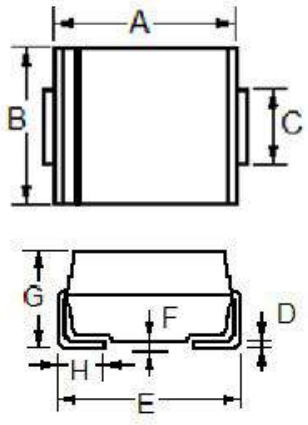
400 Watt Peak Power Zener Transient Voltage Suppressors

TVS Diodes P4SMA6.8-220A/CA



Dim	Millimeters		Inches	
	Min	Max	Min	Max
A	3.99	4.50	0.157	0.177
B	2.54	2.79	0.100	0.110
C	1.25	1.65	0.049	0.065
D	0.152	0.305	0.006	0.012
E	4.93	5.28	0.194	0.208
F	----	0.203	----	0.008
G	1.98	2.29	0.078	0.090
H	0.76	1.52	0.030	0.060

Maximum Ratings And Thermal Characteristics

Rating at 25℃ ambient temperature unless otherwise specified

Parameter	Symbol	Value	Units
Peak Power Dissipation (Note 1.) @T_L = 25°C, Pulse Width = 1 ms	P_{PK}	400	W
Forward Surge Current (Note 2.) @T_A = 25°C	I_{FSM}	100	A
Power Dissipation On Infinite Heatsink, @T_A = 50°C	$P_{M(AV)}$	5.0	W
Thermal Resistance Junction To Ambient Air (Note 3.)	$R_{\theta JA}$	100	°C/W
Thermal Resistance Junction To Leads	$R_{\theta JL}$	20	°C/W
Operating & Storage Temperature Range	T_{STG}	-55 to 150	°C
Operating Junction Temperature Range	T_J	-55 to 150	°C

1） 10 X 1000 us, non –repetitive

2） 1/2 sine wave (or equivalent square wave), PW = 8.3 ms, duty cycle = 4 pulses per minute maximum

3） Mounted on minimum recommended pad layout

Electrical Characteristics

Ratin s at 25℃ ambient tem erature unless otherwise s ecified .

Part Number (Uni)	Part Number (Bi)	Marking		Reverse Stand off Voltage VRWM (Volts)	Breakdown Voltage VBR (Volts) MIN.@ IT		Test Current IT (mA)	Maximum Clamping Voltage VC @ IPP (Volts)	Maximum Peak Pulse Current IPP (A)	Maximum Reverse Leakage IR @ VRWM (μA)
		Uni	Bi		MIN	MAX				
P4SMA6.8A	P4SMA6.8CA	6V8A	6V8CA	5.8	6.45	7.14	10	10.5	39	300
P4SMA7.5A	P4SMA7.5CA	7V5A	7V5CA	6.4	7.13	7.88	10	11.3	36.3	200
P4SMA8.2A	P4SMA8.2CA	8V2A	8V2CA	7.02	7.79	8.61	10	12.1	33.9	100
P4SMA9.1A	P4SMA9.1CA	9V1A	9V1CA	7.78	8.65	9.55	1	13.4	30.6	50
P4SMA10A	P4SMA10CA	10A	10CA	8.55	9.5	10.5	1	14.5	28.3	10
P4SMA11A	P4SMA11CA	11A	11CA	9.87	10.5	11.6	1	15.6	26.3	1
P4SMA12A	P4SMA12CA	12A	12CA	10.71	11.4	12.6	1	16.7	24.6	1
P4SMA13A	P4SMA13CA	14A	14CA	11.66	12.4	13.7	1	18.2	22.5	1
P4SMA15A	P4SMA15CA	15A	15CA	13.44	14.3	15.8	1	21.2	19.3	1
P4SMA16A	P4SMA16CA	16A	16CA	14.28	15.2	16.8	1	22.5	18.2	1
P4SMA18A	P4SMA18CA	18A	18CA	16.07	17.1	18.9	1	25.5	16.1	1
P4SMA20A	P4SMA20CA	20A	20CA	17.96	19	21	1	27.7	14.8	1
P4SMA22A	P4SMA22CA	22A	22CA	19.74	20.9	23.1	1	30.6	13.4	1
P4SMA24A	P4SMA24CA	24A	24CA	21.53	22.8	25.2	1	33.2	12.3	1
P4SMA27A	P4SMA27CA	27A	27CA	24.26	25.7	28.4	1	37.5	10.9	1
P4SMA30A	P4SMA30CA	30A	30CA	26.88	28.5	31.5	1	41.4	9.9	1
P4SMA33A	P4SMA33CA	33A	33CA	29.61	31.4	34.7	1	45.7	9	1
P4SMA36A	P4SMA36CA	36A	36CA	32.34	34.2	37.8	1	49.9	8.2	1
P4SMA39A	P4SMA39CA	39A	39CA	34.97	37.1	41	1	53.9	7.6	1
P4SMA43A	P4SMA43CA	43A	43CA	38.64	40.9	45.2	1	59.3	6.9	1
P4SMA47A	P4SMA47CA	47A	47CA	42.21	44.7	49.4	1	64.8	6.3	1
P4SMA51A	P4SMA51CA	51A	51CA	45.78	48.5	53.6	1	70.1	5.8	1
P4SMA56A	P4SMA56CA	56A	56CA	50.19	53.2	58.8	1	77	5.3	1
P4SMA62A	P4SMA62CA	62A	62CA	55.65	58.9	65.1	1	85	4.8	1
P4SMA68A	P4SMA68CA	68A	68CA	61.01	64.6	71.4	1	92	4.5	1
P4SMA75A	P4SMA75CA	75A	75CA	67.31	71.3	78.8	1	103	4	1
P4SMA82A	P4SMA82CA	82A	82CA	73.61	77.9	86.1	1	113	3.6	1
P4SMA91A	P4SMA91CA	91A	91CA	81.69	86.5	95.5	1	125	3.3	1
P4SMA100A	P4SMA100CA	100A	100CA	89.78	95	105	1	137	3	1
P4SMA110A	P4SMA110CA	110A	110CA	98.7	105	116	1	152	2.7	1
P4SMA120A	P4SMA120CA	120A	120CA	107.1	114	126	1	165	2.5	1
P4SMA130A	P4SMA130CA	130A	130CA	116.55	124	137	1	179	2.3	1
P4SMA150A	P4SMA150CA	150A	150CA	134.4	143	158	1	207	2	1
P4SMA160A	P4SMA160CA	160A	160CA	142.8	152	168	1	219	1.9	1
P4SMA170A	P4SMA170CA	170A	170CA	152.25	162	179	1	234	1.8	1
P4SMA180A	P4SMA180CA	180A	180CA	161.7	171	189	1	246	1.7	1
P4SMA200A	P4SMA200CA	200A	200CA	179.55	190	210	1	274	1.5	1
P4SMA220A	P4SMA220CA	220A	220CA	194.25	209	231	1	328	1.3	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 1 and derate per Figure 3.

Typical Characteristics

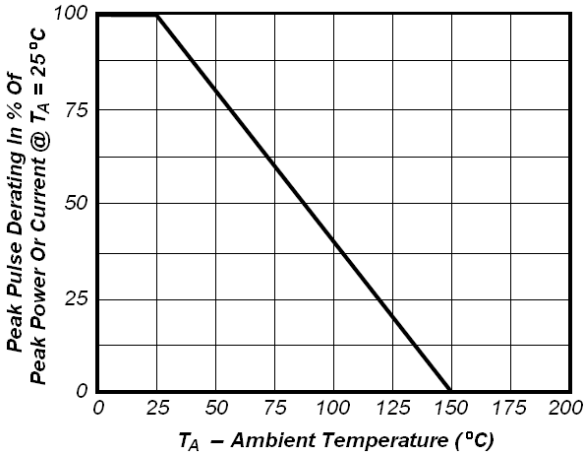


Fig1. Pulse Dearting Curve

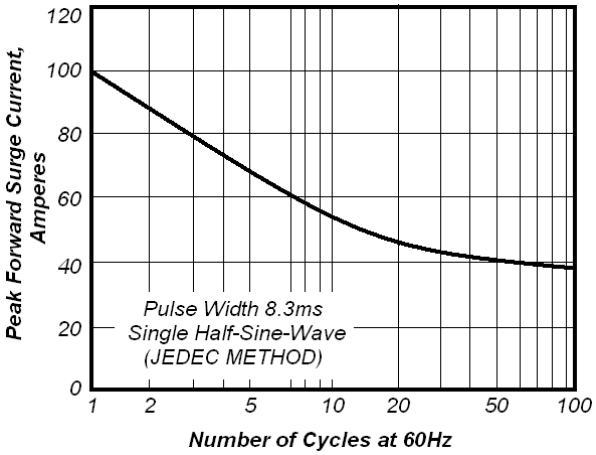


Fig2. Maximum Non -Repetitive Peak Forward Surge Current

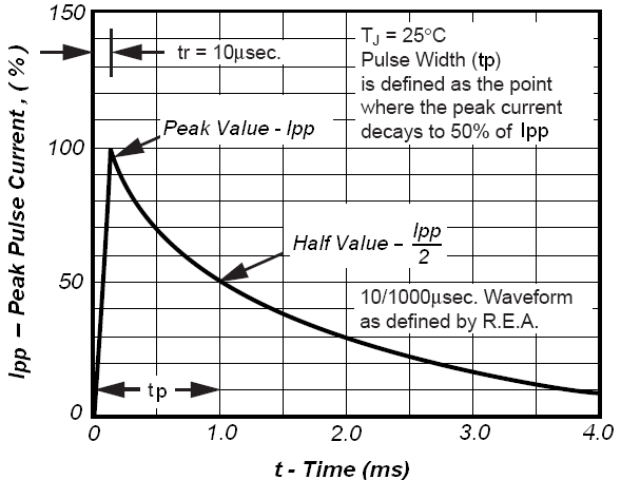


Fig3. Pulse Waveform

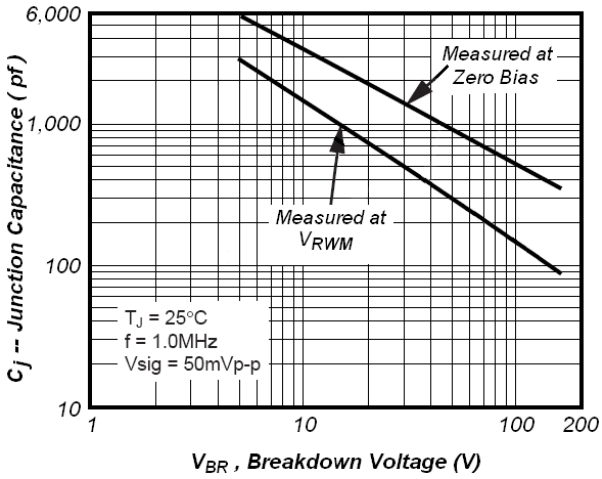


Fig4. Typical Junction Capacitance

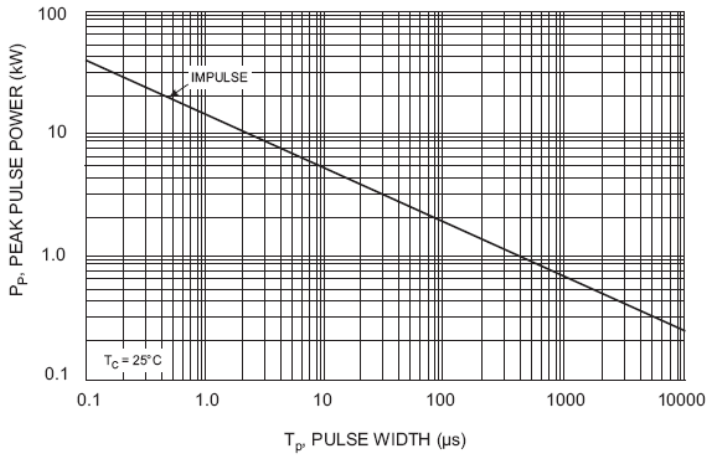


Fig5. Peak Pulse Power Rating curve

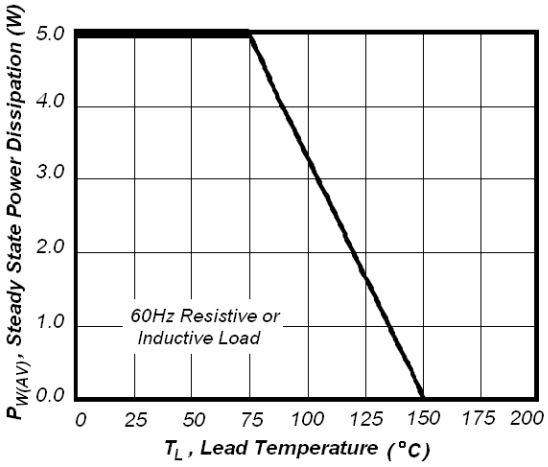


Fig6. Steady State Power Derating Curv