

600W Transient Voltage Suppressor

Features

- Glass passivated chip junction
- 600W peak pulse power capability on 10/1000 μ s waveform repetition rate(duty cycle): 0.01%
- Fast response time: typically less than 1.0ps from 0v to VBR Min.
- Low incremental surge resistance, excellent clamping capability
- High temperature soldering guaranteed:
265°C/10 seconds, 0.375" (9.5mm) lead length at 5lbs. (2.3kg tension)
- This series (P6KE6.8A/CA to P6KE440A/CA) is UL recognized under component index. File number E315008
- RoHS Compliance and Halogen Free

DO-204AC (DO-15)



HALOGEN
FREE



Mechanical Data

Case:	DO-204AC (DO-15) molded plastic
Epoxy:	Plastic package has UL flammability classification 94V-0
Terminals:	Plated axial leads, Solderable per MIL-STD-750, Method 2026
Polarity:	Cathode indicated by color band except Bi-directional
Weight:	0.015 ounce, 0.4 gram

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

Symbol	Description	Value	Unit	Conditions
PPPM	Peak Pulse Power Dissipation on 10/1000 μ s Waveform	600	W	Non-repetitive current pulse, per FIG.3 and derated above $T_A=25^{\circ}\text{C}$ per FIG.2
P_D	Steady State Power Dissipation on infinite heat sink	5.0	W	$T_L=75^{\circ}\text{C}$ (Fig. 5)
I_{FSM}	Peak Forward Surge Current	100	A	8.3ms Single Half Sine Wave Uni-directional only (Note 1)
V_F	Maximum Instantaneous Forward Voltage at 50A for Unidirectional Only	3.5/5.0	V	Note 2
R_{θJL}	Typical Thermal Resistance Junction to Lead	20	$^{\circ}\text{C/W}$	
R_{θJA}	Typical Thermal Resistance Junction to Ambient	75	$^{\circ}\text{C/W}$	

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P6KE6.8A - 600CA

Symbol	Description	Value	Unit	Conditions
T _J , T _{STG}	Operating Junction and Storage Temperature Range	-55 to 175	° C	

Note: 1. Measured on 8.3ms single half sine wave or equivalent square wave, duty cycle=4 per minute maximum.

2. V_F<3.5V for devices of V_{BR} ≤ 200V and V_F<5.0V for devices of V_{BR} ≥ 201V.

Electrical Characteristics (*T_{Ambient}*=25°C unless noted otherwise)

P/N		Stand-Off Voltage	Breakdown Voltage @ Test Current			Max. Reverse Leakage @ VWM	Max. Clamping Voltage @ IPPM	Max. Peak Pulse Current
			V BR		IT (mA)			
Uni-Polar	Bi-Polar	V WM (V)	Min.	Max.			ID (μA)	VC (V)
P6KE6.8A	P6KE6.8CA	5.8	6.45	7.14	10	1000	10.5	58.1
P6KE7.5A	P6KE7.5CA	6.4	7.13	7.88	10	500	11.3	54.0
P6KE8.2A	P6KE8.2CA	7.02	7.79	8.61	10	200	12.1	50.4
P6KE9.1A	P6KE9.1CA	7.78	8.65	9.55	1.0	50	13.4	45.5
P6KE10A	P6KE10CA	8.55	9.5	10.5	1.0	10	14.5	42.1
P6KE11A	P6KE11CA	9.4	10.5	11.6	1.0	5.0	15.6	39.1
P6KE12A	P6KE12CA	10.2	11.4	12.6	1.0	5.0	16.7	36.5
P6KE13A	P6KE13CA	11.1	12.4	13.7	1.0	1.0	18.2	33.5
P6KE15A	P6KE15CA	12.8	14.3	15.8	1.0	1.0	21.2	28.8
P6KE16A	P6KE16CA	13.6	15.2	16.8	1.0	1.0	22.5	27.1
P6KE18A	P6KE18CA	15.3	17.1	18.9	1.0	1.0	25.2	24.2
P6KE20A	P6KE20CA	17.1	19.0	21.0	1.0	1.0	27.7	22.0
P6KE22A	P6KE22CA	18.8	20.9	23.1	1.0	1.0	30.6	19.9
P6KE24A	P6KE24CA	20.5	22.8	25.2	1.0	1.0	33.2	18.4
P6KE27A	P6KE27CA	23.1	25.7	28.4	1.0	1.0	37.5	16.3
P6KE30A	P6KE30CA	25.6	28.5	31.5	1.0	1.0	41.4	14.7
P6KE33A	P6KE33CA	28.2	31.4	34.7	1.0	1.0	45.7	13.3
P6KE36A	P6KE36CA	30.8	34.2	37.8	1.0	1.0	49.9	12.2
P6KE39A	P6KE39CA	33.3	37.1	41.0	1.0	1.0	53.9	11.3
P6KE43A	P6KE43CA	36.8	40.9	45.2	1.0	1.0	59.3	10.3
P6KE47A	P6KE47CA	40.2	44.7	49.4	1.0	1.0	64.8	9.4
P6KE51A	P6KE51CA	43.6	48.5	53.6	1.0	1.0	70.1	8.7
P6KE56A	P6KE56CA	47.8	53.2	58.8	1.0	1.0	77.0	7.9

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P/N		Stand-Off Voltage	Breakdown Voltage @ Test Current			Max. Reverse Leakage @ VWM	Max. Clamping Voltage @ IPPM	Max. Peak Pulse Current
			V BR		IT (mA)			
Uni-Polar	Bi-Polar	V WM (V)	Min.	Max.			ID (μA)	Vc (V)
P6KE62A	P6KE62CA	53.0	58.9	65.1	1.0	1.0	85.0	7.2
P6KE68A	P6KE68CA	58.1	64.6	71.4	1.0	1.0	92.0	6.6
P6KE75A	P6KE75CA	64.1	71.3	78.8	1.0	1.0	103	5.9
P6KE82A	P6KE82CA	70.1	77.9	86.1	1.0	1.0	113	5.4
P6KE91A	P6KE91CA	77.8	86.5	95.5	1.0	1.0	125	4.9
P6KE100A	P6KE100CA	85.5	95.0	105.0	1.0	1.0	137	4.5
P6KE110A	P6KE110CA	94.0	105.0	116.0	1.0	1.0	152	4.0
P6KE120A	P6KE120CA	102.0	114.0	126.0	1.0	1.0	165	3.7
P6KE130A	P6KE130CA	111.0	124.0	137.0	1.0	1.0	179	3.4
P6KE150A	P6KE150CA	128.0	143.0	158.0	1.0	1.0	207	2.9
P6KE160A	P6KE160CA	136.0	152.0	168.0	1.0	1.0	219	2.8
P6KE170A	P6KE170CA	145.0	162.0	179.0	1.0	1.0	234	2.6
P6KE180A	P6KE180CA	154.0	171.0	189.0	1.0	1.0	246	2.5
P6KE200A	P6KE200CA	171.0	190.0	210.0	1.0	1.0	274	2.2
P6KE220A	P6KE220CA	185.0	209.0	231.0	1.0	1.0	328	1.9
P6KE250A	P6KE250CA	214.0	237.0	263.0	1.0	1.0	344	1.8
P6KE300A	P6KE300CA	256.0	285.0	315.0	1.0	1.0	414	1.5
P6KE350A	P6KE350CA	300.0	332.0	368.0	1.0	1.0	482	1.3
P6KE400A	P6KE400CA	342.0	380.0	420.0	1.0	1.0	548	1.1
P6KE440A	P6KE440CA	376.0	418.0	462.0	1.0	1.0	602	1.0
P6KE480A	P6KE480CA	408.0	456.0	504.0	1.0	1.0	658	0.9
P6KE510A	P6KE510CA	434.0	485.0	535.0	1.0	1.0	698	0.9
P6KE530A	P6KE530CA	477.0	503.5	556.5	1.0	1.0	725	0.8
P6KE540A	P6KE540CA	486.0	513.0	567.0	1.0	1.0	740	0.8
P6KE550A	P6KE550CA	495.0	522.5	577.5	1.0	1.0	760	0.8
P6KE600A	P6KE600CA	512.0	570.0	630.0	1.0	1.0	828.0	0.75

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- Note:** 1. For bidirectional type having V_R of 10 volts and less, the I_R limit is double.
2. For parts without A, the V_{BR} is $\pm 10\%$ and V_C is 5% higher than with A parts.

Typical Characteristics Curves

Fig.1- Peak Pulse Power Rating Curve

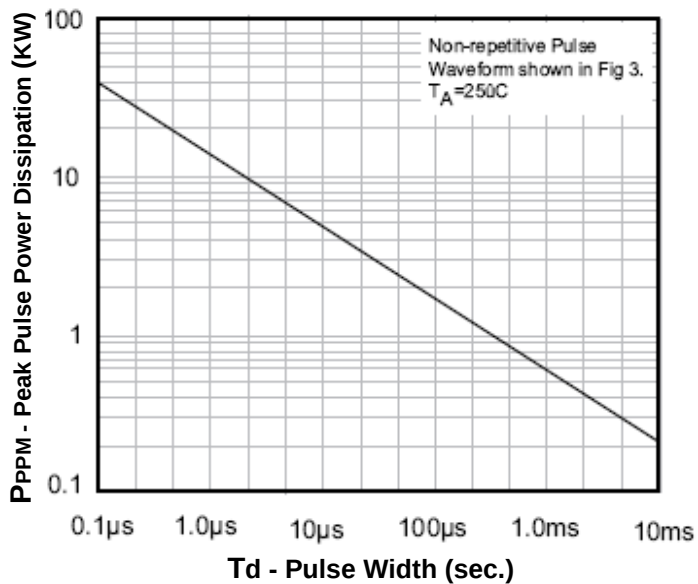


Fig.2- Pulse Derating Curve

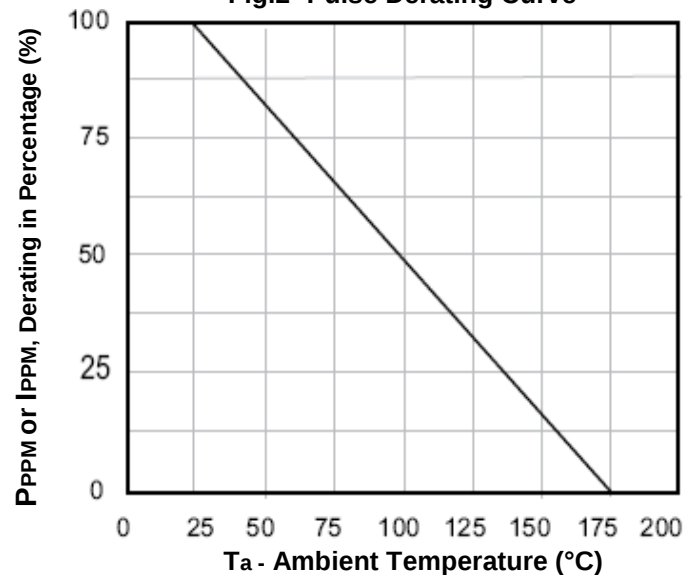


Fig.3- Pulse Waveform

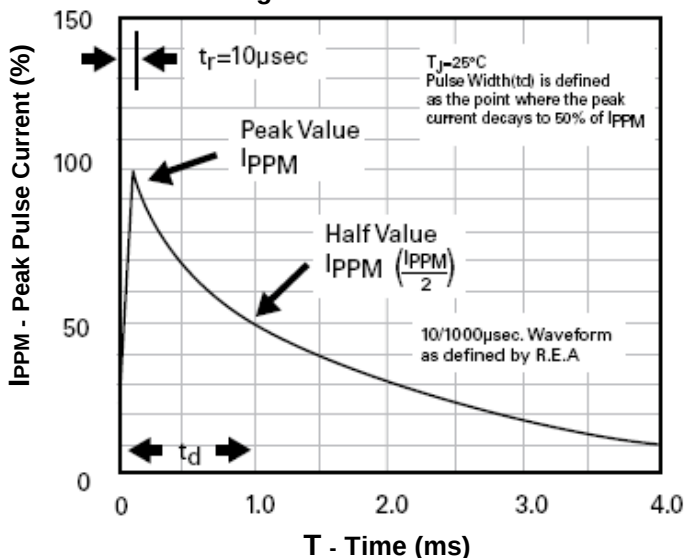
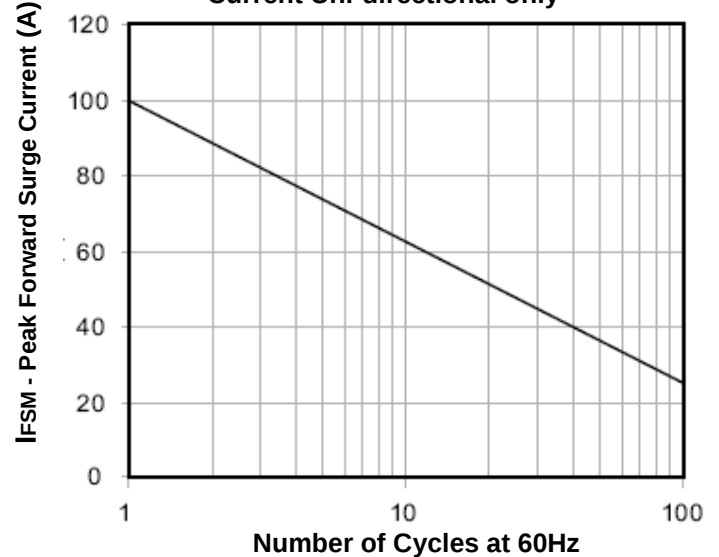


Fig.4 - Max. Non-Repetitive Peak Forward Surge Current Uni-directional only



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Fig.5- Steady State Power Derating Curve

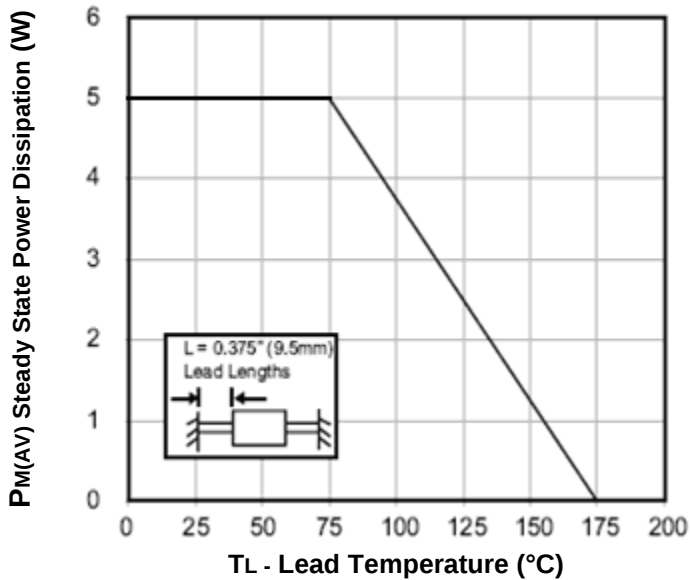
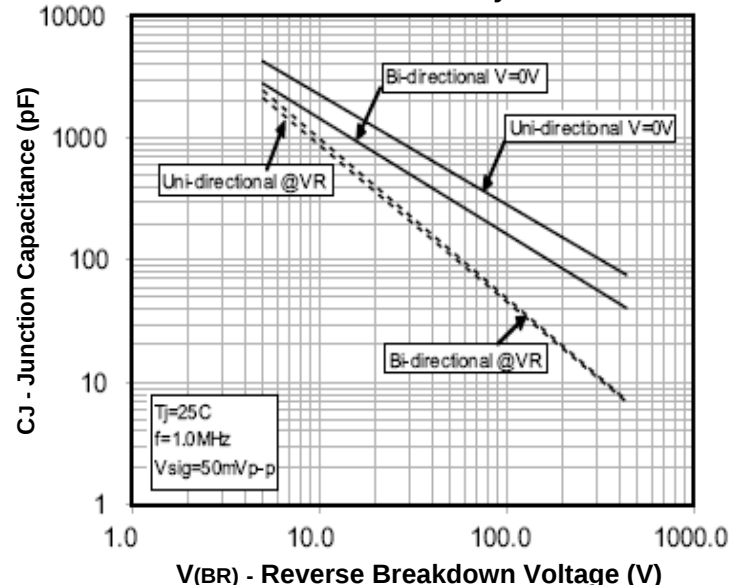
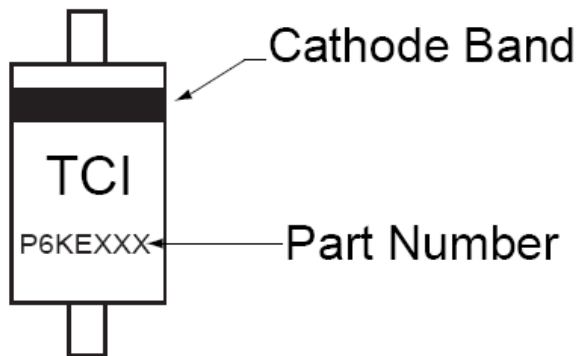


Fig.6- Typical Junction Capacitance
Uni-directional only

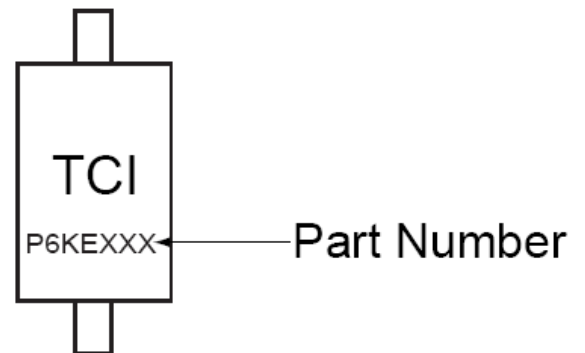


Marking Information

Uni-directional



Bi-directional

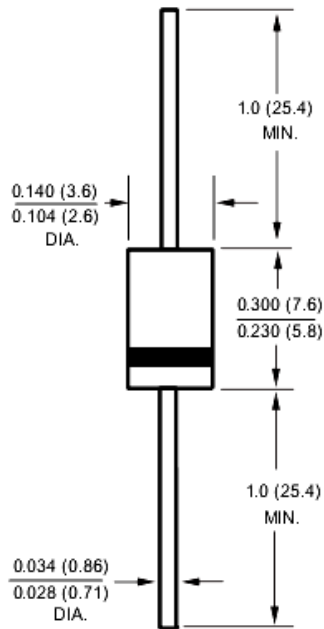


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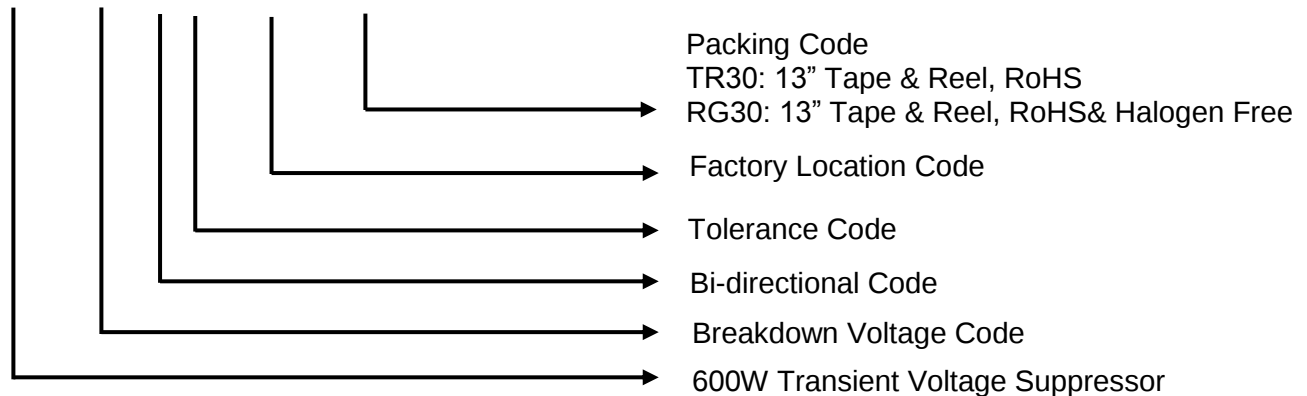
Dimensions in Inches (mm)

Case: DO-204AC (DO-15)



Ordering Information

P6KE XX C A - XX - XX



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P6KE6.8A - 600CA

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