



*DC COMPONENTS CO., LTD.*

RECTIFIER SPECIALISTS

P4KE6.8  
THRU  
P4KE440CA

**TECHNICAL SPECIFICATIONS OF TRANSIENT VOLTAGE SUPPRESSOR**

**VOLTAGE RANGE - 6.8 to 440 Volts      PEAK PULSE POWER - 400 Watts**

**FEATURES**

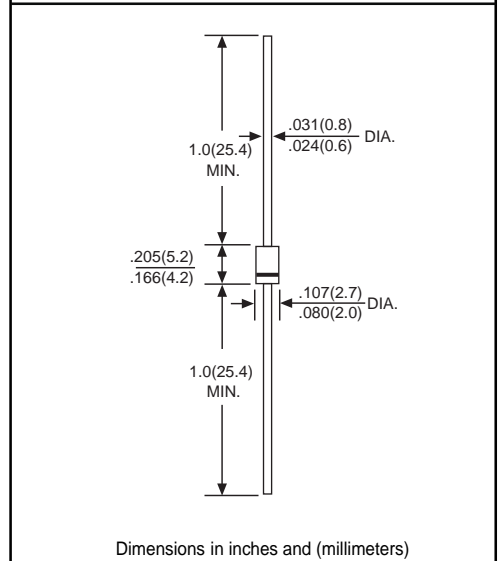
- \* Glass passivated junction
- \* 400 Watts Peak Pulse Power capability on 10/1000  $\mu$ s waveform
- \* Excellent clamping capability
- \* Low zener impedance
- \* Fast response time

**MECHANICAL DATA**

- \* Case: Molded plastic
- \* Epoxy: UL 94V-0 rate flame retardant
- \* Lead: MIL-STD-202E, Method 208 guaranteed
- \* Polarity: Color band denotes positive end (cathode) except bidirectional types
- \* Mounting position: Any
- \* Weight: 0.3 gram



DO-41



**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**

Ratings at 25°C ambient temperature unless otherwise specified.  
Single phase, half wave, 60 Hz, resistive or inductive load,  
For capacitive load, derate current by 20%.

**DEVICES FOR BIPOLAR APPLICATIONS**

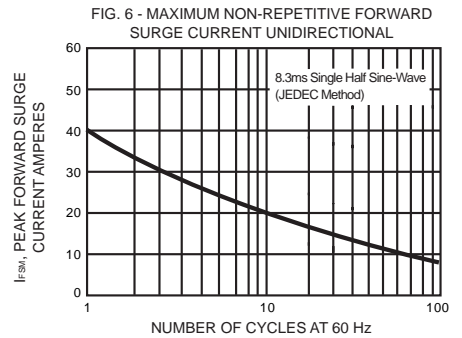
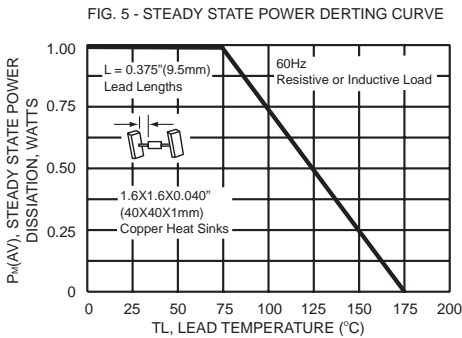
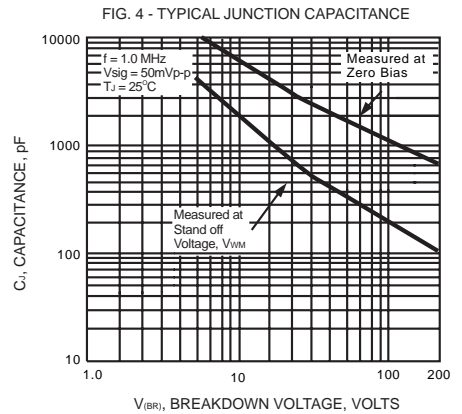
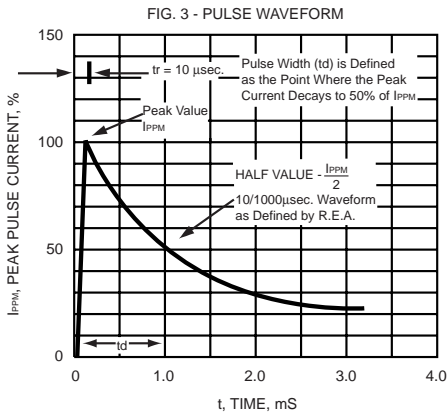
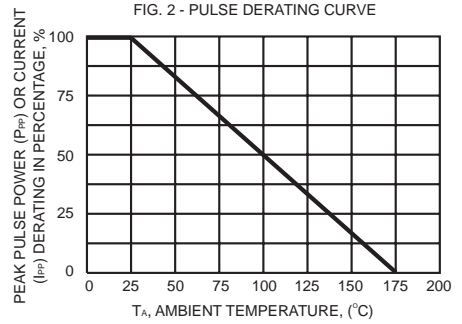
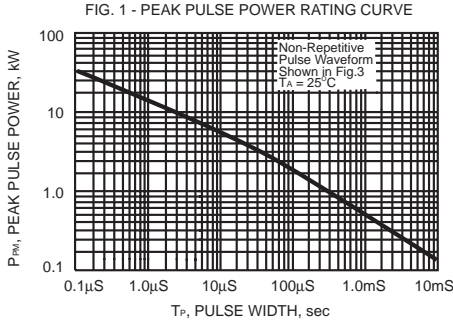
For Bidirectional use C or CA suffix (e.g. P4KE6.8C, P4KE440CA).

Electrical characteristics apply in both directions

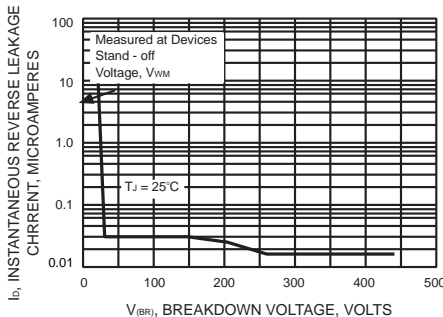
	SYMBOL	VALUE	UNITS
Peak Pulse Power Dissipation on 10/1000 $\mu$ s waveform (Note1, Fig.1)	PPPM	Minimum 400	Watts
Steady State Power Dissipation at T = 75°C Lead Lengths .375"(9.5mm) (Note 2)	P <sub>M(AV)</sub>	1.0	Watts
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load(JEDEC Method) (Note 3)	I <sub>FSM</sub>	40	Amps
Maximum Instantaneous Forward Voltage at 50A for Unidirectional only (Note 4)	V <sub>F</sub>	3.5/6.5	Volts
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-55 to + 175	°C

- NOTES :
1. Non-repetitive current pulse, per Fig.3 and derated above TA = 25°C per Fig. 2.
  2. Mounted on Copper Leaf area of 1.6 X 1.6" (40 X 40mm ) per Fig. 5
  3. 8.3ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum.
  4. V<sub>F</sub> = 3.5V max. for devices of V<sub>(BR)</sub> ≤ 200V max. and V<sub>F</sub> = 6.5V max. for devices of V<sub>(BR)</sub> > 200V.

# RATING AND CHARACTERISTIC CURVES (P4KE6.8 THRU P4KE440CA)



**FIG. 7 - TYPICAL REVERSE LEAKAGE CHARACTERISTICS**



## P4KE (400W) SERIES TRANSIENT VOLTAGE SUPPRESSORS

TYPE	Reverse Stand-off Voltage	Breakdown Voltage @ I <sub>T</sub>		Test Current	Maximum Reverse Leakage @ V <sub>RWM</sub>		Maximum Clamping Voltage @ I <sub>PP</sub>	Maximum Peak Pulse Current
		V <sub>BR</sub>			I <sub>T</sub>	I <sub>R</sub>		
	V <sub>RWM</sub>	Min. V	Max. V	mA		UNI- μA	BI- μA	V <sub>c</sub>
P4KE6.8	5.50	6.12	7.48	10	1000	2000	10.8	38.0
P4KE6.8A	5.80	6.45	7.14	10	1000	2000	10.5	38.1
P4KE7.5	6.05	6.75	8.25	10	500	1000	11.7	34.2
P4KE7.5A	6.40	7.13	7.88	10	500	1000	11.3	35.4
P4KE8.2	6.63	7.38	9.02	10	200	400	12.5	32.0
P4KE8.2A	7.02	7.79	8.61	10	200	400	12.1	33.1
P4KE9.1	7.37	8.19	10.0	1	50	100	13.8	29.0
P4KE9.1A	7.78	8.65	9.50	1	50	100	13.4	29.9
P4KE10	8.10	9.00	11.0	1	10	20	15.0	26.7
P4KE10A	8.55	9.50	10.5	1	10	20	14.5	27.6
P4KE11	8.92	9.90	12.1	1	5	10	16.2	24.7
P4KE11A	9.40	10.5	11.6	1	5	10	15.6	25.6
P4KE12	9.72	10.8	13.2	1	5		17.3	23.1
P4KE12A	10.2	11.4	12.6	1	5		16.7	24.0
P4KE13	10.5	11.7	14.3	1	5		19.0	21.1
P4KE13A	11.1	12.4	13.7	1	5		18.2	22.0
P4KE15	12.1	13.5	16.5	1	5		22.0	18.2
P4KE15A	12.8	14.3	15.8	1	5		21.2	18.9
P4KE16	12.9	14.4	17.6	1	5		23.5	17.0
P4KE16A	13.6	15.2	16.8	1	5		22.5	17.8
P4KE18	14.5	16.2	19.8	1	5		26.5	15.1
P4KE18A	15.3	17.1	18.9	1	5		25.2	15.9
P4KE20	16.2	18.0	22.0	1	5		29.1	13.7
P4KE20A	17.1	19.0	21.0	1	5		27.7	14.4
P4KE22	17.8	19.8	24.2	1	5		31.9	12.5
P4KE22A	18.8	20.9	23.1	1	5		30.6	13.1
P4KE24	19.4	21.6	26.4	1	5		34.7	11.5
P4KE24A	20.5	22.8	25.2	1	5		33.2	12.0
P4KE27	21.8	24.3	29.7	1	5		39.1	10.2
P4KE27A	23.1	25.7	28.4	1	5		37.5	10.7
P4KE30	24.3	27.0	33.0	1	5		43.5	9.2
P4KE30A	25.6	28.5	31.5	1	5		41.4	9.7
P4KE33	26.8	29.7	36.3	1	5		47.7	8.4
P4KE33A	28.2	31.4	34.7	1	5		45.7	8.8
P4KE36	29.1	32.4	39.6	1	5		52.0	7.7
P4KE36A	30.8	34.2	37.8	1	5		49.9	8.0
P4KE39	31.6	35.1	42.9	1	5		56.4	7.1
P4KE39A	33.3	37.1	41.0	1	5		53.9	7.4
P4KE43	34.8	38.7	47.3	1	5		61.9	6.5
P4KE43A	36.8	40.9	45.2	1	5		59.3	6.7
P4KE47	38.1	42.3	51.7	1	5		67.8	5.9
P4KE47A	40.2	44.7	49.4	1	5		64.8	6.2

## P4KE (400W) SERIES TRANSIENT VOLTAGE SUPPRESSORS

TYPE	Reverse Stand-off Voltage	Breakdown Voltage @ I <sub>T</sub>		Test Current	Maximum Reverse Leakage @ V <sub>RWM</sub>		Maximum Clamping Voltage @ I <sub>PP</sub>	Maximum Peak Pulse Current	
		V <sub>BR</sub>			I <sub>T</sub>	I <sub>R</sub>			
		Min. V	Max. V			UNI- μA			BI- μA
V	V	V	mA	μA	μA	V	A		
P4KE51	41.3	45.9	56.1	1	5		73.5	5.4	
P4KE51A	43.6	48.5	53.6	1	5		70.1	5.7	
P4KE56	45.6	50.4	61.6	1	5		80.5	5.0	
P4KE56A	47.8	53.2	58.8	1	5		77.0	5.2	
P4KE62	50.2	55.8	68.2	1	5		89.0	4.5	
P4KE62A	53.0	58.9	65.1	1	5		85.0	4.7	
P4KE68	55.1	61.2	74.8	1	5		98.0	4.1	
P4KE68A	58.1	64.6	71.4	1	5		92.0	4.3	
P4KE75	60.7	67.5	82.5	1	5		108	3.7	
P4KE75A	54.1	71.3	78.8	1	5		103	3.9	
P4KE82	66.4	73.8	90.2	1	5		118	3.4	
P4KE82A	70.1	77.9	86.1	1	5		113	3.5	
P4KE91	73.7	81.9	100	1	5		131	3.1	
P4KE91A	77.8	86.5	95.5	1	5		125	3.2	
P4KE100	81.0	90.0	110	1	5		144	2.8	
P4KE100A	85.5	95.0	105	1	5		137	2.9	
P4KE110	89.2	99.0	121	1	5		158	2.5	
P4KE110A	94.0	105	116	1	5		152	2.6	
P4KE120	97.2	108	132	1	5		173	2.3	
P4KE120A	102	114	126	1	5		165	2.4	
P4KE130	105	117	143	1	5		187	2.1	
P4KE130A	111	124	137	1	5		179	2.2	
P4KE150	121	135	165	1	5		215	1.9	
P4KE150A	128	143	158	1	5		207	1.9	
P4KE160	130	144	176	1	5		230	1.7	
P4KE160A	136	152	168	1	5		219	1.8	
P4KE170	138	153	187	1	5		244	1.6	
P4KE170A	145	162	179	1	5		234	1.7	
P4KE180	146	162	198	1	5		258	1.6	
P4KE180A	154	171	189	1	5		246	1.6	
P4KE200	162	180	220	1	5		287	1.4	
P4KE200A	171	190	210	1	5		274	1.5	
P4KE220	175	198	242	1	5		344	1.2	
P4KE220A	185	209	231	1	5		328	1.2	
P4KE250	202	225	275	1	5		360	1.1	
P4KE250A	214	237	263	1	5		344	1.2	
P4KE300	243	270	330	1	5		430	0.93	
P4KE300A	256	285	315	1	5		414	1.0	
P4KE350	284	315	385	1	5		504	0.79	
P4KE350A	300	332	368	1	5		482	0.83	
P4KE400	324	360	440	1	5		574	0.7	
P4KE400A	342	380	420	1	5		548	0.73	
P4KE440	356	396	484	1	5		631	0.63	
P4KE440A	376	418	462	1	5		602	0.66	

- NOTES: 1. V<sub>BR</sub> measured after I<sub>T</sub> applied for 300μs. I<sub>T</sub> = Square Wave Pulse or equivalent.  
2. For Bidirectional use "C" or "CA" Suffix for all types (e.g.: P4KE6.8C, P4KE6.8CA, P4KE440C, P4KE440CA).  
Electrical characteristics apply in both directions.  
3. For bidirectional types having V<sub>RWM</sub> of 10 volts and less, the I<sub>D</sub> limit is doubled.

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