

400W Transient Voltage Suppressor

Features

- Glass passivated chip junction
- 400W 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 (P4KE6.8A/CA to P4KE440A/CA) is UL recognized under component index.
File number E315008
- RoHS Compliant and Halogen Free



Mechanical Data

Case:	DO-204AL(DO-41) 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:	0.012 ounce, 0.3 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	400	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	1.5	W	$T_L=75^{\circ}\text{C}$ (Fig. 5)
I_{FSM}	Peak Forward Surge Current	40	A	8.3ms Single Half Sine Wave Uni-directional only (Note 1)
V_F	Maximum Instantaneous Forward Voltage at 25A for Unidirectional Only	3.5/5.0	V	Note 2
RθJL	Typical Thermal Resistance Junction to Lead	60	$^{\circ}\text{C/W}$	
RθJA	Typical Thermal Resistance Junction to Ambient	100	$^{\circ}\text{C/W}$	

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P4KE6.8A - 550CA

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 Current @ V _{WM}	Max. Clamping Voltage @ I _{PPM}	Max. Peak Pulse Current
			V _{BR}		I _T (mA)			
Uni-Polar	Bi-Polar	V _{WM} (V)	Min.	Max.		I _D (μA)	V _C (V)	I _{PPM} (A)
P4KE6.8A	P4KE6.8CA	5.8	6.45	7.14	10	1000	10.5	39.0
P4KE7.5A	P4KE7.5CA	6.4	7.13	7.88	10	500	11.3	36.3
P4KE8.2A	P4KE8.2CA	7.02	7.79	8.61	10	200	12.1	33.9
P4KE9.1A	P4KE9.1CA	7.78	8.65	9.55	1.0	50	13.4	30.6
P4KE10A	P4KE10CA	8.55	9.5	10.5	1.0	10	14.5	28.3
P4KE11A	P4KE11CA	9.40	10.5	11.6	1.0	5.0	15.6	26.3
P4KE12A	P4KE12CA	10.2	11.4	12.6	1.0	5.0	16.7	24.6
P4KE13A	P4KE13CA	11.1	12.4	13.7	1.0	1.0	18.2	22.5
P4KE15A	P4KE15CA	12.8	14.3	15.8	1.0	1.0	21.2	19.3
P4KE16A	P4KE16CA	13.6	15.2	16.8	1.0	1.0	22.5	18.2
P4KE18A	P4KE18CA	15.3	17.1	18.9	1.0	1.0	25.5	16.1
P4KE20A	P4KE20CA	17.1	19.0	21.0	1.0	1.0	27.7	14.8
P4KE22A	P4KE22CA	18.8	20.9	23.1	1.0	1.0	30.6	13.4
P4KE24A	P4KE24CA	20.5	22.8	25.2	1.0	1.0	33.2	12.3
P4KE27A	P4KE27CA	23.1	25.7	28.4	1.0	1.0	37.5	10.9
P4KE30A	P4KE30CA	25.6	28.5	31.5	1.0	1.0	41.4	9.9
P4KE33A	P4KE33CA	28.2	31.4	34.7	1.0	1.0	45.7	9.0
P4KE36A	P4KE36CA	30.8	34.2	37.8	1.0	1.0	49.9	8.2
P4KE39A	P4KE39CA	33.3	37.1	41.0	1.0	1.0	53.9	7.6
P4KE43A	P4KE43CA	36.8	40.9	45.2	1.0	1.0	59.3	6.9
P4KE47A	P4KE47CA	40.2	44.7	49.4	1.0	1.0	64.8	6.3
P4KE51A	P4KE51CA	43.6	48.5	53.6	1.0	1.0	70.1	5.8

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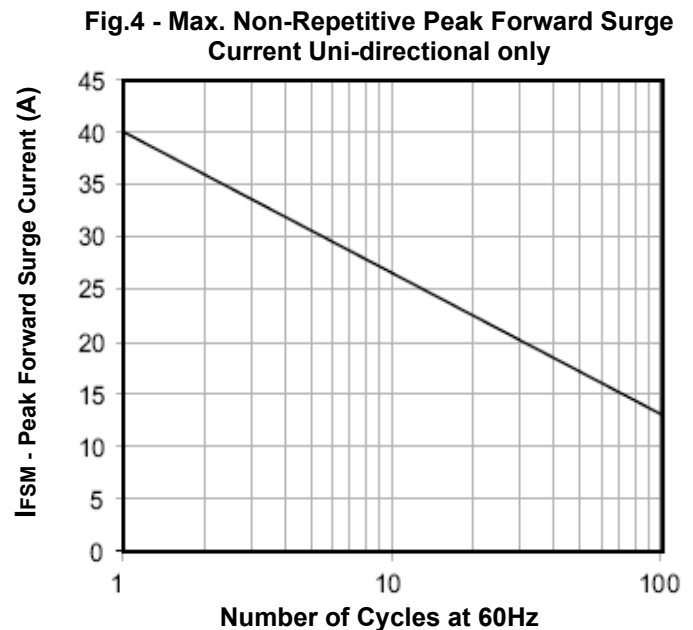
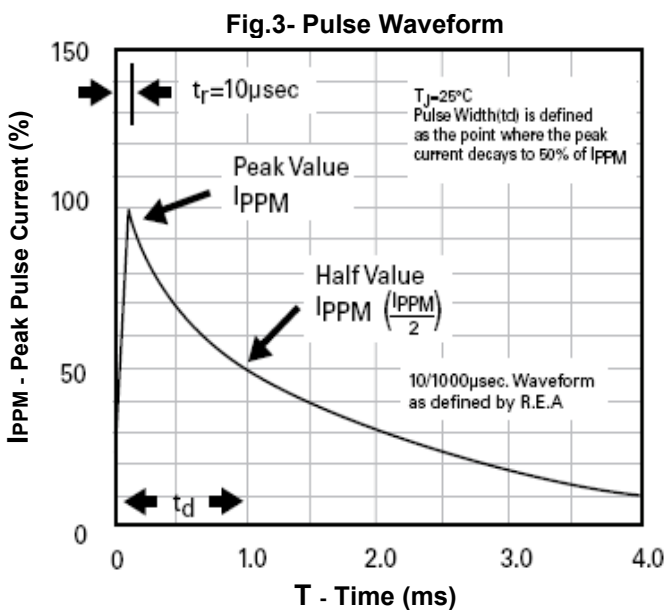
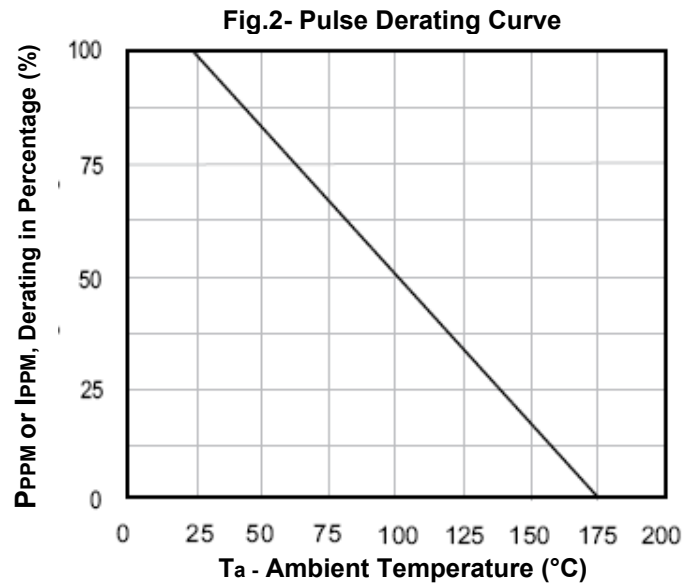
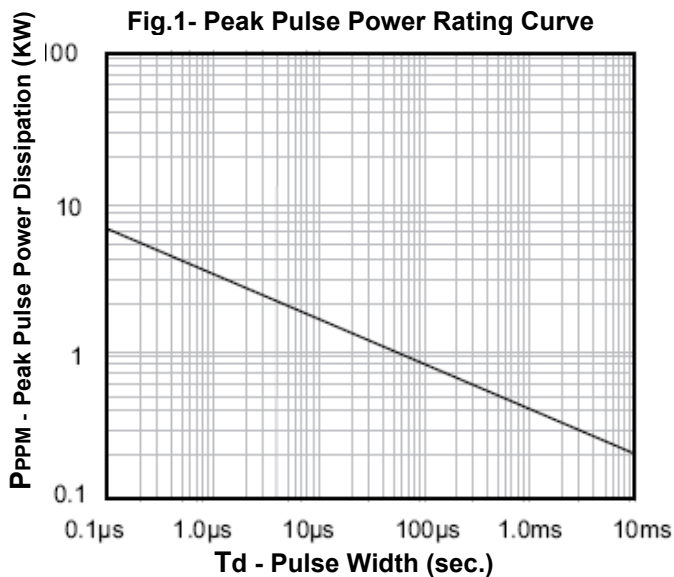
P/N		Stand-Off Voltage	Breakdown Voltage @ Test Current			Max. Reverse Leakage Current @ V _{WM}	Max. Clamping Voltage @ I _{PPM}	Max. Peak Pulse Current
			V _{BR}		I _T (mA)			
Uni-Polar	Bi-Polar	V _{WM} (V)	Min.	Max.			I _D (μA)	V _C (V)
P4KE56A	P4KE56CA	47.8	53.2	58.8	1.0	1.0	77.0	5.3
P4KE62A	P4KE62CA	53.0	58.9	65.1	1.0	1.0	85.0	4.8
P4KE68A	P4KE68CA	58.1	64.6	71.4	1.0	1.0	92.0	4.5
P4KE75A	P4KE75CA	64.1	71.3	78.8	1.0	1.0	103.0	4.0
P4KE82A	P4KE82CA	70.1	77.9	86.1	1.0	1.0	113.0	3.6
P4KE91A	P4KE91CA	77.8	86.5	95.5	1.0	1.0	125.0	3.3
P4KE100A	P4KE100CA	85.5	95.0	105.0	1.0	1.0	137.0	3.0
P4KE110A	P4KE110CA	94.0	105.0	116.0	1.0	1.0	152.0	2.7
P4KE120A	P4KE120CA	102.0	114.0	126.0	1.0	1.0	165.0	2.5
P4KE130A	P4KE130CA	111.0	124.0	137.0	1.0	1.0	179.0	2.3
P4KE150A	P4KE150CA	128.0	143.0	158.0	1.0	1.0	207.0	2.0
P4KE160A	P4KE160CA	136.0	152.0	168.0	1.0	1.0	219.0	1.9
P4KE170A	P4KE170CA	145.0	162.0	179.0	1.0	1.0	234.0	1.8
P4KE180A	P4KE180CA	154.0	171.0	189.0	1.0	1.0	246.0	1.7
P4KE200A	P4KE200CA	171.0	190.0	210.0	1.0	1.0	274.0	1.5
P4KE220A	P4KE220CA	185.0	209.0	231.0	1.0	1.0	328.0	1.3
P4KE250A	P4KE250CA	214.0	237.0	263.0	1.0	1.0	344.0	1.2
P4KE300A	P4KE300CA	256.0	285.0	315.0	1.0	1.0	414.0	1.0
P4KE350A	P4KE350CA	300.0	332.0	368.0	1.0	1.0	482.0	0.85
P4KE400A	P4KE400CA	342.0	380.0	420.0	1.0	1.0	548.0	0.75
P4KE440A	P4KE440CA	376.0	418.0	462.0	1.0	1.0	602.0	0.68
P4KE480A	P4KE480CA	408.0	456.0	504.0	1.0	1.0	658.0	0.61
P4KE510A	P4KE510CA	434.0	485.0	535.0	1.0	1.0	698.0	0.57
P4KE530A	P4KE530CA	477.0	503.5	556.5	1.0	1.0	725.0	0.55
P4KE540A	P4KE540CA	486.0	513.0	567.0	1.0	1.0	740.0	0.54
P4KE550A	P4KE550CA	495.0	522.5	577.5	1.0	1.0	760.0	0.52

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P4KE6.8A - 550CA

- Note:**
1. For bidirectional type having V_R of 10 volts and less, the IR 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



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Fig.5- Steady Pulse Derating Curve

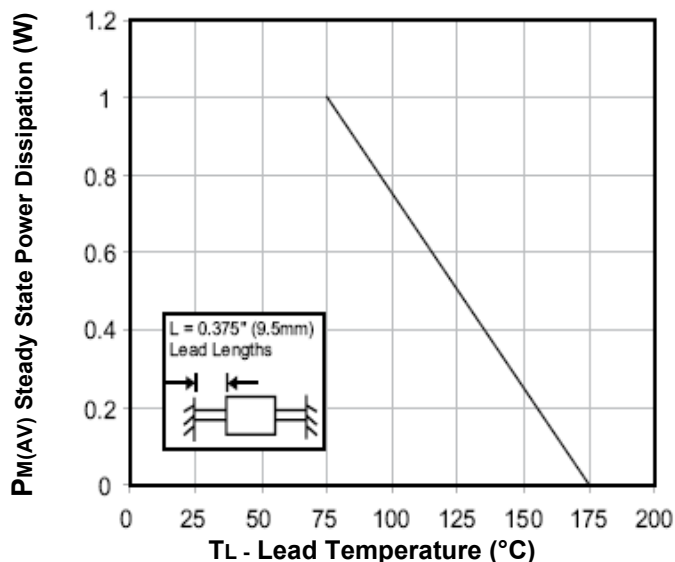
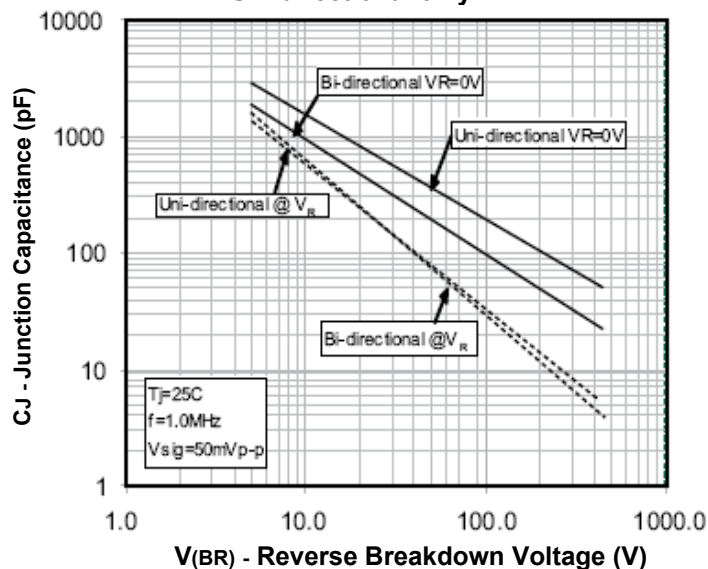
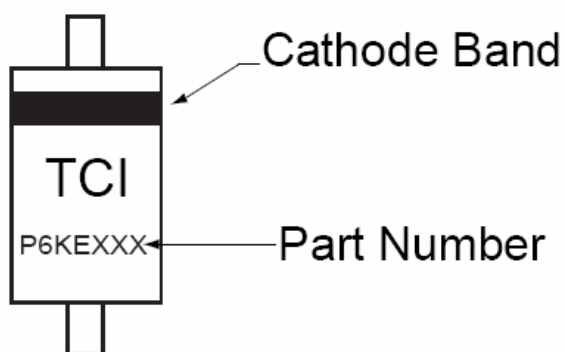


Fig.6- Typical Junction Capacitance
Uni-directional only

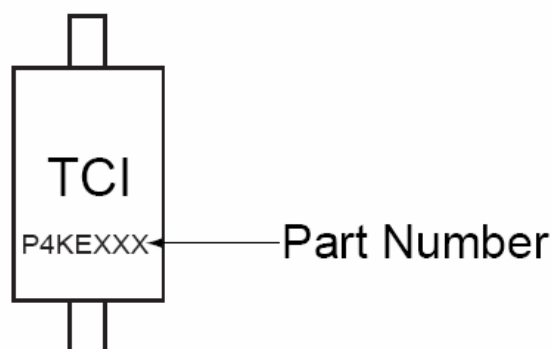


Marking Information

Uni-directional



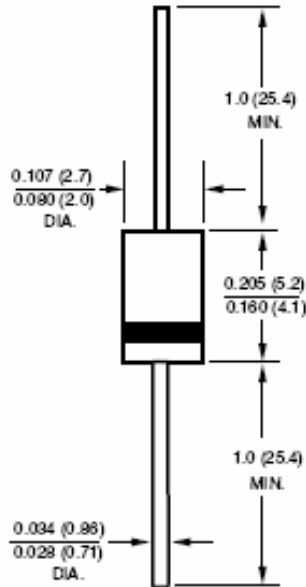
Bi-directional



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Dimensions in inches (mm)



DO-204AL (DO-41)

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