

# P6SMAxx(C)A-T SERIES

Reverse Voltage 5.8 ~450V

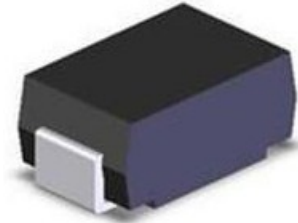
## Automotive Surface Mount Transient Voltage Suppressor Rectifiers

PROSEMI AEC-Q101 qualified Surface Mount Transient Voltage Suppressor Rectifiers are specially designed to protect sensitive electronic devices from lightning and other transient voltage.



### Features

- Glass passivated chip
- 600 W peak pulse power capability with a 10/1000 us waveform, repetitive rate (duty cycle):0.01 %
- Excellent clamping capability
- Low reverse leakage
- Very fast response time
- Lead and body according with RoHS standard



**DO-214AC(SMA)**

### Mechanical Data

- Case: DO-214AC Molded plastic
- Lead: Solderable per MIL-STD-750, method 2026
- Epoxy: UL 94V-0 rate flame retardant
- Polarity: Color band denotes cathode end except Bipolar
- Mounting position: Any
- System: Accreditation through IATF16949 System
- High reliability grade (AEC Q101 qualified)

### Maximum Ratings( $T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbols	Value	Unit
Peak power dissipation with a 10/1000 us waveform(1)	$P_{PP}$	600	W
Peak pulse current with a 10/1000 us waveform(1)	$I_{PP}$	See Next Table	A
Power dissipation on infinite heatsink at $T_L = 75^{\circ}\text{C}$	$P_D$	5.0	W
Peak forward surge current, 8.3 ms single half sinewave unidirectional only(2)	$I_{FSM}$	60	A
Maximum instantaneous forward voltage at 25 A for unidirectional only(3)	$V_F$	3.5/6.5	V
Operating junction and Storage temperature range	$T_J, T_{STG}$	-55 to +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 8.3 ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum;
- (3)  $V_F < 3.5\text{V}$  for devices of  $V_{BR} < 200\text{V}$  and  $V_F < 6.5\text{V}$  for devices of  $V_{BR} > 201\text{V}$ .

**Automotive Surface Mount Transient Voltage Suppressor Rectifiers**
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**Reverse Voltage 5.8 ~450V**

Part Number		Device Marking Code		Reverse Stand-off Voltage	Breakdown Voltage $V_{BR} @ I_T$		Test Current	Max. Clamping Voltage @ $I_{PP}$	Max. Peak Pulse Current	Max. Reverse Leakage @ $V_{RWM}$
UNI-POLAR	BI-POLAR	UNI	BI	$V_{RWM}(V)$	Min.(V)	Max.(V)	$I_T(mA)$	$V_{C MAX}(V)$	$I_{PP}(A)$	$I_R(\mu A)$
P6SMA6.8A-T	P6SMA6.8CA-T	66V8A	66V8C	5.8	6.45	7.14	10	10.5	58.1	1000
P6SMA7.5A-T	P6SMA7.5CA-T	67V5A	67V5C	6.4	7.13	7.88	10	11.3	54.0	500
P6SMA8.2A-T	P6SMA8.2CA-T	68V2A	68V2C	7.0	7.79	8.61	10	12.1	50.4	200
P6SMA9.1A-T	P6SMA9.1CA-T	69V1A	69V1C	7.8	8.65	9.55	1	13.4	45.5	50
P6SMA10A-T	P6SMA10CA-T	610A	610C	8.6	9.50	10.50	1	14.5	42.1	10
P6SMA11A-T	P6SMA11CA-T	611A	611C	9.4	10.50	11.60	1	15.6	39.1	5
P6SMA12A-T	P6SMA12CA-T	612A	612C	10.2	11.40	12.60	1	16.7	36.5	5
P6SMA13A-T	P6SMA13CA-T	613A	613C	11.1	12.40	13.70	1	18.2	33.5	1
P6SMA15A-T	P6SMA15CA-T	615A	615C	12.8	14.30	15.80	1	21.2	28.8	1
P6SMA16A-T	P6SMA16CA-T	616A	616C	13.6	15.20	16.80	1	22.5	27.1	1
P6SMA18A-T	P6SMA18CA-T	618A	618C	15.3	17.10	18.90	1	25.5	24.2	1
P6SMA20A-T	P6SMA20CA-T	620A	620C	17.1	19.00	21.00	1	27.7	22.0	1
P6SMA22A-T	P6SMA22CA-T	622A	622C	18.8	20.90	23.10	1	30.6	19.9	1
P6SMA24A-T	P6SMA24CA-T	624A	624C	20.5	22.80	25.20	1	33.2	18.4	1
P6SMA28A-T	P6SMA28CA-T	628A	628C	24.0	26.70	29.50	1	37.8	16.0	1
P6SMA30A-T	P6SMA30CA-T	630A	630C	25.6	28.50	31.50	1	41.4	14.7	1
P6SMA33A-T	P6SMA33CA-T	633A	633C	28.2	31.40	34.70	1	45.7	13.3	1
P6SMA36A-T	P6SMA36CA-T	636A	636C	30.8	34.20	37.80	1	49.9	12.2	1
P6SMA39A-T	P6SMA39CA-T	639A	639C	33.3	37.10	41.00	1	53.9	11.3	1
P6SMA43A-T	P6SMA43CA-T	643A	643C	36.8	40.90	45.20	1	59.3	10.3	1
P6SMA47A-T	P6SMA47CA-T	647A	647C	40.2	44.70	49.40	1	64.8	9.4	1
P6SMA51A-T	P6SMA51CA-T	651A	651C	43.6	48.50	53.60	1	70.1	8.7	1
P6SMA56A-T	P6SMA56CA-T	656A	656C	47.8	53.20	58.80	1	77.0	7.9	1
P6SMA62A-T	P6SMA62CA-T	662A	662C	53.0	58.90	65.10	1	85.0	7.2	1
P6SMA68A-T	P6SMA68CA-T	668A	668C	58.1	64.60	71.40	1	92.0	6.6	1
P6SMA75A-T	P6SMA75CA-T	675A	675C	64.1	71.30	78.80	1	103.0	5.9	1
P6SMA82A-T	P6SMA82CA-T	682A	682C	70.1	77.90	86.10	1	113.0	5.4	1
P6SMA91A-T	P6SMA91CA-T	691A	691C	77.8	86.50	95.50	1	125.0	4.9	1
P6SMA100A-T	P6SMA100CA-T	6100A	6100C	85.5	95.0	105.0	1	137.0	4.5	1
P6SMA110A-T	P6SMA110CA-T	6110A	6110C	94.0	105.0	116.0	1	152.0	4.0	1
P6SMA120A-T	P6SMA120CA-T	6120A	6120C	102.0	114.0	126.0	1	165.0	3.7	1
P6SMA130A-T	P6SMA130CA-T	6130A	6130C	111.0	124.0	137.0	1	179.0	3.4	1
P6SMA150A-T	P6SMA150CA-T	6150A	6150C	128.0	143.0	158.0	1	207.0	2.9	1
P6SMA160A-T	P6SMA160CA-T	6160A	6160C	136.0	152.0	168.0	1	219.0	2.8	1
P6SMA170A-T	P6SMA170CA-T	6170A	6170C	145.0	162.0	179.0	1	234.0	2.6	1
P6SMA180A-T	P6SMA180CA-T	6180A	6180C	154.0	171.0	189.0	1	246.0	2.5	1
P6SMA200A-T	P6SMA200CA-T	6200A	6200C	171.0	190.0	210.0	1	274.0	2.2	1
P6SMA220A-T	P6SMA220CA-T	6220A	6220C	185.0	209.0	231.0	1	328.0	1.9	1
P6SMA250A-T	P6SMA250CA-T	6250A	6250C	214.0	237.0	263.0	1	344.0	1.8	1
P6SMA300A-T	P6SMA300CA-T	6300A	6300C	256.0	285.0	315.0	1	414.0	1.5	1
P6SMA350A-T	P6SMA350CA-T	6350A	6350C	300.0	332.0	368.0	1	482.0	1.3	1
P6SMA400A-T	P6SMA400CA-T	6400A	6400C	342.0	380.0	420.0	1	548.0	1.1	1
P6SMA440A-T	P6SMA440CA-T	6440A	6440C	376.0	418.0	462.0	1	602.0	1.0	1
P6SMA480A-T		6480A		408.0	456.0	504.0	1	658.0	0.9	1
P6SMA510A-T		6510A		434.0	485.0	535.0	1	698.0	0.9	1
P6SMA530A-T		6530A		450.0	503.0	556.0	1	725.0	0.8	1

### Typical Characteristics

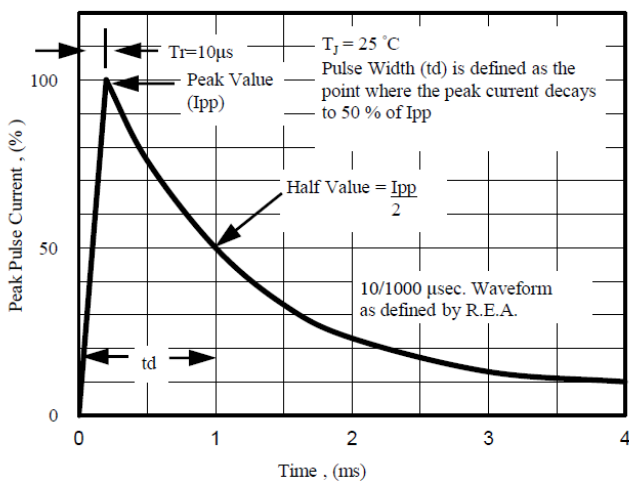
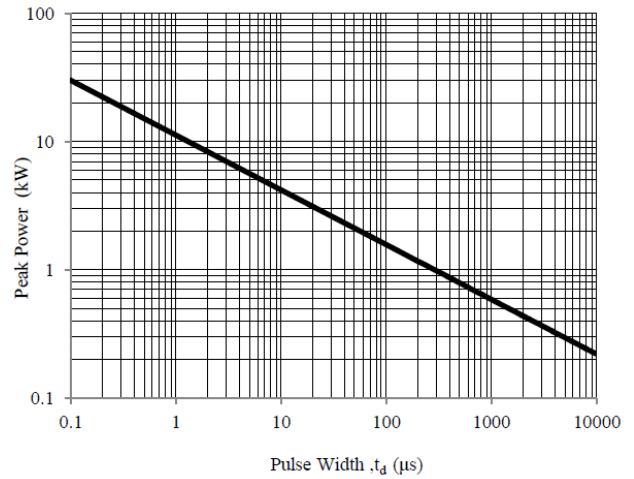
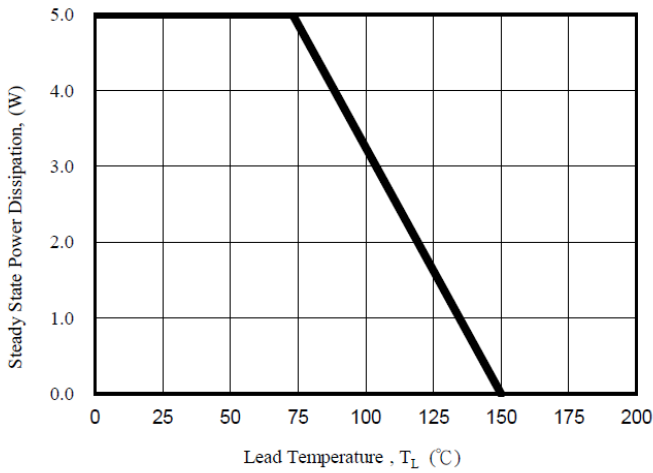
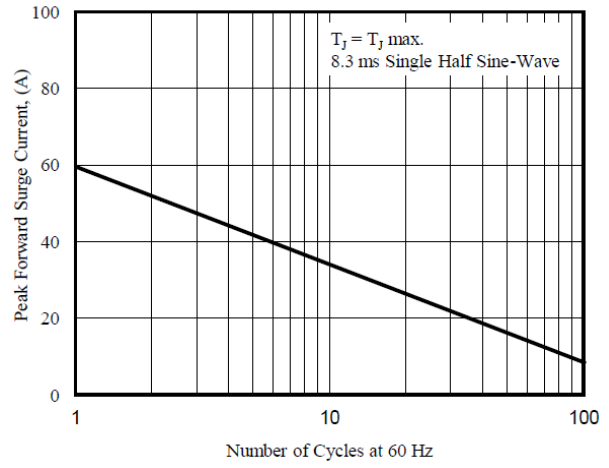
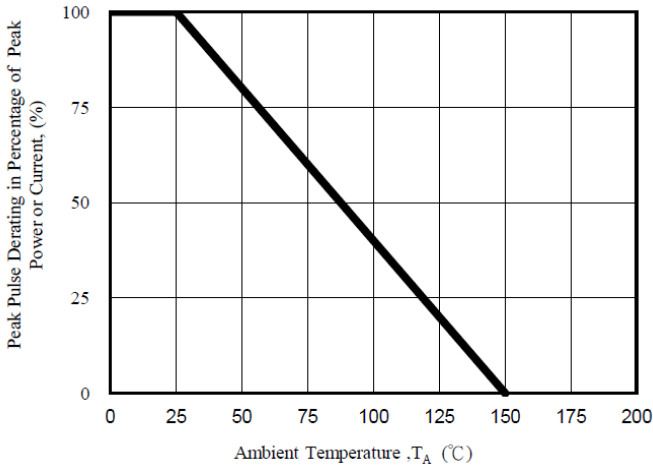


Fig. 5 - Pulse Waveform

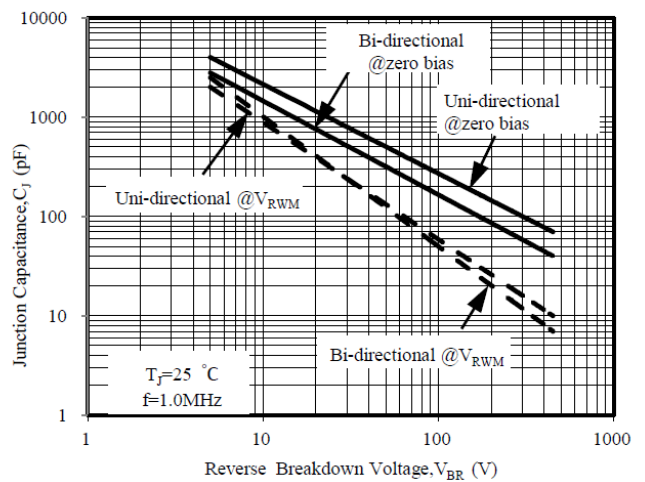
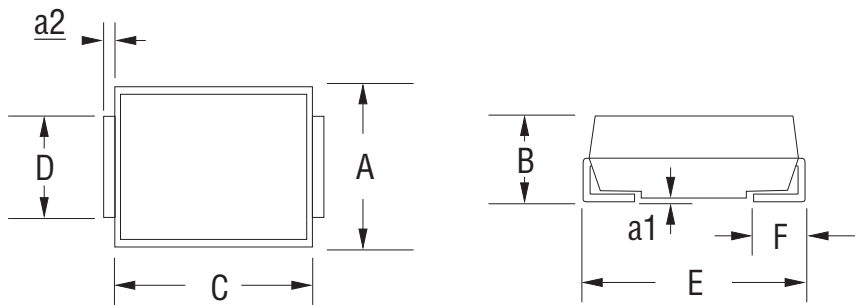


Fig. 6 - Typical Junction Capacitance

## Package Outline

**Dimension** (Unit: mm)



A		B		C		D		E		F		a1		a2	
Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
2.500	2.800	1.900	2.450	3.900	4.600	1.400	1.800	4.800	5.280	0.760	1.520	-	0.203	0.145	0.255

## Packaging

- Quantity: 5,000pcs
- 12mm wide tape on 330mm(13 inch) diameter reel –specification EIA Standard 481.