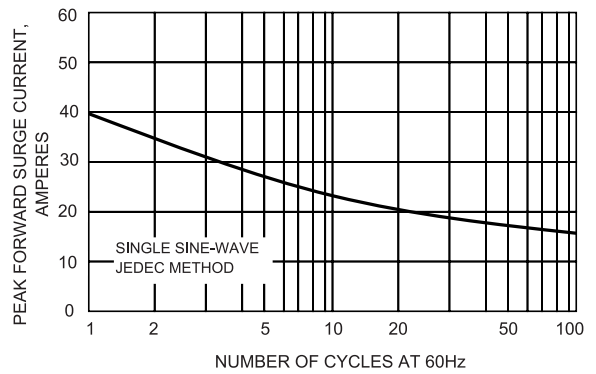


FIG.3-PULSE WAVEFORM

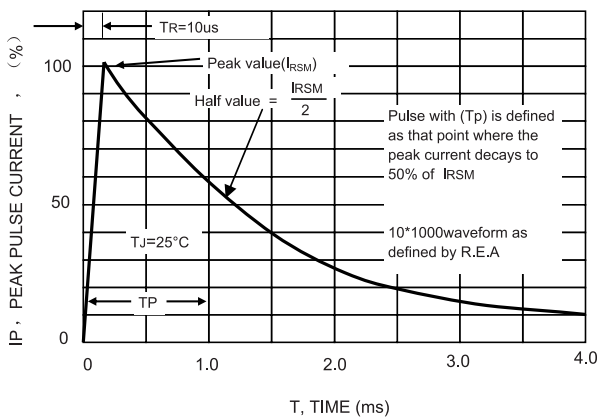


FIG.4-TYPICAL JUNCTION CAPACITANCE

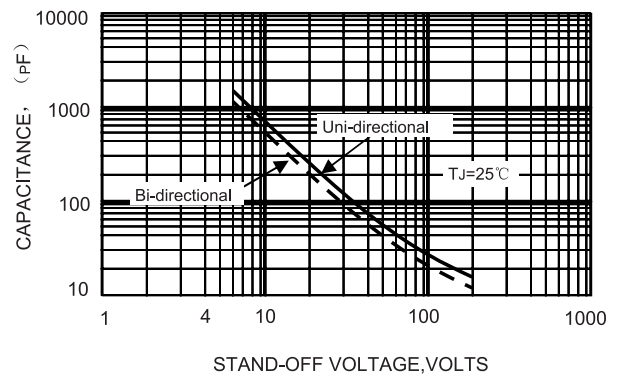


FIG.5-PULSE RATING CURVE

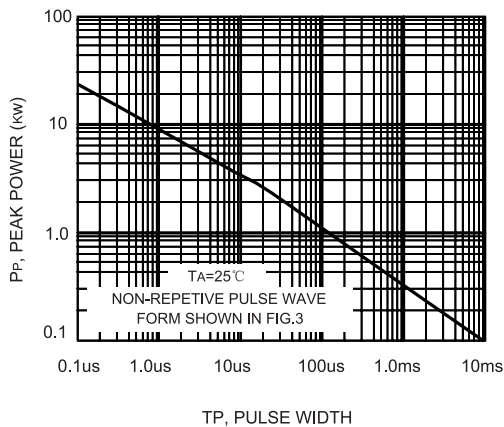
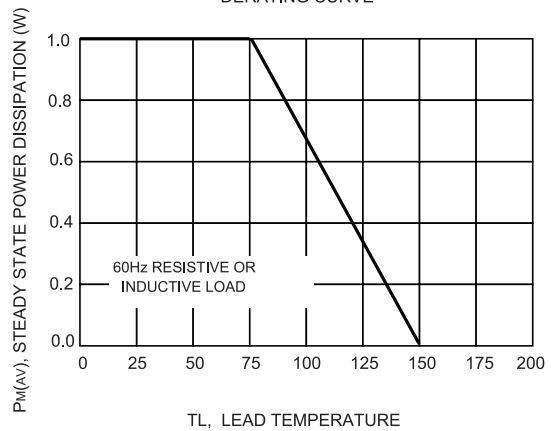


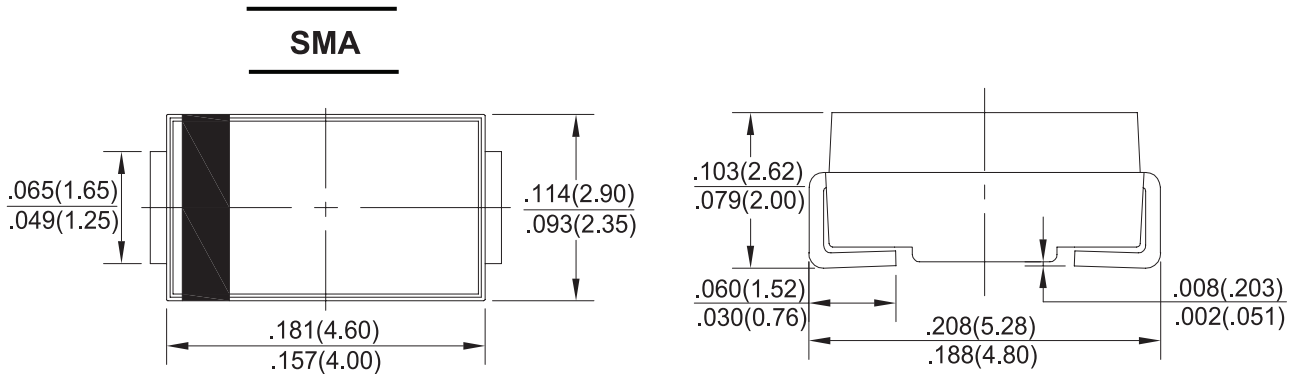
FIG.6-STEADY STATE POWER DERATING CURVE



# Unidirectional and Bidirectional Surface Mount Transient Voltage Suppressor



## Dimensions:



Dimensions : Inches (Millimetres)

## Part Number Table

Description	Part Number	Description	Part Number	Description	Part Number
Surface Mount Unidirectional and Bidirectional Transient Voltage Suppressors	SMAJ10A+	Surface Mount Unidirectional and Bidirectional Transient Voltage Suppressors	SMAJ22A+	Surface Mount Unidirectional and Bidirectional Transient Voltage Suppressors	SMAJ5.0CA+
	SMAJ10CA+		SMAJ24A+		SMAJ51A+
	SMAJ11CA+		SMAJ24CA+		SMAJ51CA+
	SMAJ120A+		SMAJ26A+		SMAJ54A+
	SMAJ12A+		SMAJ26CA+		SMAJ54CA+
	SMAJ12CA+		SMAJ28A+		SMAJ58A+
	SMAJ13A+		SMAJ30A+		SMAJ58CA+
	SMAJ13CA+		SMAJ30CA+		SMAJ6.0A+
	SMAJ150A+		SMAJ33A+		SMAJ6.5A+
	SMAJ150CA+		SMAJ33CA+		SMAJ60A+
	SMAJ15A+		SMAJ36A+		SMAJ64A+
	SMAJ15CA+		SMAJ36CA+		SMAJ7.0CA+
	SMAJ16A+		SMAJ40A+		SMAJ7.5A+
	SMAJ18A+		SMAJ40CA+		SMAJ8.5A+
	SMAJ18CA+		SMAJ43CA+		SMAJ9.0CA+
SMAJ20A+	SMAJ48CA+				
SMAJ20CA+	SMAJ5.0A+				

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