600w Transient Voltage Suppressor

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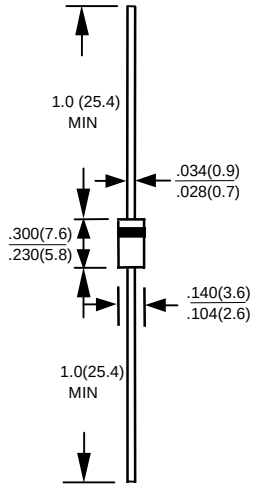
P6KE Series

Features

- plastic package has underwriters laboratory flammability classification 94v-0
- 600w surge capability at 1ms
- Excellent clamping capability
- Low zener impedance
- Fast response time:typically less than 1.0 ps from 0 volts to bv min
- High temperature soldering guaranteed:260 ./10s /.375.(9.5mm) lead length/5lbs., (2.3kg) tension
- Typical T_R less than 1μa above 10V

DO15



Didemsions in inches and (mm)

Mechanical Data

- Case: Molded plastic
- Terminals: Axial leads solderable per MIL-STD-202, Method 208
- Polarity :color band denoted cathode except
- Weight: 0.014 oz., 0.4 g

Maximum Ratings and Electrical Characteristics

@ TA = 25 °C unless otherwise specified

RATINGS	SYMBOL	VALUE	UNITS
PEAK POWER DISSIPATION AT TA=25 °C, TP=1ms(NOTE 1)	P_{PK}	600	WATTS
STEADY STATE POWER DISSIPATION AT TL=75 °C LEAD LENGTHS .375"(9.5mm) (NOTE 2)	PD	5.0	WATTS
PEAK FORWARD SURGE CURRENT, 8.3ms SINGLE HALF SINE-WAVE SUPERIMPOSED ON RATED LOAD (JEDEC METHOD) (NOTE 3)	I_{FSM}	100	Amps
OPERATING AND STORAGE TEMPERATURE RANGE	T_J, T_{STG}	- 55 TO + 175	°C

NOTE：

1. NON-REPETITIVE CURRENT PULSE, PER FIG.3 AND DERATED ABOVE TA=25 .PER FIG 2.
2. MOUNTED ON COPPER LEAT AREA OF 1.57 IN2 (40mm2)
3. 8.3ms SINGLE HALF SINE-WAVE, DUTY CYCLE=4 PULSES PER MINUTES MAXIMUM
4. FOR BIDIRECTIONAL USE C SUFFIX FOR 10% TOLERANCE, CA SUFFIX FOR 5% TOLERANCE

DEVICE	BREAKDOWN VOLTAGE B_{BR}(VOLTS) MIN	BREAKDOWN VOLTAGE B_{BR}(VOLTS) MAX	@IT (mA)	WORKING PEAK REVERSE VOLTAGE V_{RWM}(VOLTS)	MAXIMUM REVERSE LEAKAGE AT V_{RWM} IR(μA)	MAXIMUM REVERSE CURRENT I_{RSM} (AMPS)	MAX CLAMPING VOLTAGE V_{RWM} (VOLTS)	MAXIMUM TEMPERATURE COEFFICIENT OF V_{BR} (%C)
P6KE6.8(C)	6.12	7.48	10	5.50	1000	56	10.8	0.057
P6KE6.8(C)A	6.45	7.14	10	5.80	1000	57	10.5	0.057
P6KE7.5(C)	6.75	8.25	10	6.05	500	51	11.7	0.061
P6KE7.5(C)A	7.13	7.88	10	6.40	500	53	11.3	0.061
P6KE8.2(C)	7.38	9.02	10	6.63	200	48	12.5	0.065
P6KE8.2(C)A	7.79	8.61	10	7.02	200	50	12.1	0.065
P6KE9.1(C)	8.19	10.0	1.0	7.37	50	44	13.8	0.068
P6KE9.1(C)A	8.65	9.55	1.0	7.78	50	45	13.4	0.068
P6KE10(C)	9.00	11.0	1.0	8.10	10	40	15.0	0.073
P6KE10(C)A	9.50	10.5	1.0	8.55	10	41	14.5	0.073
P6KE11(C)	9.90	12.1	1.0	8.92	5.0	37	16.2	0.075
P6KE11(C)A	10.5	11.6	1.0	9.40	5.0	38	15.6	0.075
P6KE12(C)	10.8	13.2	1.0	9.72	5.0	35	17.3	0.078
P6KE12(C)A	11.4	12.6	1.0	10.2	5.0	36	16.7	0.078
P6KE13(C)	11.7	14.3	1.0	10.5	5.0	32	19.0	0.081
P6KE13(C)A	12.4	13.7	1.0	11.1	5.0	33	18.2	0.081
P6KE15(C)	13.5	16.5	1.0	12.1	5.0	27	22.0	0.084
P6KE15(C)A	14.3	15.8	1.0	12.8	5.0	28	21.2	0.084
P6KE16(C)	14.4	17.6	1.0	12.9	5.0	26	23.5	0.086
P6KE16(C)A	15.2	16.8	1.0	13.6	5.0	27	22.5	0.086
P6KE18(C)	16.2	19.8	1.0	14.5	5.0	23	26.5	0.088
P6KE18(C)A	17.1	18.9	1.0	15.3	5.0	24	25.2	0.088
P6KE20(C)	18.0	22.0	1.0	16.2	5.0	21	29.1	0.090
P6KE20(C)A	19.0	21.0	1.0	17.1	5.0	22	27.7	0.090
P6KE22(C)	19.8	24.2	1.0	17.8	5.0	19	31.9	0.092
P6KE22(C)A	20.9	23.1	1.0	18.8	5.0	20	30.6	0.092
P6KE24(C)	21.6	26.4	1.0	19.4	5.0	17	34.7	0.094
P6KE24(C)A	22.8	25.2	1.0	20.5	5.0	18	33.2	0.094
P6KE27(C)	24.3	29.7	1.0	21.8	5.0	15	39.1	0.096
P6KE27(C)A	25.7	28.4	1.0	23.1	5.0	16	37.5	0.096
P6KE30(C)	27.0	33.0	1.0	24.3	5.0	14	43.5	0.097
P6KE30(C)A	28.5	31.5	1.0	25.6	5.0	14.4	41.4	0.097
P6KE33(C)	29.7	36.3	1.0	26.8	5.0	12.6	47.7	0.098
P6KE33(C)A	31.4	34.7	1.0	28.2	5.0	13.2	45.7	0.098
P6KE36(C)	32.4	39.6	1.0	29.1	5.0	11.6	52.0	0.099
P6KE36(C)A	34.2	37.8	1.0	30.8	5.0	12.0	49.9	0.099
P6KE39(C)	35.1	42.9	1.0	31.6	5.0	10.6	56.4	0.100
P6KE39(C)A	37.1	41.0	1.0	33.3	5.0	11.2	53.9	0.100
P6KE43(C)	38.7	47.3	1.0	34.8	5.0	9.6	61.9	0.101
P6KE43(C)A	40.9	45.2	1.0	36.8	5.0	10.1	59.3	0.101
P6KE47(C)	42.3	51.7	1.0	38.1	5.0	8.9	67.8	0.101
P6KE47(C)A	44.7	49.4	1.0	40.2	5.0	9.3	64.8	0.101
P6KE51(C)	45.9	56.1	1.0	41.3	5.0	8.2	73.5	0.102
P6KE51(C)A	48.5	53.6	1.0	43.6	5.0	8.6	70.1	0.102
P6KE56(C)	50.4	61.6	1.0	45.4	5.0	7.4	80.5	0.103
P6KE56(C)A	53.2	58.8	1.0	47.8	5.0	7.8	77.0	0.103
P6KE62(C)	55.8	68.2	1.0	50.2	5.0	6.8	89.0	0.104
P6KE62(C)A	58.9	65.1	1.0	53.0	5.0	7.1	85.0	0.104
P6KE68(C)	61.2	74.8	1.0	55.1	5.0	6.1	98.0	0.104
P6KE68(C)A	64.6	71.4	1.0	58.1	5.0	6.5	92.0	01.04
P6KE75(C)	67.5	82.5	1.0	60.7	5.0	5.5	108.0	0.105
P6KE75(C)A	71.3	78.8	1.0	64.1	5.0	5.8	103.0	0.105
P6KE82(C)	73.8	90.2	1.0	66.4	5.0	5.1	118.0	0.105
P6KE82(C)A	77.9	86.1	1.0	70.1	5.0	5.3	113.0	0.105
P6KE91(C)	81.9	100.0	1.0	73.7	5.0	4.5	131.8	0.106
P6KE91(C)A	86.5	95.50	1.0	77.8	5.0	4.8	125.0	0.106
P6KE100(C)	90.0	110.0	1.0	81.0	5.0	4.2	144.0.	0.106
P6KE100(C)A	95.0	105.0	1.0	85.5	5.0	4.4	137.0	0.106

DEVICE	BREAKDOWN VOLTAGE B_{BR}(VOLTS) MIN	BREAKDOWN VOLTAGE B_{BR}(VOLTS) MAX	@IT (mA)	WORKING PEAK REVERSE VOLTAGE V_{RWM}(VOLTS)	MAXIMUM REVERSE LEAKAGE AT V_{RWM} IR(μA)	MAXIMUM REVERSE CURRENT I_{RSM} (AMPS)	MAX CLAMPING VOLTAGE V_{RWM} (VOLTS)	MAXIMUM TEMPERATURE COEFFICIENT OF V_{RR} (%C)
P6KE110(C)	99.0	121.0	1.0	89.2	5.0	3.8	158.0	0.107
P6KE110(C)A	105.0	116.0	1.0	94.0	5.0	4.0	152.0	0.107
P6KE120(C)	108.0	132.0	1.0	97.2	5.0	3.5	173.0	0.107
P6KE120(C)A	114.0	126.0	1.0	102.0	5.0	3.6	165.0	0.107
P6KE130(C)	117.0	143.0	1.0	105.0	5.0	3.2	187.0	0.107
P6KE130(C)A	124.0	137.0	1.0	111.0	5.0	3.3	179.0	0.107
P6KE150(C)	135.0	165.0	1.0	121.0	5.0	2.8	215.0	0.108
P6KE150(C)A	143.0	158.0	1.0	128.0	5.0	2.9	207.0	0.108
P6KE160(C)	144.0	176.0	1.0	130.0	5.0	2.6	230.0	0.108
P6KE160(C)A	152.0	168.0	1.0	136.0	5.0	2.7	219.0	0.108
P6KE170(C)	153.0	187.0	1.0	138.0	5.0	2.5	244.0	0.108
P6KE170(C)A	162.0	179.0	1.0	145.0	5.0	2.6	234.0	0.108
P6KE180(C)	162.0	198.0	1.0	146.0	5.0	2.3	258.0	0.108
P6KE180(C)A	171.0	189.0	1.0	154.0	5.0	2.4	246.0	0.108
P6KE200(C)	180.0	220.0	1.0	162.0	5.0	2.1	287.0	0.108
P6KE200(C)A	190.0	210.0	1.0	171.0	5.0	2.2	274.0	0.108
P6KE220(C)	198.0	242.0	1.0	175.0	5.0	1.75	344.0	0.108
P6KE220(C)A	209.0	231.0	1.0	185.0	5.0	1.83	328.0	0.108
P6KE250(C)	225.0	275.0	1.0	202.0	5.0	1.67	360.0	0.110
P6KE250(C)A	237.0	263.0	1.0	214.0	5.0	1.75	344.0	0.110
P6KE300(C)	270.0	330.0	1.0	243.0	5.0	1.4	430.0	0.110
P6KE300(C)A	285.0	315.0	1.0	256.0	5.0	1.45	414.0	0.110
P6KE350(C)	315.0	385.0	1.0	284.0	5.0	1.2	504.0	0.110
P6KE350(C)A	332.0	368.0	1.0	300.0	5.0	1.25	482.0	0.110
P6KE400(C)	360.0	440.0	1.0	324.0	5.0	1.05	574.0	0.110
P6KE400(C)A	380.0	420.0	1.0	342.0	5.0	1.1	548.0	0.110
P6KE440(C)	396.0	484.0	1.0	356.0	5.0	0.95	630.0	0.113
P6KE440(C)A	418.0	462.0	1.0	376.0	5.0	1.00	600.0	0.113

NOTES：

1. V_{BR} MEASURED AFTER I_T APPLIED FOR 300 μS,I_T=SQUARE WAVE PULSE OR EQUIVALENT
2. SURGE CURRENT WAVEFORM PER FIGURE 3 AND DERATED PER FIGUE 2.
3. V_F=3.5V AT I_F=50A (P6KE6.8 THRU P6KE91A)
   V_F=5.0V AT I_F=50A (P6KE100 THRU P6KE440A) ON 1/2 SQUARE OR EQUIVALENT SINE WAVE.
   PW=8.3ms, DUTY CYCLE=4 PULSES PER MINUTE MXIMUM
4. FOR BIPOLAR TYPES HAVING V_{RWM} OF 10 VOLTS AND UNDER, THE I_R LIMIT IS DOUBLED

FIG. 1 - PEAK PULSE POWER RATING CURVE

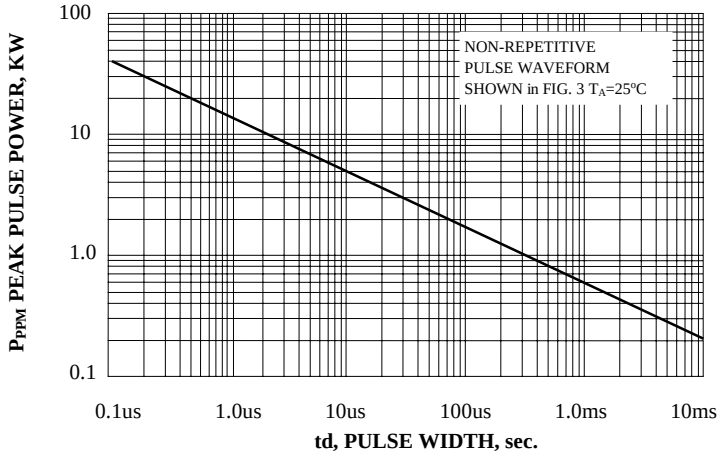


FIG. 2 - PULSE DERATING CURVE

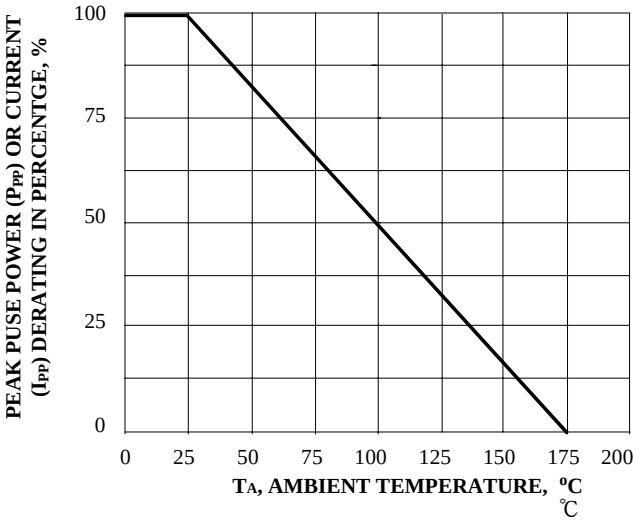


FIG.3 - PULSE WAVEFORM

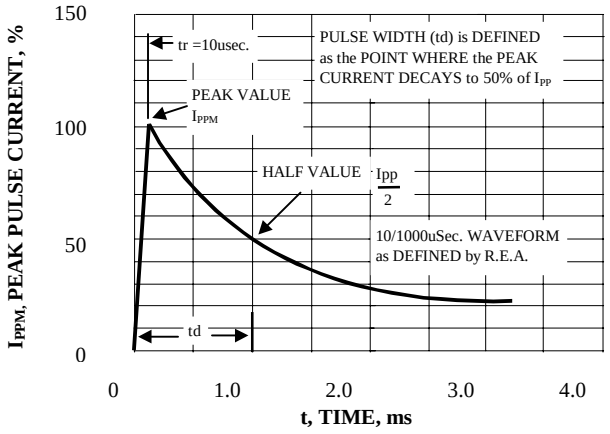


FIG. 4 - TYPICAL JUNCTION CAPACITANCE UNIDIRECTIONAL

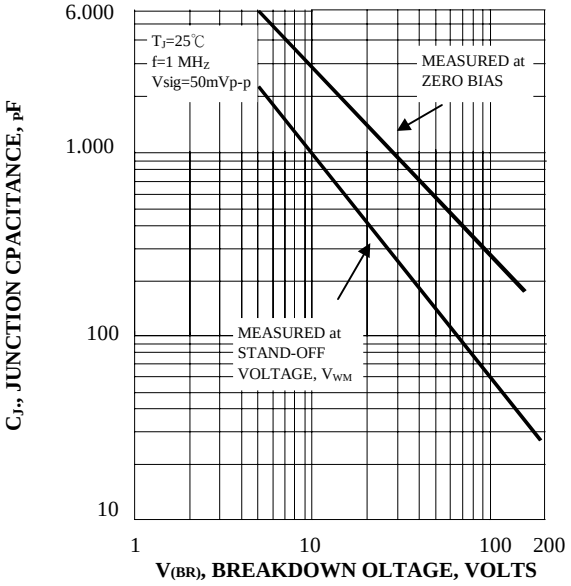


FIG. 5 - STEADY STATE POWER DERATING CURVE

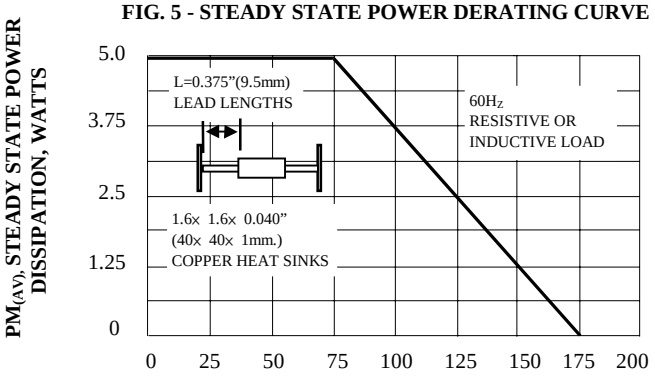


FIG. 6 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT UNIDIRECTIONAL

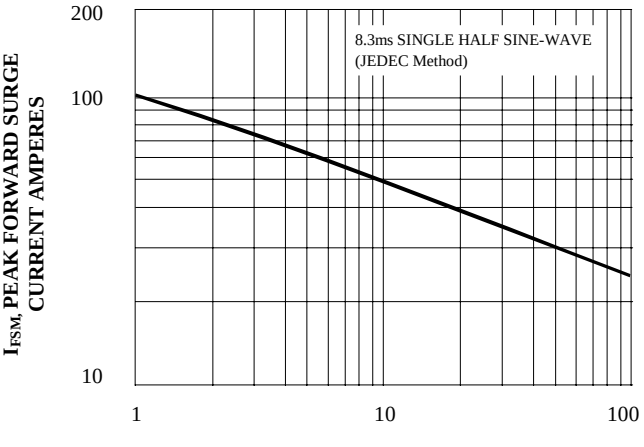


FIG. 7 - TYPICAL REVERSE LEAKAGE CHARACTERISTICS