



*DC COMPONENTS CO., LTD.*

RECTIFIER SPECIALISTS

P6KE6.8  
THRU  
P6KE440CA

**TECHNICAL SPECIFICATIONS OF TRANSIENT VOLTAGE SUPPRESSOR**

**VOLTAGE RANGE - 6.8 to 440Volts      PEAK PULAE POWER - 600 Watts**

**FEATURES**

- \* Glass passivated junction
- \* 600 Watts Peak Pulse Power capability on 10/1000  $\mu$ s waveform
- \* Excellent clamping capability
- \* Low zener impedance
- \* Fast response time

**MECHANICAL DATA**

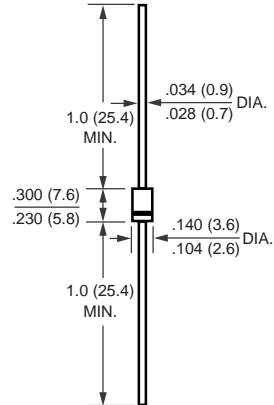
- \* Case: Molded plastic
- \* Epoxy: UL 94V-0 rate flame retardant
- \* Lead: MIL-STD-202E, Method 208 guaranteed
- \* Polarity: Color band denotes positive end (cathode) except bidirectional types
- \* Mounting position: Any
- \* Weight: 0.4 gram

**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%.



DO-15



Dimensions in inches and (millimeters)

**DEVICES FOR BIPOLAR APPLICATIONS**

For Bidirectional use C or CA suffix (e.g. P6KE6.8C, P6KE440CA).

Electrical characteristics apply in both directions

	SYMBOL	VALUE	UNITS
Peak Pulse Power Dissipation on 10/1000 $\mu$ s waveform (Note1, FIG.1)	PPPM	Minimum 600	Watts
Steady State Power Dissipation at T = 75°C Lead Lengths .375"(9.5mm) (Note 2)	P <sub>M(AV)</sub>	5.0	Watts
Peak Forward Surge Current, 8.3ms single half sine-wave superimposed on rated load(JEDEC Method) (Note 3)	I <sub>FSM</sub>	100	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. VF = 3.5V max. for devices of V<sub>(BR)</sub> ≤ 200V max. and VF = 6.5V max. for devices of V<sub>(BR)</sub> > 200V.

# RATING AND CHARACTERISTIC CURVES (P6KE6.8 THRU P6KE440CA)

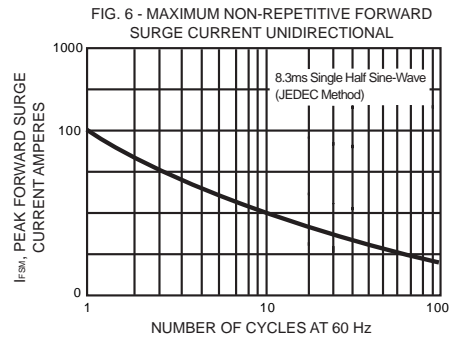
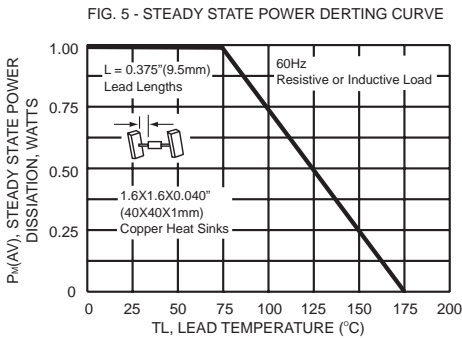
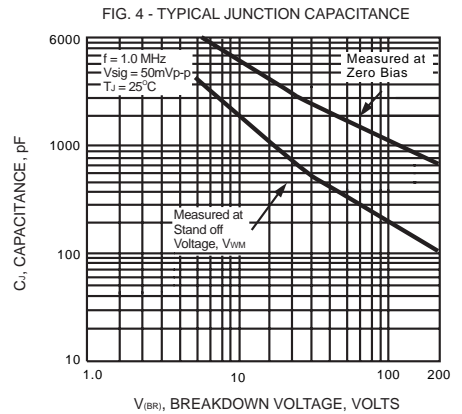
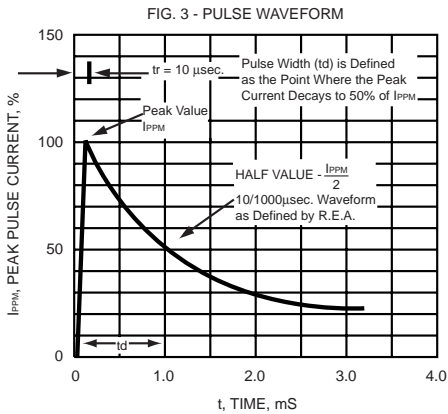
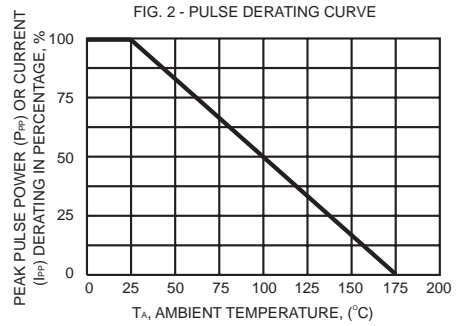
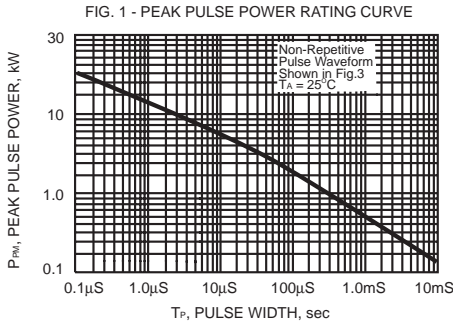
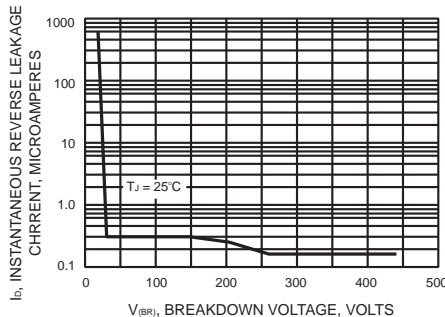


FIG. 7 - TYPICAL REVERSE LEAKAGE CHARACTERISTICS



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## P6KE (600W) 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>RWM</sub> V	V <sub>BR</sub>		I <sub>T</sub> mA	I <sub>R</sub>		V <sub>c</sub> V	I <sub>PP</sub> A
		Min.	Max.		UNI-	BI-		
		V	V		μA	μA		
P6KE6.8	5.50	6.12	7.48	10	1000	2000	10.8	56.0
P6KE6.8A	5.80	6.45	7.14	10	1000	2000	10.5	57.0
P6KE7.5	6.05	6.75	8.25	10	500	1000	11.7	51.0
P6KE7.5A	6.40	7.13	7.88	10	500	1000	11.3	53.0
P6KE8.2	6.63	7.38	9.02	10	200	400	12.5	48.0
P6KE8.2A	7.02	7.79	8.61	10	200	400	12.1	50.0
P6KE9.1	7.37	8.19	10.0	1	50	100	13.8	44.0
P6KE9.1A	7.78	8.65	9.50	1	50	100	13.4	45.0
P6KE10	8.10	9.00	11.0	1	10	20	15.0	40.0
P6KE10A	8.55	9.50	10.5	1	10	20	14.5	41.0
P6KE11	8.92	9.90	12.1	1	5	10	16.2	37.0
P6KE11A	9.40	10.5	11.6	1	5	10	15.6	38.0
P6KE12	9.72	10.8	13.2	1	5		17.3	35.0
P6KE12A	10.2	11.4	12.6	1	5		16.7	36.0
P6KE13	10.5	11.7	14.3	1	5		19.0	32.0
P6KE13A	11.1	12.4	13.7	1	5		18.2	33.0
P6KE15	12.1	13.5	16.5	1	5		22.0	27.0
P6KE15A	12.8	14.3	15.8	1	5		21.2	28.0
P6KE16	12.9	14.4	17.6	1	5		23.5	26.0
P6KE16A	13.6	15.2	16.8	1	5		22.5	27.0
P6KE18	14.5	16.2	19.8	1	5		26.5	23.0
P6KE18A	15.3	17.1	18.9	1	5		25.2	24.0
P6KE20	16.2	18.0	22.0	1	5		29.1	21.0
P6KE20A	17.1	19.0	21.0	1	5		27.7	22.0
P6KE22	17.8	19.8	24.2	1	5		31.9	19.0
P6KE22A	18.8	20.9	23.1	1	5		30.6	20.0
P6KE24	19.4	21.6	26.4	1	5		34.7	17.0
P6KE24A	20.5	22.8	25.2	1	5		33.2	18.0
P6KE27	21.8	24.3	29.7	1	5		39.1	15.0
P6KE27A	23.1	25.7	28.4	1	5		37.5	16.0
P6KE30	24.3	27.0	33.0	1	5		43.5	14.0
P6KE30A	25.6	28.5	31.5	1	5		41.4	14.4
P6KE33	26.8	29.7	36.3	1	5		47.7	12.6
P6KE33A	28.2	31.4	34.7	1	5		45.7	13.2
P6KE36	29.1	32.4	39.6	1	5		52.0	11.6
P6KE36A	30.8	34.2	37.8	1	5		49.9	12.0
P6KE39	31.6	35.1	42.9	1	5		56.4	10.6
P6KE39A	33.3	37.1	41.0	1	5		53.9	11.2
P6KE43	34.8	38.7	47.3	1	5		61.9	9.6
P6KE43A	36.8	40.9	45.2	1	5		59.3	10.1
P6KE47	38.1	42.3	51.7	1	5		67.8	8.9
P6KE47A	40.2	44.7	49.4	1	5		64.8	9.3



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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>RWM</sub> V	V <sub>BR</sub>		I <sub>T</sub> mA	I <sub>R</sub>		V <sub>c</sub> V	I <sub>PP</sub> A
		Min.	Max.		UNI- μA	BI- μA		
		V	V					
P6KE51	41.3	45.9	56.1	1	5	73.5	8.2	
P6KE51A	43.6	48.5	53.6	1	5	70.1	8.6	
P6KE56	45.6	50.4	61.6	1	5	80.5	7.4	
P6KE56A	47.8	53.2	58.8	1	5	77.0	7.8	
P6KE62	50.2	55.8	68.2	1	5	89.0	6.8	
P6KE62A	53.0	58.9	65.1	1	5	85.0	7.1	
P6KE68	55.1	61.2	74.8	1	5	98.0	6.1	
P6KE68A	58.1	64.6	71.4	1	5	92.0	6.5	
P6KE75	60.7	67.5	82.5	1	5	108	5.5	
P6KE75A	54.1	71.3	78.8	1	5	103	5.8	
P6KE82	66.4	73.8	90.2	1	5	118	5.1	
P6KE82A	70.1	77.9	86.1	1	5	113	5.3	
P6KE91	73.7	81.9	100	1	5	131	4.5	
P6KE91A	77.8	86.5	95.5	1	5	125	4.8	
P6KE100	81.0	90.0	110	1	5	144	4.2	
P6KE100A	85.5	95.0	105	1	5	137	4.4	
P6KE110	89.2	99.0	121	1	5	158	3.8	
P6KE110A	94.0	105	116	1	5	152	4.0	
P6KE120	97.2	108	132	1	5	173	3.5	
P6KE120A	102	114	126	1	5	165	3.6	
P6KE130	105	117	143	1	5	187	3.2	
P6KE130A	111	124	137	1	5	179	3.3	
P6KE150	121	135	165	1	5	215	2.8	
P6KE150A	128	143	158	1	5	207	2.9	
P6KE160	130	144	176	1	5	230	2.6	
P6KE160A	136	152	168	1	5	219	2.7	
P6KE170	138	153	187	1	5	244	2.5	
P6KE170A	145	162	179	1	5	234	2.6	
P6KE180	146	162	198	1	5	258	2.3	
P6KE180A	154	171	189	1	5	246	2.4	
P6KE200	162	180	220	1	5	287	2.1	
P6KE200A	171	190	210	1	5	274	2.2	
P6KE220	175	198	242	1	5	344	1.8	
P6KE220A	185	209	231	1	5	328	1.9	
P6KE250	202	225	275	1	5	360	1.7	
P6KE250A	214	237	263	1	5	344	1.8	
P6KE300	243	270	330	1	5	430	1.4	
P6KE300A	256	285	315	1	5	414	1.5	
P6KE350	284	315	385	1	5	504	1.2	
P6KE350A	300	332	368	1	5	482	1.3	
P6KE400	324	360	440	1	5	574	1.05	
P6KE400A	342	380	420	1	5	548	1.1	
P6KE440	356	396	484	1	5	631	0.99	
P6KE440A	376	418	462	1	5	602	1.04	

- 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.: P6KE6.8C, P6KE6.8CA, P6KE440C, P6KE440CA).  
 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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