

**P6KE SERIES**

**TRANSIENT VOLTAGE SUPPRESSOR DIODES**

**FEATURE**

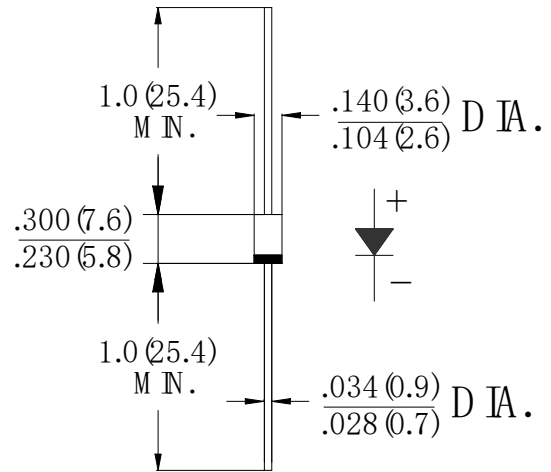
- . Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- . 600W surge capability at 10×100us waveform, Duty cycle: 0.01%
- . Excellent clamping capability
- . Low zener impedance
- . Fast response time: Typically less than 1.0ps from 0 volts to VBR for unidirectional and 5.0ns for bidirectional
- . Typical IR less than 1 μA above 10V
- . High temperature soldering guaranteed: 260°C/10 seconds / .375" lead length / 5lbs tension

**MECHANICAL DATA**

- . Terminal: Plated axial leads solderable per MIL-STD 202E, method 208C
- . Case: Molded with UL-94 Class V-0 recognized Flame Retardant Epoxy
- . Polarity: color band denotes cathode except bipolar

Voltage Range  
6.8 to 400 Vots  
600 Watts Peak Power  
5.0Watt Steady State

**DO-15**



Dimensions in inches and (millimeters)

**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**

Rating at 25°C ambient temperature unless otherwise stated.

Single-phase, half-wave, 60HZ, resistive or inductive load. For capacitive load, derate current by 20%

Type Number	SYM BOL	Value	units
Peak Power Dissipation at Ta=25°C, Tp=1ms (note 1)	<b>P<sub>PPM</sub></b>	600	Watts
Steady State Power Dissipation .375" lead length at T <sub>L</sub> =75°C (note 2)	<b>P<sub>D</sub></b>	5.0	Watts
Peak Forward Surge Current 8.3ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method) (note 3)	<b>I<sub>FSM</sub></b>	60	Amps
Storage Temperature	<b>T<sub>STG</sub></b>	-55 to +150	°C
Operating Junction Temperature	<b>T<sub>J</sub></b>	-55 to +150	°C

**Note:**

1. Non-repetitive Current Pulse Per Fig.3 and Derated above Ta=25°C Per Fig.2 .
2. Mounted on Copper Pad Area of 1.6×1.6" (40×40mm) Per Fig.5 .
3. 8.3ms Single Half Sine-wave or Equivalent Square Wave, Duty Cycle=4 Pulses Per Minutes Maximum.

**Devices for Bipolar Applications**

1. For Bidirectional Use C Suffix for Types P6KE6.8A thru Types P6KE400A.
2. Electrical Characteristics Apply in Both Directions.

**ELECTRICAL CHARACTERISTICS(TA=25°C unless otherwise noted)**

Device		Nominal Voltage (volts)	Breakdown Voltage		Test Current @IT (mA)	Stand-Off Voltage VWM (volts)	Maximum Reverse Leakage At VWM ID(μA)	Maximum Peak Pulse Current PPM (note2)(Amps)	Maximum Clamping Voltage at IPPM VC(Volts)
			VBR(volts)(note1)						
			Min	Max					
UNI	BI								
P6KE6.8A	P6KE6.8CA	6.8	6.45	7.14	10	5.80	1000	58.1	10.5
P6KE7.5A	P6KE7.5CA	7.5	7.13	7.88	10	6.4	500	54	11.3
P6KE8.2A	P6KE8.2CA	8.2	7.79	8.61	10	7.02	200	50.4	12.1
P6KE9.1A	P6KE9.1CA	9.1	8.65	9.55	1.0	7.78	50	45.5	13.4
P6KE10A	P6KE10CA	10	9.50	10.5	1.0	8.55	10	42.1	14.5
P6KE11A	P6KE11CA	11	10.5	11.6	1.0	9.40	5.0	39.1	15.6
P6KE12A	P6KE12CA	12	11.4	12.6	1.0	10.2	5.0	36.5	16.7
P6KE13A	P6KE13CA	13	12.4	13.7	1.0	11.1	1.0	33.5	18.2
P6KE15A	P6KE15CA	15	14.3	15.8	1.0	12.8	1.0	28.8	21.2
P6KE16A	P6KE16CA	16	15.2	16.8	1.0	13.6	1.0	27.1	22.5
P6KE18A	P6KE18CA	18	17.1	18.9	1.0	15.3	1.0	24.2	25.2
P6KE20A	P6KE20CA	20	19.0	21.0	1.0	17.1	1.0	22	27.7
P6KE22A	P6KE22CA	22	20.9	23.1	1.0	18.8	1.0	19.9	30.6
P6KE24A	P6KE24CA	24	22.8	25.2	1.0	20.5	1.0	18.4	33.2
P6KE27A	P6KE27CA	27	25.7	28.4	1.0	23.1	1.0	16.3	37.5
P6KE30A	P6KE30CA	30	28.5	31.5	1.0	25.6	1.0	14.7	41.4
P6KE33A	P6KE33CA	33	31.4	34.7	1.0	28.2	1.0	13.3	45.7
P6KE36A	P6KE36CA	36	34.2	37.8	1.0	30.8	1.0	12.2	49.9
P6KE39A	P6KE39CA	39	37.1	41.0	1.0	33.3	1.0	11.3	53.9
P6KE43A	P6KE43CA	43	40.9	45.2	1.0	36.8	1.0	10.3	59.3
P6KE47A	P6KE47CA	47	44.7	49.4	1.0	40.2	1.0	9.4	64.8
P6KE51A	P6KE51CA	51	48.5	53.6	1.0	43.6	1.0	8.7	70.1
P6KE56A	P6KE56CA	56	53.2	58.8	1.0	47.8	1.0	7.9	77
P6KE62A	P6KE62CA	62	58.9	65.1	1.0	53.0	1.0	7.2	85
P6KE68A	P6KE68CA	68	64.6	71.4	1.0	58.1	1.0	6.6	92
P6KE75A	P6KE75CA	75	71.3	78.8	1.0	64.1	1.0	5.9	103
P6KE82A	P6KE82CA	82	77.9	86.1	1.0	70.1	1.0	5.4	113
P6KE91A	P6KE91CA	91	86.5	95.5	1.0	77.8	1.0	4.9	125
P6KE100A	P6KE100CA	100	95.0	105.0	1.0	85.5	1.0	4.5	137
P6KE110A	P6KE110CA	110	105.0	116.0	1.0	94.0	1.0	4	152
P6KE120A	P6KE120CA	120	114.0	126.0	1.0	102.0	1.0	3.7	165
P6KE130A	P6KE130CA	130	124.0	137.0	1.0	111.0	1.0	3.4	179
P6KE150A	P6KE150CA	150	143.0	158.0	1.0	128.0	1.0	2.9	207
P6KE160A	P6KE160CA	160	152.0	168.0	1.0	136.0	1.0	2.8	219
P6KE170A	P6KE170CA	170	162.0	179.0	1.0	145.0	1.0	2.6	234
P6KE180A	P6KE180CA	180	171.0	189.0	1.0	154.0	1.0	2.5	246
P6KE200A	P6KE200CA	200	190.0	210.0	1.0	171.0	1.0	2.2	274
P6KE220A	P6KE220CA	220	209.0	231.0	1.0	185.0	1.0	1.9	328
P6KE250A	P6KE250CA	250	237.0	263.0	1.0	214.0	1.0	1.8	344
P6KE300A	P6KE300CA	300	285.0	315.0	1.0	256.0	1.0	1.5	414
P6KE350A	P6KE350CA	350	332.0	368.0	1.0	300.0	1.0	1.4	482
P6KE400A	P6KE400CA	400	380.0	420.0	1.0	342.0	1.0	1.1	548

**Note:**

- VBR measured after IT applied for 300us, IT=square wave pulse or equivalent.
- Surge current waveform per Figure 3 and derate per Figure 2.
- All terms and symbols are consistent with ANSI/IEEE C62.35.

RATING AND CHARACTERISTIC CURVES

FIG.1-PEAK PULSE POWER RATING CURVE

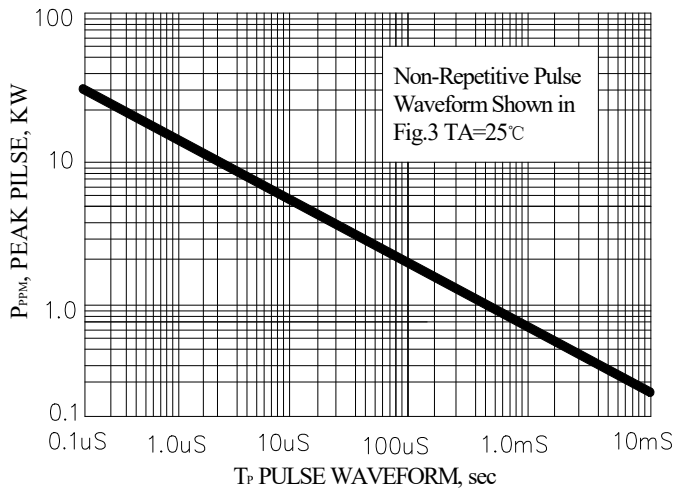


FIG.2-PULSE DERATING CURVE

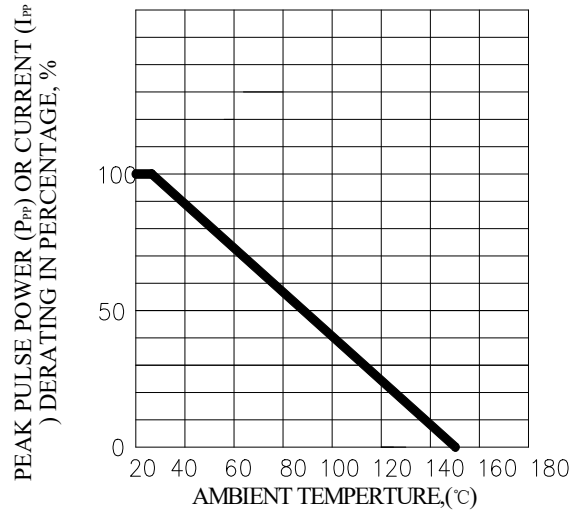


FIG.3-PULSE WAVEFORM

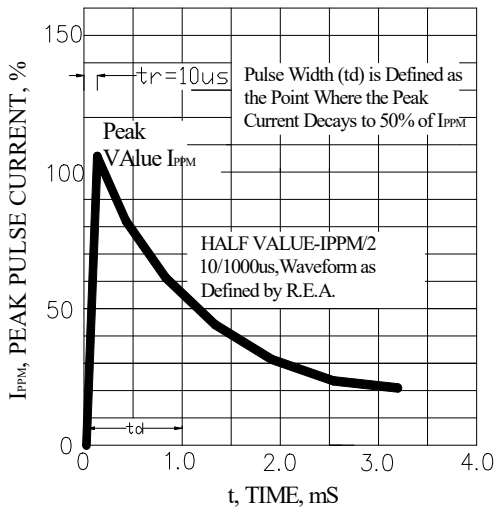


FIG.4- TYPICAL JUNCTION CAPACITANCE

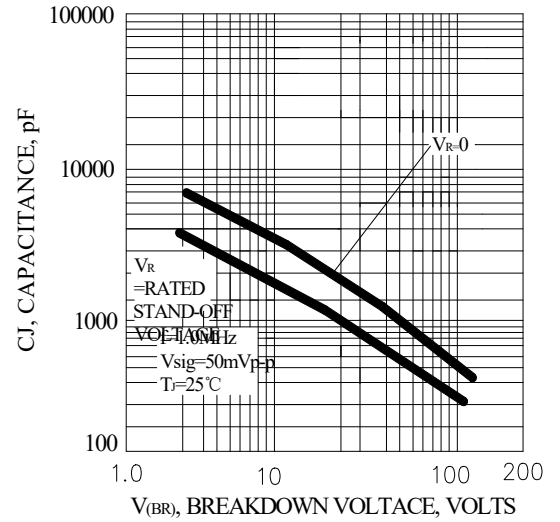


FIG.5- STEADY STATE POWER DERATING CURVE

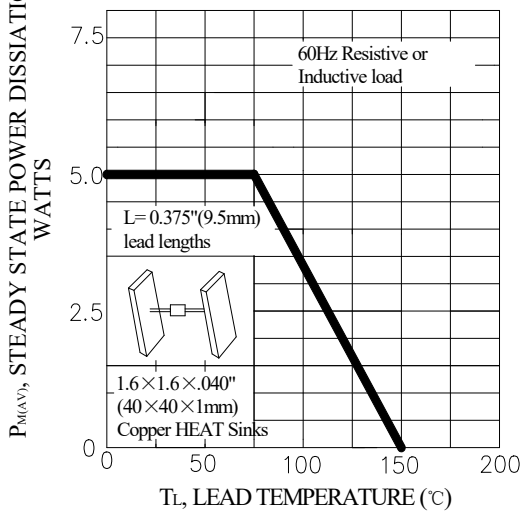
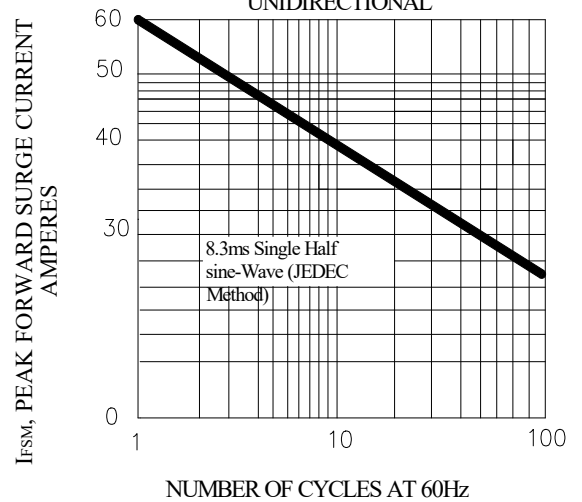
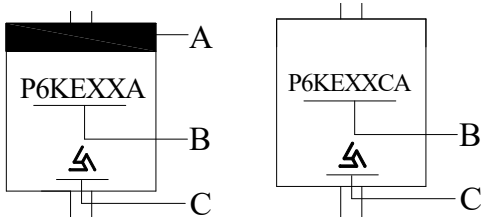


FIG.6- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT UNIDIRECTIONAL



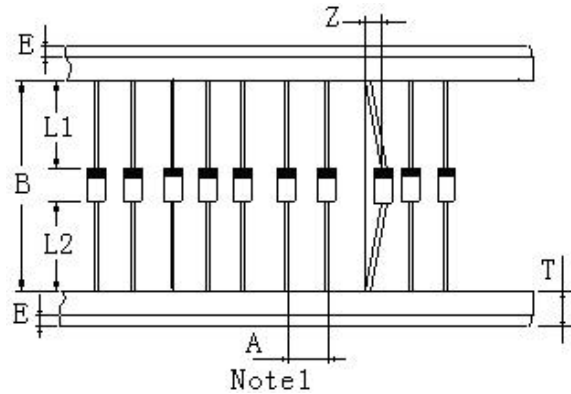
## Marking and packaging illustration

### 1、Marking



SYMBOL	Explanation
A	Color Band Denotes Cathode
B	Product Name
C	Trademark

### 2、Packaging



ITEM	SYMBOL	SPECIFICATIONS	
		(mm)	(inch)
Component alignment	Z	1.2max	0.048max
Tape width	T	6.0±0.4	0.236±0.016
Exposed adhesive	E	0.8max	0.032max
Body eccentricity	L1-L2	1.0max	0.040max
Component	A	5.0±0.5	0.2±0.02
Inner tap	B	52.0~53.5	2.06~2.11
NOTE: Each component lead shall be sandwiched between tapes for a minimum of 2.5mm (0.1inch)			