PROSEMI
Circuit Protection

P4SMA6.8(C)A-T to P4SMA600(C)A-T

400Watts

Automotive Transient Voltage Suppressors

PROSEMI offers AEC-Q101 qualified TVS diode device is specially designed to protect sensitive electronic devices from lightning and other transient voltage induced voltage transient events.

Features

- Glass passivated chip
- 400 W peak pulse power capability with a 10/1000 us waveform, repetitive rate (duty cycle):0.01 %
- Excellent clamping capability
- AEC-Q101 qualified available
- Low reverse leakage
- Very fast response time
- Lead and body according with RoHS standard

SMA
DO-214AC

Appications

- Case: DO214AC/(SMA) 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

Part Numbering System

P4SMA xxx CA - T

- P4SMA: Series
- xxx: Reverse Breakdown Voltage
- CA: Bi -directional A: Uni-directional
- T: for Automotive

Absolute Maximum Rating

Rating	Symbol	Value	Units
Peak power dissipation with a 10/1000 us waveform(1)	P_{PPM}	400	Watts
Peak pulse current wih a 10/1000 us waveform(1)	I_{PPM}	See Electrical Characteristics	A
Peak forward surge current, 8.3 ms single half sinewave unidirectional only(2)	I_{FSM}	40	A
Power dissipation on infinite heatsink at TL = 75°C	P_D	3.0	W
Operating junction and storage temperature range	T_J, T_{STG}	-55 ~ +150	°C
Maximum instantaneous forward voltage at 25 A for unidirectional only(3)	V_F	3.5 / 6.5	V

1)Non-repetitive current pulse per Fig.5 and derated above TA= 25 °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)VF<3.5V for devices of VBR<200V and VF<6.5V for devices of VBR > 201V。

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Electrical Characteristics

Part Number		Device Marking Code		Reverse Stand-off Voltage	Breakdown Voltage		Test Current	Max. Clamping Voltage	Max. Peak Pulse Current	Max. Reverse Leakage
				V_{RWM}(V)	V_{BR} @ I_T		I_T(mA)	V_C (V) @ I_{PP}	I_{PP}(A)	I_R(uA)@ V_{RWM}
UNI-POLAR	BI-POLAR	UNI	BI		Min.(V)	Max.(V)				
P4SMA6.8A-T	P4SMA6.8CA-T	6V8AT	6V8CT	5.8	6.45	7.14	10	10.5	39.0	1000
P4SMA7.5A-T	P4SMA7.5CA-T	7V5AT	7V5CT	6.4	7.13	7.88	10	11.3	36.3	500
P4SMA8.2A-T	P4SMA8.2CA-T	8V2AT	8V2CT	7.0	7.79	8.61	10	12.1	33.9	200
P4SMA9.1A-T	P4SMA9.1CA-T	9V1AT	9V1CT	7.8	8.65	9.55	1	13.4	30.6	50
P4SMA10A-T	P4SMA10CA-T	10AT	10CT	8.6	9.50	10.50	1	14.5	28.3	10
P4SMA11A-T	P4SMA11CA-T	11AT	11CT	9. 4	10.50	11.60	1	15.6	26.3	5
P4SMA12A-T	P4SMA12CA-T	12AT	12CT	10.2	11.40	12.60	1	16.7	24.6	5
P4SMA13A-T	P4SMA13CA-T	13AT	13CT	11.1	12.40	13.70	1	18.2	22.5	1
P4SMA15A-T	P4SMA15CA-T	15AT	15CT	12.8	14.30	15.80	1	21.2	19.3	1
P4SMA16A-T	P4SMA16CA-T	16AT	16CT	13.6	15.20	16.80	1	22.5	18.2	1
P4SMA18A-T	P4SMA18CA-T	18AT	18CT	15.3	17.10	18.90	1	25.5	16.1	1
P4SMA20A-T	P4SMA20CA-T	20AT	20CT	17.1	19.00	21.00	1	27.7	14.8	1
P4SMA22A-T	P4SMA22CA-T	22AT	22CT	18.8	20.90	23.10	1	30.6	13.4	1
P4SMA24A-T	P4SMA24CA-T	24AT	24CT	20.5	22.80	25.20	1	33.2	12.3	1
P4SMA27A-T	P4SMA27CA-T	27AT	27CT	23.1	25.70	28.40	1	37.5	10.9	1
P4SMA30A-T	P4SMA30CA-T	30AT	30CT	25.6	28.50	31.50	1	41.4	9.9	1
P4SMA33A-T	P4SMA33CA-T	33AT	33CT	28.2	31.40	34.70	1	45.7	9.0	1
P4SMA36A-T	P4SMA36CA-T	36AT	36CT	30.8	34.20	37.80	1	49.9	8.2	1
P4SMA39A-T	P4SMA39CA-T	39AT	39CT	33.3	37.10	41.00	1	53.9	7.6	1
P4SMA43A-T	P4SMA43CA-T	43AT	43CT	36.8	40.90	45.20	1	59.3	6.9	1
P4SMA47A-T	P4SMA47CA-T	47AT	47CT	40.2	44.70	49.40	1	64.8	6.3	1
P4SMA51A-T	P4SMA51CA-T	51AT	51CT	43.6	48.50	53.60	1	70.1	5.8	1
P4SMA56A-T	P4SMA56CA-T	56AT	56CT	47.8	53.20	58.80	1	77.0	5.3	1
P4SMA62A-T	P4SMA62CA-T	62AT	62CT	53.0	58.90	65.10	1	85.0	4.8	1
P4SMA68A-T	P4SMA68CA-T	68AT	68CT	58.1	64.60	71.40	1	92.0	4.5	1
P4SMA75A-T	P4SMA75CA-T	75AT	75CT	64.1	71.30	78.80	1	103.0	4.0	1
P4SMA82A-T	P4SMA82CA-T	82AT	82CT	70.1	77.90	86.10	1	113.0	3.6	1
P4SMA91A-T	P4SMA91CA-T	91AT	91CT	77.8	86.50	95.50	1	125.0	3.3	1
P4SMA100A-T	P4SMA100CA-T	100AT	100CT	85.5	95.0	105.0	1	137.0	3.0	1
P4SMA110A-T	P4SMA110CA-T	110AT	110CT	94.0	105.0	116.0	1	152.0	2.7	1
P4SMA120A-T	P4SMA120CA-T	120AT	120CT	102.0	114.0	126.0	1	165.0	2.5	1
P4SMA130A-T	P4SMA130CA-T	130AT	130CT	111.0	124.0	137.0	1	179.0	2.3	1
P4SMA150A-T	P4SMA150CA-T	150AT	150CT	128.0	143.0	158.0	1	207.0	2.0	1
P4SMA160A-T	P4SMA160CA-T	160AT	160CT	136.0	152.0	168.0	1	219.0	1.9	1
P4SMA170A-T	P4SMA170CA-T	170AT	170CT	145.0	162.0	179.0	1	234.0	1.8	1
P4SMA180A-T	P4SMA180CA-T	180AT	180CT	154.0	171.0	189.0	1	246.0	1.7	1
P4SMA200A-T	P4SMA200CA-T	200AT	200CT	171.0	190.0	210.0	1	274.0	1.5	1
P4SMA220A-T	P4SMA220CA-T	220AT	220CT	185.0	209.0	231.0	1	328.0	1.3	1
P4SMA250A-T	P4SMA250CA-T	250AT	250CT	214.0	237.0	263.0	1	344.0	1.2	1
P4SMA300A-T	P4SMA300CA-T	300AT	300CT	256.0	285.0	315.0	1	414.0	1.0	1
P4SMA350A-T	P4SMA350CA-T	350AT	350CT	300.0	332.0	368.0	1	482.0	0.9	1
P4SMA400A-T	P4SMA400CA-T	400AT	400CT	342.0	380.0	420.0	1	548.0	0.8	1
P4SMA440A-T	P4SMA440CA-T	440AT	440CT	376.0	418.0	462.0	1	602.0	0.7	1
P4SMA480A-T	P4SMA480CA-T	480AT	480CT	408.0	456.0	504.0	1	658.0	0.6	1
P4SMA510A-T	P4SMA510CA-T	510AT	510CT	434.0	485.0	535.0	1	698.0	0.6	1
P4SMA530A-T	P4SMA530CA-T	530AT	530CT	450.0	503.0	556.0	1	725.0	0.6	1
P4SMA540A-T	P4SMA540CA-T	540AT	540CT	459.0	513.0	567.0	1	740.0	0.5	1
P4SMA550A-T	P4SMA550CA-T	550AT	550CT	467.0	522.5	577.5	1	760.0	0.5	1
P4SMA600A-T	P4SMA600CA-T	600AT	600CT	509.0	570.0	630.0	1	780.0	0.5	1

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Typical Characteristics

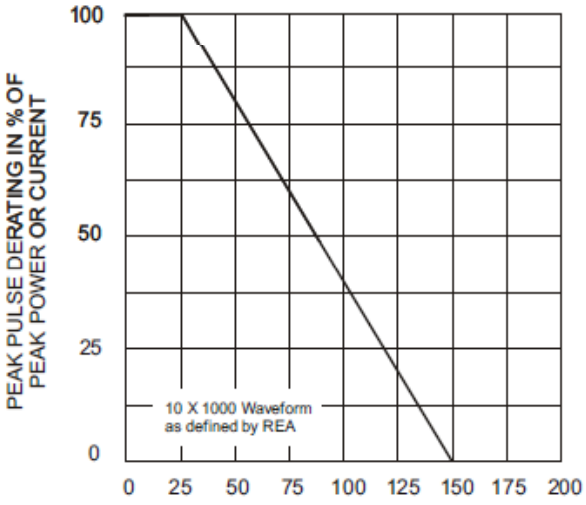

Fig 1 - Pulse Derating Curve

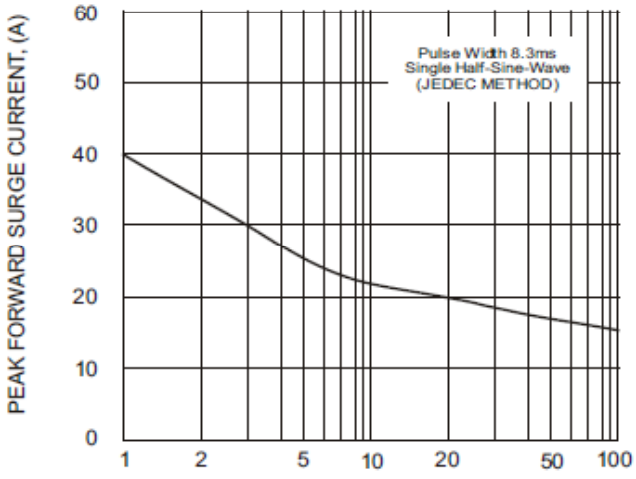

Fig.2 - Maximum Non-Repetitive Surge Current

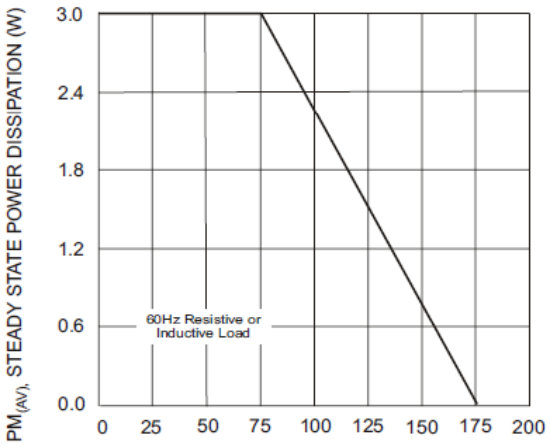

Fig 3 - Steady State Power Derating Curve

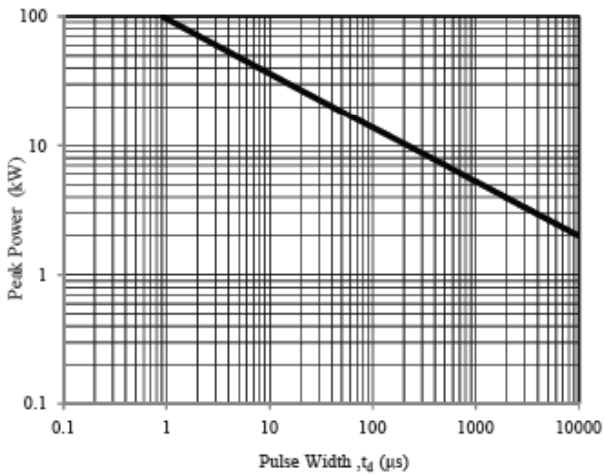

Fig.4 - Peak Pulse Power Rating Curve

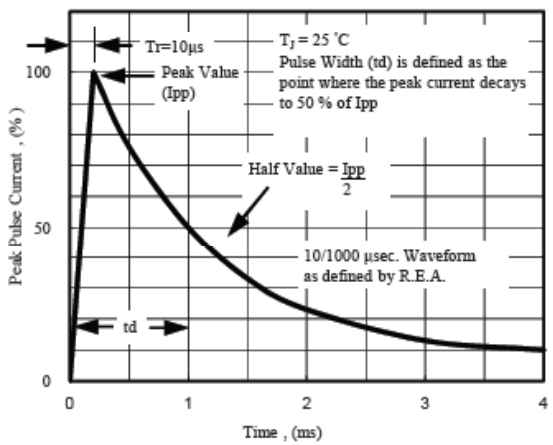

Fig. 5 -Pulse Waveform

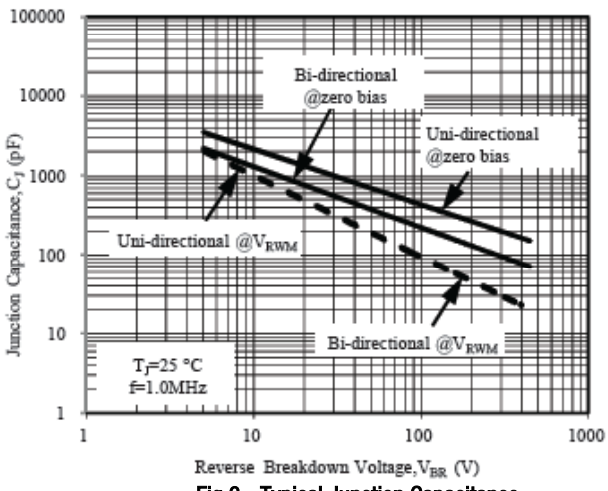

Fig.6 - Typical Junction Capacitance

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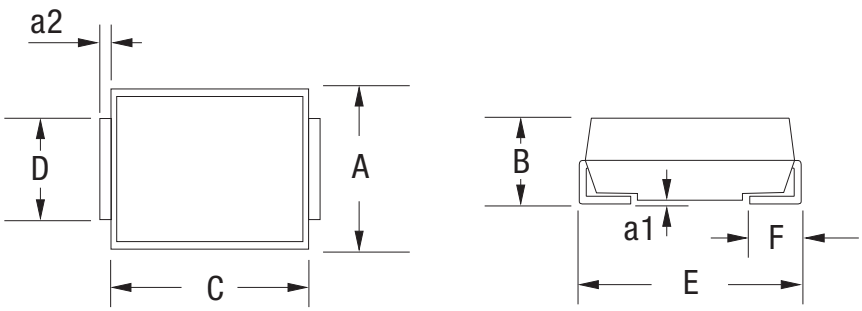
Dimension (Unit: mm)



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.