

RoHS Compliant Product  
 A suffix of "-C" specifies halogen and lead-free

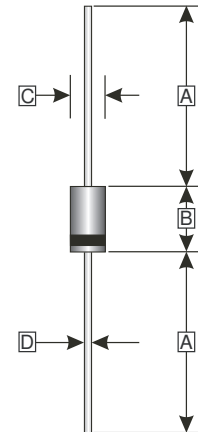
### FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Glass passivated junction
- 400W peak pulse power capability with a 10/1000µs waveform, repetition rate(duty cycle): 0.01%
- Excellent clamping capability
- Low incremental surge resistance
- Very fast response time
- High temp. soldering guaranteed: 265°C/10 seconds, 0.375" (9.5mm) lead length, 5lbs. (2.3kg) tension

### MECHANICAL DATA

- Case: DO-41
- Case Material: Molded Plastic
- Terminals: Axial leads, solderable per MIL-STD-750, Method 2026
- Polarity: For unidirectional types the color band denotes the cathode, which is positive with respect to the anode under normal TVS operation
- Mounting Position: Any

**DO - 41**



REF.	Millimeter	
	Min.	Max.
A	25.4 TYP.	
B	4.10	5.21
C	2.00	2.72
D	0.70	0.90

### ORDER INFORMATION

Part Number	Type
P4KE Series	Lead (Pb)-free
P4KE Series-C	Lead (Pb)-free and Halogen-free

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C unless otherwise specified)

Characteristic	Symbol	Value	Units
Peak Power Dissipation <sup>1</sup> @10/1000µs waveform (Fig.1)	P <sub>PP</sub>	Minimum 400	W
Peak Pulse Current <sup>1</sup> @10/1000µs waveform	I <sub>PP</sub>	(See next table.)	A
Steady State Power Dissipation <sup>2</sup>	T <sub>L</sub> =75°C P <sub>D</sub>	1	W
Peak Forward Surge Current <sup>3</sup> @8.3ms single half sine-wave uni-directional only	I <sub>FSM</sub>	40	A
Maximum Instantaneous Forward Voltage <sup>4</sup> @25A for uni-directional only	V <sub>F</sub>	3.5 / 5	V
Operating Junction & Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55~150	°C
<b>Thermal Resistance Ratings</b>			
Thermal Resistance Junction-Ambient	R <sub>θJA</sub>	100	°C/W

Notes:

1. Non-repetitive current pulse, on Fig. 3 and de-rated above T<sub>A</sub>=25°C per Fig. 2.
2. Mounted on copper pad area of 1.6 x 1.6" (40 x 40mm) per Fig. 5.
3. Measured on 8.3ms single half sine-wave or equivalent square wave, duty cycle=4 pulses per minute maximum.
4. V<sub>F</sub>=3.5V for devices of V<sub>BR</sub><220V, and V<sub>F</sub>=5V max. for devices of V<sub>BR</sub>>220V.

**ELECTRICAL CHARACTERISTIC** ( $T_A=25^{\circ}\text{C}$  unless otherwise specified)

Part Number		Reverse Stand-Off Voltage	Breakdown Voltage $V_{BR}$ @ $I_T$		Test Current	Maximum Clamping Voltage $V_C$ @ $I_{PP}$	Maximum Peak Pulse Current	Maximum Reverse Leakage $I_R$ @ $V_{RWM}$	Maximum Temperature Coefficient Of $V_{BR}$
			Min.	Max.					
Directional		$V_{RRM}$	$V_{BR}$		$I_T$	$V_C$	$I_{PP}$	$I_R$	-
Uni	Bi	V	V		mA	V	A	$\mu\text{A}$	%/ $^{\circ}\text{C}$
P4KE6.8A	P4KE6.8CA	5.8	6.45	7.14	10	10.5	38.1	1000	0.057
P4KE7.5A	P4KE7.5CA	6.4	7.13	7.88	10	11.3	35.4	500	0.061
P4KE8.2A	P4KE8.2CA	7.02	7.79	8.61	10	12.1	33.1	200	0.065
P4KE9.1A	P4KE9.1CA	7.78	8.65	9.55	1	13.4	29.9	50	0.068
P4KE10A	P4KE10CA	8.55	9.5	10.5	1	14.5	27.6	10	0.073
P4KE11A	P4KE11CA	9.4	10.5	11.6	1	15.6	25.6	5	0.075
P4KE12A	P4KE12CA	10.2	11.4	12.6	1	16.7	24	1	0.078
P4KE13A	P4KE13CA	11.1	12.4	13.7	1	18.2	22	1	0.081
P4KE15A	P4KE15CA	12.8	14.3	15.8	1	21.2	18.9	1	0.084
P4KE16A	P4KE16CA	13.6	15.2	16.8	1	22.5	17.8	1	0.086
P4KE18A	P4KE18CA	15.3	17.1	18.9	1	25.2	15.9	1	0.088
P4KE20A	P4KE20CA	17.1	19	21	1	27.7	14.4	1	0.09
P4KE22A	P4KE22CA	18.8	20.9	23.1	1	30.6	13.1	1	0.092
P4KE24A	P4KE24CA	20.5	22.8	25.2	1	33.2	12	1	0.094
P4KE27A	P4KE27CA	23.1	25.7	28.4	1	37.5	10.7	1	0.096
P4KE30A	P4KE30CA	25.6	28.5	31.5	1	41.4	9.7	1	0.097
P4KE33A	P4KE33CA	28.2	31.4	34.7	1	45.7	8.8	1	0.098
P4KE36A	P4KE36CA	30.8	34.2	37.8	1	49.9	8	1	0.099
P4KE39A	P4KE39CA	33.3	37.1	41	1	53.9	7.4	1	0.1
P4KE43A	P4KE43CA	36.8	40.9	45.2	1	59.3	6.7	1	0.101
P4KE47A	P4KE47CA	40.2	44.7	49.4	1	64.8	6.2	1	0.101
P4KE51A	P4KE51CA	43.6	48.5	53.6	1	70.1	5.7	1	0.102
P4KE56A	P4KE56CA	47.8	53.2	58.8	1	77	5.2	1	0.103
P4KE62A	P4KE62CA	53	58.9	65.1	1	85	4.7	1	0.104
P4KE68A	P4KE68CA	58.1	64.6	71.4	1	92	4.3	1	0.104
P4KE75A	P4KE75CA	64.1	71.3	78.8	1	103	3.9	1	0.105
P4KE82A	P4KE82CA	70.1	77.9	86.1	1	113	3.5	1	0.105
P4KE91A	P4KE91CA	77.8	86.5	95.5	1	125	3.2	1	0.106
P4KE100A	P4KE100CA	85.5	95	105	1	137	2.9	1	0.106
P4KE110A	P4KE110CA	94	105	116	1	152	2.6	1	0.107
P4KE120A	P4KE120CA	102	114	126	1	165	2.4	1	0.107
P4KE130A	P4KE130CA	111	124	137	1	179	2.2	1	0.107

**ELECTRICAL CHARACTERISTIC** ( $T_A=25^\circ\text{C}$  unless otherwise specified)

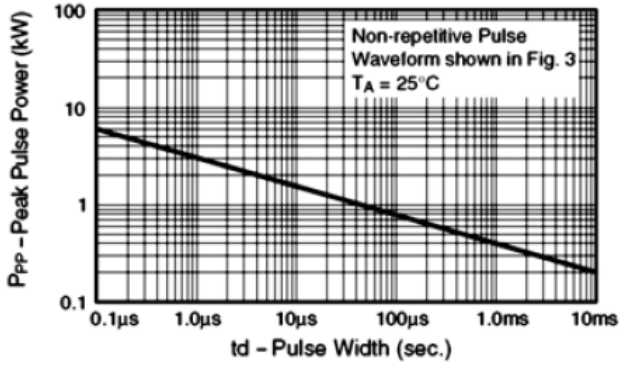
Part Number		Reverse Stand-Off Voltage	Breakdown Voltage $V_{BR}$ @ $I_T$		Test Current	Maximum Clamping Voltage $V_C$ @ $I_{PP}$	Maximum Peak Pulse Current	Maximum Reverse Leakage $I_R$ @ $V_{RWM}$	Maximum Temperature Coefficient Of $V_{BR}$
			Min.	Max.					
Directional		$V_{RRM}$	$V_{BR}$		$I_T$	$V_C$	$I_{PP}$	$I_R$	-
Uni	Bi	V	V		mA	V	A	uA	%/°C
P4KE150A	P4KE150CA	128	143	158	1	207	1.9	1	0.108
P4KE160A	P4KE160CA	136	152	168	1	219	1.8	1	0.108
P4KE170A	P4KE170CA	145	162	179	1	234	1.7	1	0.108
P4KE180A	P4KE180CA	154	171	189	1	246	1.6	1	0.108
P4KE200A	P4KE200CA	171	190	210	1	274	1.5	1	0.108
P4KE220A	P4KE220CA	185	209	231	1	328	1.2	1	0.108
P4KE250A	P4KE250CA	214	237	263	1	344	1.2	1	0.11
P4KE300A	P4KE300CA	256	285	315	1	414	1	1	0.11
P4KE350A	P4KE350CA	300	333	368	1	482	0.83	1	0.11
P4KE400A	P4KE400CA	342	380	420	1	548	0.73	1	0.11
P4KE440A	P4KE440CA	376	418	462	1	602	0.66	1	0.11
P4KE480A	P4KE480CA	408	456	504	1	658	0.61	1	0.11
P4KE510A	P4KE510CA	434	485	535	1	698	0.57	1	0.11
P4KE530A	P4KE530CA	450	503.5	556.5	1	725	0.55	1	0.11
P4KE540A	P4KE540CA	459	513	567	1	740	0.54	1	0.11
P4KE550A	P4KE550CA	467	522.5	577.5	1	760	0.52	1	0.11

Notes:

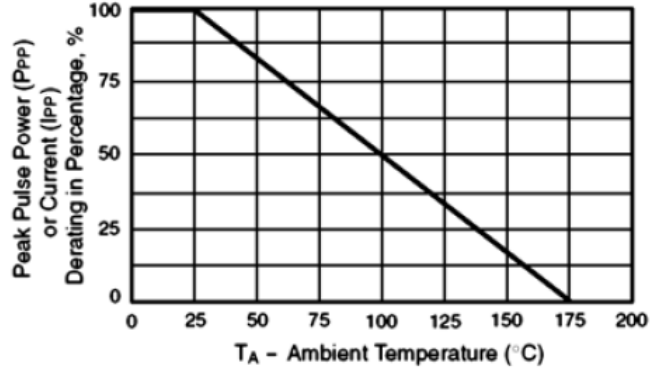
1.  $V_{BR}$  measured after  $I_T$  applied for 300us,  $I_T$ =square wave pulse or equivalent.
2. Surge current waveform per Fig. 3 and de-rate per Fig. 2.
3. For Bi-directional types with  $V_{WM}$  of 10 Volts and less, the  $I_D$  limit is doubled.
4. All terms and symbols are consistent with ANSI/IEEE C62.35.

**CHARACTERISTICS CURVES**

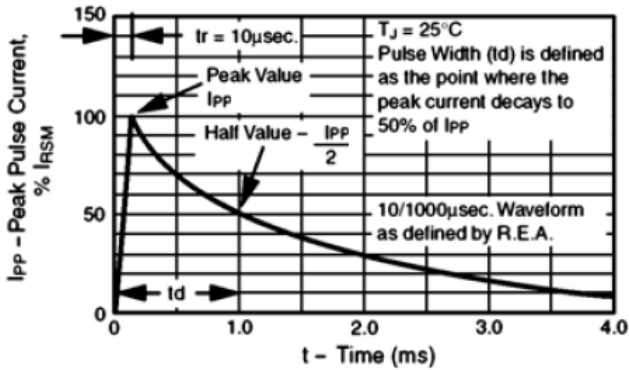
**Fig. 1 – Peak Pulse Power Rating Curve**



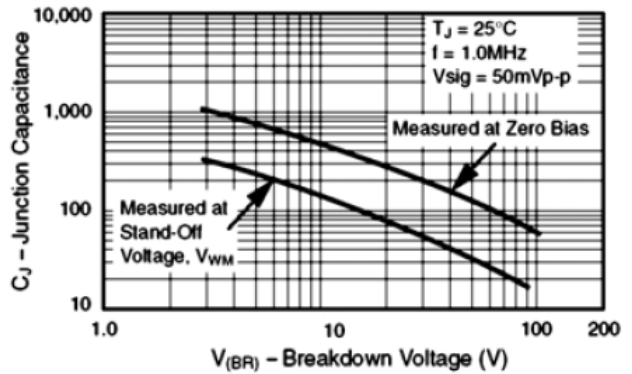
**Fig. 2 – Pulse Derating Curve**



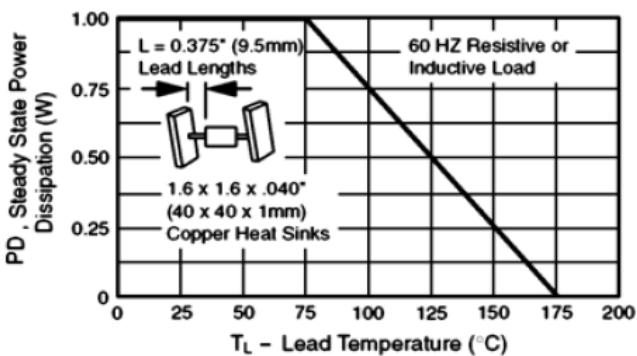
**Fig. 3 – Pulse Waveform**



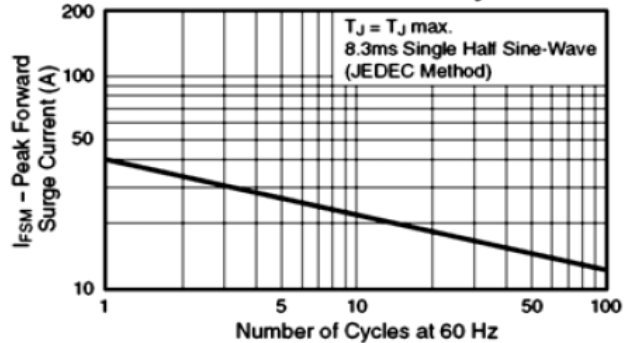
**Fig. 4 – Typ. Junction Capacitance Uni-Directional**



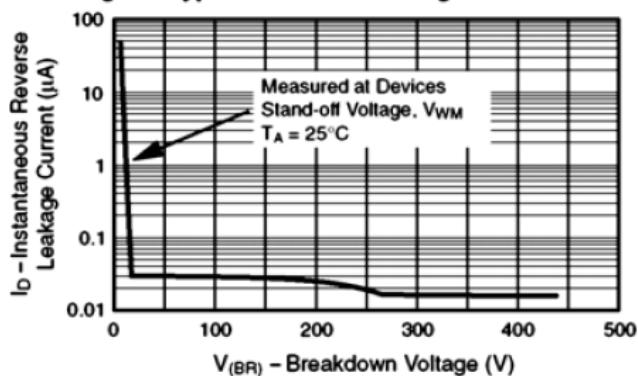
**Fig. 5 – Steady State Power Derating Curve**



**Fig. 6 - Max. Non-Repetitive Forward Surge Current Uni-Directional Only**



**Fig. 7 – Typical Reverse Leakage Characteristics**



**Fig. 8 – Typ. Transient Thermal Impedance**

