

# P6KE SERIES

**V<sub>BR</sub> : 6.8 - 440 Volts**  
**P<sub>PK</sub> : 600 Watts**

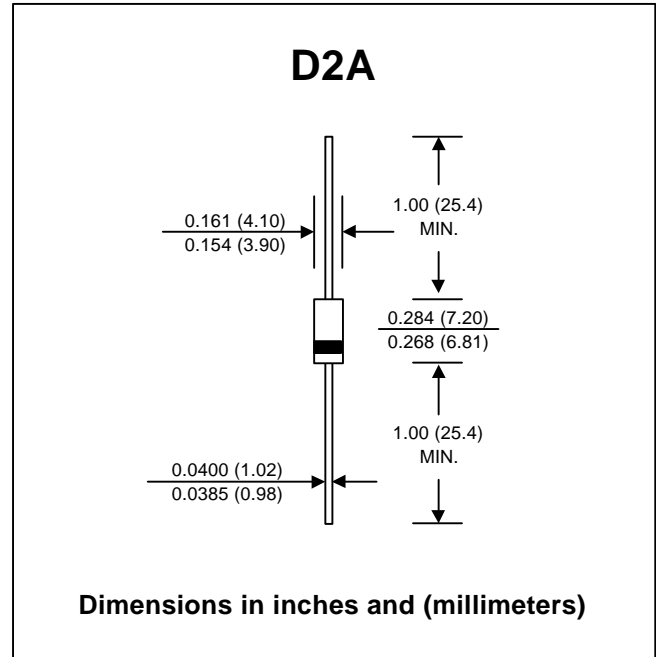
## FEATURES :

- \* 600W surge capability at 1ms
- \* Excellent clamping capability
- \* Low zener impedance
- \* Fast response time : typically less than 1.0 ps from 0 volt to V<sub>BR(min.)</sub>
- \* Typical I<sub>R</sub> less than 1μA above 10V

## MECHANICAL DATA

- \* Case : D2A Molded plastic
- \* Epoxy : UL94V-O rate flame retardant
- \* Lead : Axial lead solderable per MIL-STD-202, method 208 guaranteed
- \* Polarity : Color band denotes cathode end except Bipolar.
- \* Mounting position : Any
- \* Weight : 0.645 gram

# TRANSIENT VOLTAGE SUPPRESSOR



Rating at 25 °C ambient temperature unless otherwise specified.

Rating	Symbol	Value	Unit
Peak Power Dissipation at Ta = 25 °C, Tp=1ms (Note1)	P <sub>PK</sub>	Minimum 600	W
Steady State Power Dissipation at T <sub>L</sub> = 75 °C Lead Lengths 0.375", (9.5mm) (Note 2)	P <sub>D</sub>	5.0	W
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load (JEDEC Method) (Note 3)	I <sub>FSM</sub>	100	A
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	- 65 to + 175	°C

## Notes :

- (1) Non-repetitive Current pulse, per Fig. 5 and derated above Ta = 25 °C per Fig. 1
- (2) Mounted on Copper Leaf area of 1.57 in<sup>2</sup> (40mm<sup>2</sup>).
- (3) 8.3 ms single half sine-wave, duty cycle = 4 pulses per minutes maximum.



## ELECTRICAL CHARACTERISTICS

Rating at 25°C ambient temperature unless otherwise specified

Type No.		Breakdown Voltage @ $I_t$ ( Note 1 )			Working Peak Reverse Voltage	Maximum Reverse Leakage @ $V_{RWM}$	Maximum Reverse Current	Maximum Clamping Voltage @ $I_{RSM}$	Maximum Temperature Co-efficient of $V_{BR}$ (% /°C)
		$V_{BR}$ (V)		$I_t$					
Uni-directional	Bi-directional	Min.	Max.	(mA)	$V_{RWM}$ (V)	$I_R$ ( $\mu$ A)	$I_{RSM}$ (A)	$V_{RSM}$ (V)	
P6KE6.8A	P6KE6.8CA	6.45	7.14	10	5.80	1000	57.0	10.5	0.057
P6KE7.5A	P6KE7.5CA	7.13	7.88	10	6.40	500	53.0	11.3	0.061
P6KE8.2A	P6KE8.2CA	7.79	8.61	10	7.02	200	50.0	12.1	0.065
P6KE9.1A	P6KE9.1CA	8.65	9.55	1.0	7.78	150	45.0	13.4	0.068
P6KE10A	P6KE10CA	9.50	10.5	1.0	8.55	150	41.0	14.5	0.073
P6KE11A	P6KE11CA	10.5	11.6	1.0	9.40	150	38.0	15.6	0.075
P6KE12A	P6KE12CA	11.4	12.6	1.0	10.2	5.0	36.0	16.7	0.078
P6KE13A	P6KE13CA	12.4	13.7	1.0	11.1	5.0	33.0	18.2	0.081
P6KE15A	P6KE15CA	14.3	15.8	1.0	12.8	5.0	28.0	21.2	0.084
P6KE16A	P6KE16CA	15.2	16.8	1.0	13.6	5.0	27.0	22.5	0.086
P6KE18A	P6KE18CA	17.1	18.9	1.0	15.3	5.0	24.0	25.2	0.088
P6KE20A	P6KE20CA	19.0	21.0	1.0	17.1	5.0	22.0	27.7	0.090
P6KE22A	P6KE22CA	20.9	23.1	1.0	18.8	5.0	20.0	30.6	0.092
P6KE24A	P6KE24CA	22.8	25.2	1.0	20.5	5.0	18.0	33.2	0.094
P6KE27A	P6KE27CA	25.7	28.4	1.0	23.1	5.0	16.0	37.5	0.096
P6KE30A	P6KE30CA	28.5	31.5	1.0	25.6	5.0	14.4	41.4	0.097
P6KE33A	P6KE33CA	31.4	34.7	1.0	28.2	5.0	13.2	45.7	0.098
P6KE36A	P6KE36CA	34.2	37.8	1.0	30.8	5.0	12.0	49.9	0.099
P6KE39A	P6KE39CA	37.1	41.0	1.0	33.3	5.0	11.2	53.9	0.100
P6KE43A	P6KE43CA	40.9	45.2	1.0	36.8	5.0	10.1	59.3	0.101
P6KE47A	P6KE47CA	44.7	49.4	1.0	40.2	5.0	9.3	64.8	0.101
P6KE51A	P6KE51CA	48.5	53.6	1.0	43.6	5.0	8.6	70.1	0.102
P6KE56A	P6KE56CA	53.2	58.8	1.0	47.8	5.0	7.8	77.0	0.103
P6KE62A	P6KE62CA	58.9	65.1	1.0	53.0	5.0	7.1	85.0	0.104
P6KE68A	P6KE68CA	64.6	71.4	1.0	58.1	5.0	6.5	92.0	0.104
P6KE75A	P6KE75CA	71.3	78.8	1.0	64.1	5.0	5.8	103	0.105
P6KE82A	P6KE82CA	77.9	86.1	1.0	70.1	5.0	5.3	113	0.105
P6KE91A	P6KE91CA	86.5	95.5	1.0	77.8	5.0	4.8	125	0.106
P6KE100A	P6KE100CA	95.0	105	1.0	85.5	5.0	4.4	137	0.106
P6KE110A	P6KE110CA	105	116	1.0	94.0	5.0	4.0	152	0.107
P6KE120A	P6KE120CA	114	126	1.0	102	5.0	3.6	165	0.107
P6KE130A	P6KE130CA	124	137	1.0	111	5.0	3.3	179	0.107
P6KE150A	P6KE150CA	143	158	1.0	128	5.0	2.9	207	0.108
P6KE160A	P6KE160CA	152	168	1.0	136	5.0	2.7	219	0.108
P6KE170A	P6KE170CA	162	179	1.0	145	5.0	2.6	234	0.108
P6KE180A	P6KE180CA	171	189	1.0	154	5.0	2.4	246	0.108
P6KE200A	P6KE200CA	190	210	1.0	171	5.0	2.2	274	0.108
P6KE220A	P6KE220CA	209	231	1.0	185	5.0	1.83	328	0.108
P6KE250A	P6KE250CA	237	263	1.0	214	5.0	1.75	344	0.110
P6KE300A	P6KE300CA	285	315	1.0	256	5.0	1.45	414	0.110
P6KE320A	P6KE320CA	303	337	1.0	272	5.0	1.35	445	0.110
P6KE350A	P6KE350CA	332	368	1.0	300	5.0	1.25	482	0.110
P6KE400A	P6KE400CA	380	420	1.0	342	5.0	1.10	548	0.110
P6KE440A	P6KE440CA	418	462	1.0	376	5.0	1.00	602	0.110

### Notes:

- ( 1 )  $V_{BR}$  measured after  $I_t$  applied for 300  $\mu$ s.,  $I_t$  = square wave pulse or equivalent.
- ( 2 )  $V_F$  = 3.5  $V_{max}$ ,  $I_F$  = 50 Amps. ( 6.8 Volts thru 91 Volts )  
 $V_F$  = 5.0  $V_{max}$ ,  $I_F$  = 50 Amps. ( 100 Volts thru 440 Volts ) per 1/2 square or equivalent sine wave.  
 $PW$  = 8.3 ms, duty cycle = 4 pulses per minute maximum.
- ( 3 ) For Bipolar types moving  $V_r$  of 10 Volts and under, the  $I_R$  limit is doubled.
- ( 4 ) "6KE" will be omitted in marking on the diode.

## RATING AND CHARACTERISTIC CURVES ( P6KE SERIES )

FIG.1 - PULSE DERATING CURVE

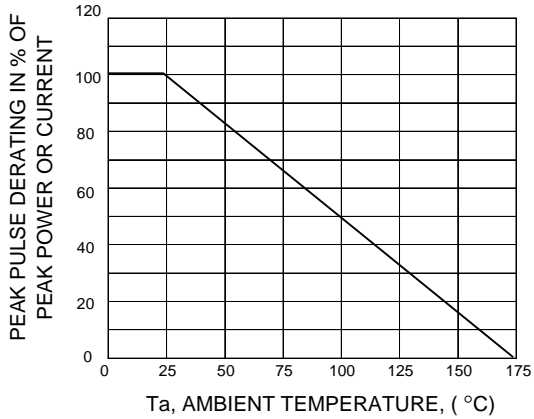


FIG.2 - MAXIMUM NON-REPETITIVE SURGE CURRENT

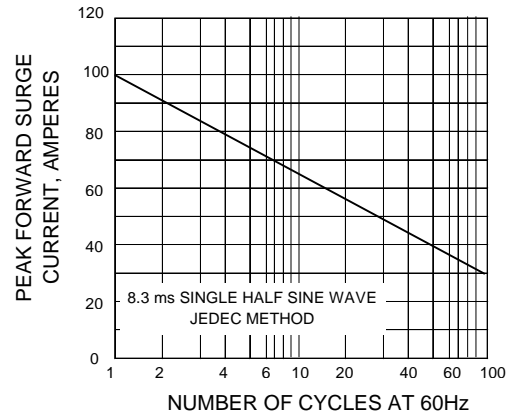


FIG.3 - STEADY STATE POWER DERATING

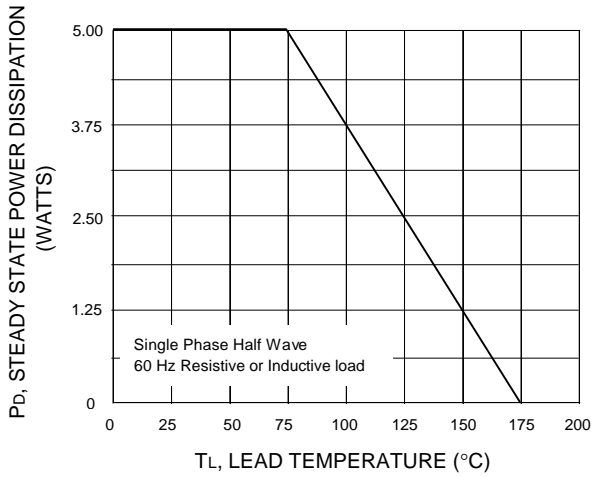


FIG.4 - PULSE RATING CURVE

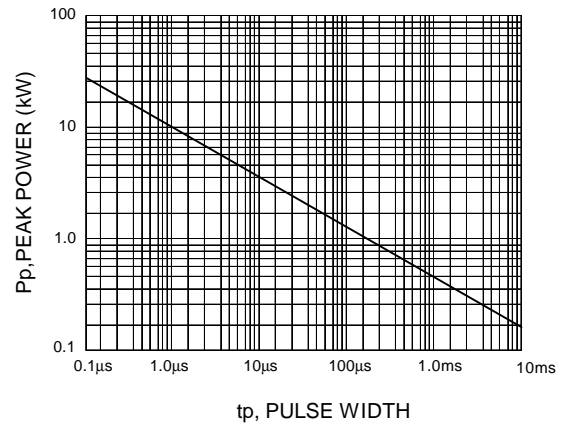


FIG.5 - PULSE WAVEFORM

