SEMICONDUCTOR

SMAJ5.0(C)A-V THRU SMAJ440(C)A-V

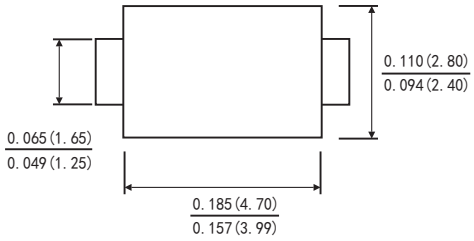
AUTOMOTIVE TRANSIENT VOLTAGE SUPPRESSOR
PEAK PULSE POWER-400 Watts

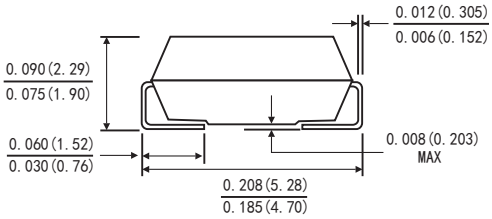
FEATURES

- 400 Watts Pulse capability
- Excellent clamping capability
- Low incremental surge resistance
- Fast response time
- High temperature soldering guaranteed: 260°C/10 seconds at terminals
- Component inaccordance to RoHS 2011/65/EU
- **AEC-Q101 qualified and PPAP capable**

AEC-Q101 Qualified

SMA(DO-214AC)





Dimensions in inches and (millimeters)

MECHANICAL DATA

- Case: JEDEC SMA(DO-214AC) molded plastic body
- Terminals: Solder Plated
- Polarity: By cathode band denotes uni-directional device, none cathode band denotes bi-directional device.

DEVICES FOR BIDIRECTIONAL APPLICATIONS

- 1. For bi-directional use C suffix for Types .
- 2. Electrical characteristics apply in both directions.

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

(Rating at 25°C ambient temperature unless otherwise specified)

	Symbols	Valuse	Units
Peak Pulse Power Dissipation at on 10/1000μs Waveform(Note 1.2)	P_{PK}	400	Watts
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load (JEDEC method) (Note 2, 3)	I_{FSM}	100	Amps
Operating jumction and storage temperature range	T_J, T_{STG}	-55 to 150	°C

Note: 1.Non repetitive current pulse and derated above T_A=25°C
2.Mounted on copper pads area of 0.2X0.2"(5X5mm)
3.Measured on 8.3ms single half sine-wave or equivalent square wave, duty cycle=4 pulses per minute maximum

RATINGS AND CHARACTERISTIC CURVES（SMAJ-V SERIES）

Part number		Reverse Standoff Voltage VRWM (Volts)	Breakdown Voltage VBR（Volts）		Test Current (mA)	Maximum Clamping Voltage VC@Ipp (Volts)	Maximum Peak Pulse Current Ipp(A)	Maximum Reverse Leakage IR@VRWM (μA)
UNI	BI		MIN	MAX				
SMAJ5.0A-V	SMAJ5.0CA-V	5.00	6.40	7.00	10	9.2	43.5	3σ值
SMAJ6.0A-V	SMAJ6.0CA-V	6.00	6.67	7.37	10	10.3	38.8	3σ值
SMAJ6.5A-V	SMAJ6.5CA-V	6.50	7.22	7.98	10	11.2	35.7	3σ值
SMAJ7.0A-V	SMAJ7.0CA-V	7.00	7.78	8.60	10	12.0	33.3	3σ值
SMAJ7.5A-V	SMAJ7.5CA-V	7.50	8.33	9.21	1	12.9	31.0	3σ值
SMAJ8.0A-V	SMAJ8.0CA-V	8.00	8.89	9.83	1	13.6	29.4	3σ值
SMAJ8.5A-V	SMAJ8.5CA-V	8.50	9.44	10.40	1	14.4	27.8	3σ值
SMAJ9.0A-V	SMAJ9.0CA-V	9.00	10.00	11.10	1	15.4	26.0	3σ值
SMAJ10A-V	SMAJ10CA-V	10.50	11.10	12.30	1	17.0	23.5	1
SMAJ11A-V	SMAJ11CA-V	11.55	12.20	13.50	1	18.2	22.0	1
SMAJ12A-V	SMAJ12CA-V	12.60	13.30	14.70	1	19.9	20.1	1
SMAJ13A-V	SMAJ13CA-V	13.65	14.40	15.90	1	21.5	18.6	1
SMAJ14A-V	SMAJ14CA-V	14.70	15.60	17.20	1	23.2	17.2	1
SMAJ15A-V	SMAJ15CA-V	15.75	16.70	18.50	1	24.4	16.4	1
SMAJ16A-V	SMAJ16CA-V	16.80	17.80	19.70	1	26.0	15.4	1
SMAJ17A-V	SMAJ17CA-V	17.85	18.90	20.90	1	27.6	14.5	1
SMAJ18A-V	SMAJ18CA-V	18.90	20.00	22.10	1	29.2	13.7	1
SMAJ20A-V	SMAJ20CA-V	21.00	22.20	24.50	1	32.4	12.3	1
SMAJ22A-V	SMAJ22CA-V	23.10	24.40	26.90	1	35.5	11.3	1
SMAJ24A-V	SMAJ24CA-V	25.20	26.70	29.50	1	38.9	10.3	1
SMAJ26A-V	SMAJ26CA-V	27.30	28.90	31.90	1	42.1	9.5	1
SMAJ28A-V	SMAJ28CA-V	29.40	31.10	34.40	1	45.4	8.8	1
SMAJ30A-V	SMAJ30CA-V	31.50	33.30	36.80	1	48.4	8.3	1
SMAJ33A-V	SMAJ33CA-V	34.65	36.70	40.60	1	53.3	7.5	1
SMAJ36A-V	SMAJ36CA-V	37.80	40.00	44.20	1	58.1	6.9	1
SMAJ40A-V	SMAJ40CA-V	42.00	44.40	49.10	1	64.5	6.2	1
SMAJ43A-V	SMAJ43CA-V	45.15	47.80	52.80	1	69.4	5.8	1
SMAJ45A-V	SMAJ45CA-V	47.25	50.00	55.30	1	72.7	5.5	1
SMAJ48A-V	SMAJ48CA-V	50.40	53.30	58.90	1	77.4	5.2	1
SMAJ51A-V	SMAJ51CA-V	53.55	56.70	62.70	1	82.4	4.9	1
SMAJ54A-V	SMAJ54CA-V	56.70	60.00	66.30	1	87.1	4.6	1

SMAJ58A-V	SMAJ58CA-V	60.90	64.40	71.20	1	93.6	4.3	1
SMAJ60A-V	SMAJ60CA-V	63.00	66.70	73.70	1	96.8	4.1	1
SMAJ64A-V	SMAJ64CA-V	67.20	71.10	78.60	1	103.0	3.9	1
SMAJ70A-V	SMAJ70CA-V	73.50	77.80	86.00	1	113.0	3.5	1
SMAJ75A-V	SMAJ75CA-V	78.75	83.30	92.10	1	121.0	3.3	1
SMAJ78A-V	SMAJ78CA-V	81.90	86.70	95.80	1	126.0	3.2	1
SMAJ85A-V	SMAJ85CA-V	89.25	94.40	104.00	1	137.0	2.9	1
SMAJ90A-V	SMAJ90CA-V	94.50	100.00	111.00	1	146.0	2.7	1
SMAJ100A-V	SMAJ100CA-V	105.00	111.00	123.00	1	162.0	2.5	1
SMAJ110A-V	SMAJ110CA-V	115.50	122.00	135.00	1	177.0	2.3	1
SMAJ120A-V	SMAJ120CA-V	126.00	133.00	147.00	1	193.0	2.1	1
SMAJ130A-V	SMAJ130CA-V	136.50	144.00	159.00	1	209.0	1.9	1
SMAJ150A-V	SMAJ150CA-V	157.50	167.00	185.00	1	243.0	1.6	1
SMAJ160A-V	SMAJ160CA-V	168.00	178.00	197.00	1	259.0	1.5	1
SMAJ170A-V	SMAJ170CA-V	178.50	189.00	209.00	1	275.0	1.5	1
SMAJ180A-V	SMAJ180CA-V	189.00	201.00	222.00	1	292.0	1.4	1
SMAJ190A-V	SMAJ190CA-V	199.50	211.00	233.00	1	306.0	1.3	1
SMAJ200A-V	SMAJ200CA-V	210.00	224.00	247.00	1	324.0	1.2	1
SMAJ210A-V	SMAJ210CA-V	220.50	233.00	258.00	1	324.0	1.1	1
SMAJ220A-V	SMAJ220CA-V	231.00	246.00	272.00	1	356.0	1.1	1
SMAJ250A-V	SMAJ250CA-V	262.50	279.00	309.00	1	405.0	1.0	1
SMAJ300A-V	SMAJ300CA-V	315.00	335.00	371.00	1	486.0	0.8	1
SMAJ350A-V	SMAJ350CA-V	367.50	391.00	432.00	1	567.0	0.7	1
SMAJ400A-V	SMAJ400CA-V	420.00	447.00	494.00	1	648.0	0.6	1
SMAJ440A-V	SMAJ440CA-V	462.00	492.00	543.00	1	713.0	0.6	1

For Bi-directional type having VRWM of 10 Volts and less, the IR limit is double

1.A transient suppressor is normally selected according to the working peak reverse voltage (VRWM), which should be equal to or greater than the DC or continuous peak operating voltage level.

2.VBR measured at pulse test current IT at an ambient temperature of 25°C.

3.Surge current waveform per Figure 2 and derate per Figure 3

RATINGS AND CHARACTERISTIC CURVES (SMAJ-V SERIES)

FIG. 1-PEAK PULSE POWER CURVE

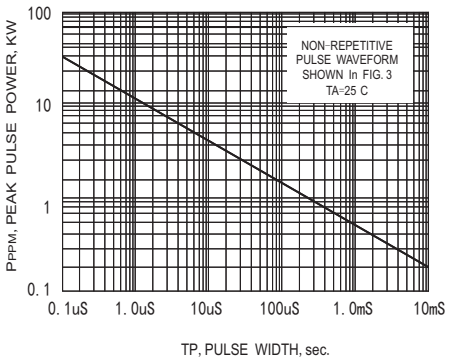


FIG. 2-PULSE DERATING CURVE

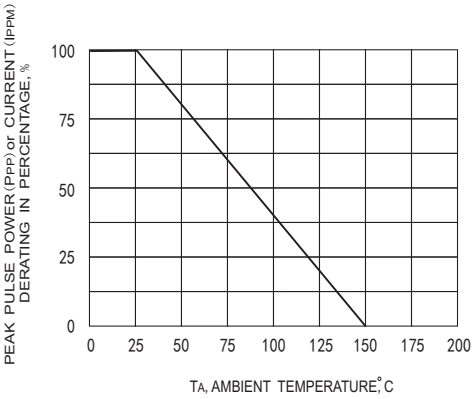


FIG. 3-PULSE WAVEFORM

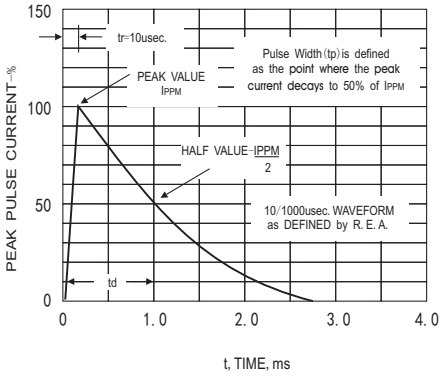


FIG. 4-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

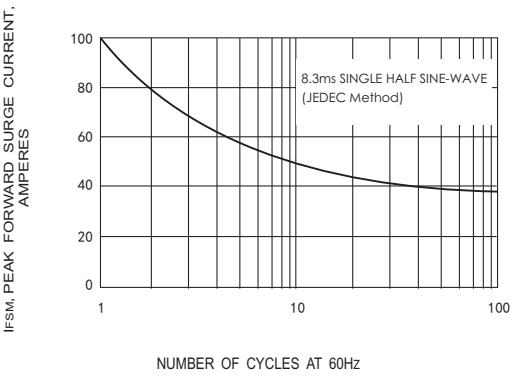


FIG. 5-Steady State Power Derating Curve

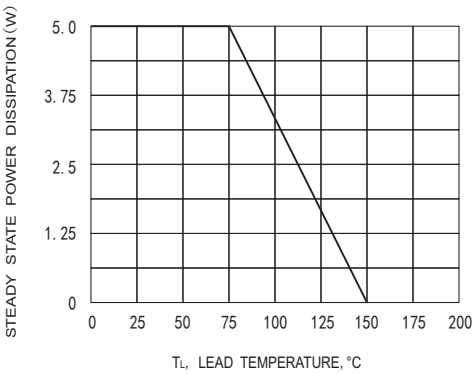


FIG. 6-TYPICAL JUNCTION CAPACITANCE