SIRECT
ELECTRONIC

P4KE6.8(C)-LF THRU P4KE540(C)A-LF

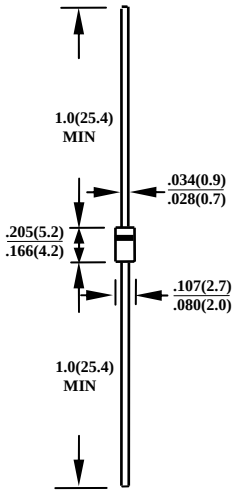
400W TRANSIENT VOLTAGE SUPPRESSOR

FEATURES

- PLASTIC PACKAGE HAS UNDERWRITERS LABORATORY FLAMMABILITY CLASSIFICATION 94V-0
- 400W 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
- TYPICAL IR LESS THAN 1μA ABOVE 10V
- HIGH TEMPERATURE SOLDERING GUARANTEED:260℃/10S /.375″ (9.5mm) LEAD LENGTH/5LBS., (2.3KG) TENSION
- LEAD FREE

MECHANICAL DATA

- CASE：MOLDED PLASTIC
- TERMINALS：AXIAL LEADS, SOLDERABLE PER MIL-STD-202, METHOD 208
- POLARITY：COLOR BAND DENOTED CATHODE EXCEPT BIPOLAR
- WEIGHT：0.34 GRAMS



CASE：DO41
DIMENSIONS IN INCHES AND (MILLIMETERS)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS
RATINGS AT 25°C AMBIENT TEMPERATURE UNLESS OTHERWISE SPECIFIED

RATINGS	SYMBOL	VALUE	UNITS
PEAK POWER DISSIPATION AT TA=25℃, TP=1ms(NOTE1)	P_{PK}	MINIMUM 400	WATTS
PEAK PULSE CURRENT WITH A 10/1000us WAVEFORM(NOTE 1)	I_{PPM}	SEE NEXT TABLE	A
STEADY STATE POWER DISSIPATION AT T_L=75℃, LEAD LENGTHS 0.375” (9.5mm) (NOTE2)	$P_{M(AV)}$	1.0	WATTS
PEAK FORWARD SURGE CURRENT, 8.3ms SINGLE HALF SINE-WAVE SUPERIMPOSED ON RATED LOAD (JEDEC METHOD) (NOTE 3)	I_{FSM}	40.0	Amps
TYPICAL THERMAL RESISTANCE JUNCTUION-TO-AMBIENT	$R_{\theta JA}$	100	℃/W
OPERATING AND STORAGE TEMPERATURE RANGE	T_J,T_{STG}	- 55 TO + 175	℃

NOTE： 1. NON-REPETITIVE CURRENT PULSE, PER FIG.3 AND DERATED ABOVE TA=25℃PER FIG 2.
2. MOUNTED ON COPPER PAD AREA OF 1.6x1.6” (40×40mm) PER FIG. 5
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 COEFICIENT OF V_{BR} (%C)
P4KE6.8(C)-LF	6.12	7.48	10	5.50	1000	38	10.8	0.057
P4KE6.8(C)A-LF	6.45	7.14	10	5.80	1000	40	10.5	0.057
P4KE7.5(C)-LF	6.75	8.25	10	6.05	500	36	11.7	0.061
P4KE7.5(C)A-LF	7.13	7.88	10	6.40	500	37	11.3	0.061
P4KE8.2(C)-LF	7.38	9.02	10	6.63	200	33	12.5	0.065
P4KE8.2(C)A-LF	7.79	8.61	10	7.02	200	35	12.1	0.065
P4KE9.1(C)-LF	8.19	10.0	1.0	7.37	50	30	13.8	0.068
P4KE9.1(C)A-LF	8.65	9.55	1.0	7.78	50	31	13.4	0.068
P4KE10(C)-LF	9.00	11.0	1.0	8.10	10	28	15.0	0.073
P4KE10(C)A-LF	9.50	10.5	1.0	8.55	10	29	14.5	0.073
P4KE11(C)-LF	9.90	12.1	1.0	8.92	5.0	26	16.2	0.075
P4KE11(C)A-LF	10.5	11.6	1.0	9.40	5.0	27	15.6	0.076
P4KE12(C)-LF	10.8	13.2	1.0	9.72	5.0	24	17.3	0.078
P4KE12(C)A-LF	11.4	12.6	1.0	10.2	5.0	25	16.7	0.078
P4KE13(C)-LF	11.7	14.3	1.0	10.5	5.0	22	19.0	0.081
P4KE13(C)A-LF	12.4	13.7	1.0	11.1	5.0	23	18.2	0.081
P4KE15(C)-LF	13.5	16.5	1.0	12.1	5.0	19	22.0	0.084
P4KE15(C)A-LF	14.3	15.8	1.0	12.8	5.0	20	21.2	0.084
P4KE16(C)-LF	14.4	17.6	1.0	12.9	5.0	18	23.5	0.086
P4KE16(C)A-LF	15.2	16.8	1.0	13.6	5.0	19	22.5	0.086
P4KE18(C)-LF	16.2	19.8	1.0	14.5	5.0	16	26.5	0.088
P4KE18(C)A-LF	17.1	18.9	1.0	15.3	5.0	17	25.5	0.088
P4KE20(C)-LF	18.0	22.0	1.0	16.2	5.0	14	29.1	0.090
P4KE20(C)A-LF	19.0	21.0	1.0	17.1	5.0	15	27.7	0.090
P4KE22(C)-LF	19.8	24.2	1.0	17.8	5.0	13	31.9	0.092
P4KE22(C)A-LF	20.9	23.1	1.0	18.8	5.0	14	30.6	0.092
P4KE24(C)-LF	21.6	26.4	1.0	19.4	5.0	12	34.7	0.094
P4KE24(C)A-LF	22.8	25.2	1.0	20.5	5.0	13	33.2	0.094
P4KE27(C)-LF	24.3	29.7	1.0	21.8	5.0	11	39.1	0.096
P4KE27(C)A-LF	25.7	28.4	1.0	23.1	5.0	11.2	37.5	0.096
P4KE30(C)-LF	27.0	33.0	1.0	24.3	5.0	10	43.5	0.097
P4KE30(C)A-LF	28.5	31.5	1.0	25.6	5.0	10	41.4	0.097
P4KE33(C)-LF	29.7	36.3	1.0	26.8	5.0	9	47.7	0.098
P4KE33(C)A-LF	31.4	34.7	1.0	28.2	5.0	9	45.7	0.098
P4KE36(C)-LF	32.4	39.6	1.0	29.1	5.0	8	52.0	0.099
P4KE36(C)A-LF	34.2	37.8	1.0	30.8	5.0	8.4	49.9	0.099
P4KE39(C)-LF	35.1	42.9	1.0	31.6	5.0	7.4	56.4	0.100
P4KE39(C)A-LF	37.1	41.0	1.0	33.3	5.0	7.8	53.9	0.100
P4KE43(C)-LF	38.7	47.3	1.0	34.8	5.0	6.8	61.9	0.101
P4KE43(C)A-LF	40.9	45.2	1.0	36.8	5.0	7.1	59.3	0.101
P4KE47(C)-LF	42.3	51.7	1.0	38.1	5.0	6.2	67.8	0.101
P4KE47(C)A-LF	44.7	49.4	1.0	40.2	5.0	6.5	64.8	0.101
P4KE51(C)-LF	45.9	56.1	1.0	41.3	5.0	5.7	73.5	0.102
P4KE51(C)A-LF	48.5	53.6	1.0	43.6	5.0	6.0	70.1	0.102
P4KE56(C)-LF	50.4	61.6	1.0	45.4	5.0	5.2	80.5	0.103
P4KE56(C)A-LF	53.2	58.8	1.0	47.8	5.0	5.5	77.0	0.103
P4KE62(C)-LF	55.8	68.2	1.0	50.2	5.0	4.7	89.0	0.104
P4KE62(C)A-LF	58.9	65.1	1.0	53.0	5.0	5.0	85.0	0.104
P4KE68(C)-LF	61.2	74.8	1.0	55.1	5.0	4.3	98.0	0.104
P4KE68(C)A-LF	64.6	71.4	1.0	58.1	5.0	4.6	92.0	0.104
P4KE75(C)-LF	67.5	82.5	1.0	60.7	5.0	3.9	108.0	0.105
P4KE75(C)A-LF	71.3	78.8	1.0	64.1	5.0	4.1	103.0	0.105
P4KE82(C)-LF	73.8	90.2	1.0	66.4	5.0	3.6	118.0	0.105
P4KE82(C)A-LF	77.9	86.1	1.0	70.1	5.0	3.7	113.0	0.105
P4KE91(C)-LF	81.9	100.0	1.0	73.7	5.0	3.2	131.8	0.106
P4KE91(C)A-LF	86.5	95.50	1.0	77.8	5.0	3.4	125.0	0.106
P4KE100(C)-LF	90.0	110.0	1.0	81.0	5.0	2.9	144.0	0.106
P4KE100(C)A-LF	95.0	105.0	1.0	85.5	5.0	3.1	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 COEFICIENT OF V_{RR} (%C)
P4KE110(C)-LF	99.0	121.0	1.0	89.2	5.0	2.7	158.0	0.107
P4KE110(C)A-LF	105.0	116.0	1.0	94.0	5.0	2.8	152.0	0.107
P4KE120(C)-LF	108.0	132.0	1.0	97.2	5.0	2.4	173.0	0.107
P4KE120(C)A-LF	114.0	126.0	1.0	102.0	5.0	2.5	165.0	0.107
P4KE130(C)-LF	117.0	143.0	1.0	105.0	5.0	2.2	187.0	0.107
P4KE130(C)A-LF	124.0	137.0	1.0	111.0	5.0	2.3	179.0	0.107
P4KE150(C)-LF	135.0	165.0	1.0	121.0	5.0	2.0	215.0	0.108
P4KE150(C)A-LF	143.0	158.0	1.0	128.0	5.0	2.0	207.0	0.108
P4KE160(C)-LF	144.0	176.0	1.0	130.0	5.0	1.8	230.0	0.108
P4KE160(C)A-LF	152.0	168.0	1.0	136.0	5.0	1.9	219.0	0.108
P4KE170(C)-LF	153.0	187.0	1.0	138.0	5.0	1.7	244.0	0.108
P4KE170(C)A-LF	162.0	179.0	1.0	145.0	5.0	1.8	234.0	0.108
P4KE180(C)-LF	162.0	198.0	1.0	146.0	5.0	1.6	258.0	0.108
P4KE180(C)A-LF	171.0	189.0	1.0	154.0	5.0	1.7	246.0	0.108
P4KE200(C)-LF	180.0	220.0	1.0	162.0	5.0	1.5	287.0	0.108
P4KE200(C)A-LF	190.0	210.0	1.0	171.0	5.0	1.53	274.0	0.108
P4KE220(C)-LF	198.0	242.0	1.0	175.0	5.0	1.16	344.0	0.108
P4KE220(C)A-LF	209.0	231.0	1.0	185.0	5.0	1.22	328.0	0.108
P4KE250(C)-LF	225.0	275.0	1.0	202.0	5.0	1.11	360.0	0.110
P4KE250(C)A-LF	237.0	263.0	1.0	214.0	5.0	1.16	344.0	0.110
P4KE300(C)-LF	270.0	330.0	1.0	243.0	5.0	0.93	430.0	0.110
P4KE300(C)A-LF	285.0	315.0	1.0	256.0	5.0	0.97	414.0	0.110
P4KE350(C)-LF	315.0	385.0	1.0	284.0	5.0	0.79	504.0	0.110
P4KE350(C)A-LF	332.0	368.0	1.0	300.0	5.0	0.83	482.0	0.110
P4KE400(C)-LF	360.0	440.0	1.0	324.0	5.0	0.70	574.0	0.110
P4KE400(C)A-LF	380.0	420.0	1.0	342.0	5.0	0.73	548.0	0.110
P4KE440(C)-LF	396.0	484.0	1.0	356.0	5.0	0.64	630.0	0.110
P4KE440(C)A-LF	418.0	462.0	1.0	376.0	5.0	0.67	600.0	0.110
P4KE480(C)-LF	432.0	528.0	1.0	389.0	5.0	0.58	686.0	0.110
P4KE480(C)A-LF	456.0	504.0	1.0	408.0	5.0	0.61	658.0	0.110
P4KE510(C)-LF	459.0	561.0	1.0	413.0	5.0	0.55	729.0	0.110
P4KE510(C)A-LF	485.0	535.0	1.0	434.0	5.0	0.57	698.0	0.110
P4KE540(C)-LF	486.0	594.0	1.0	437.0	5.0	0.52	772.0	0.110
P4KE540(C)A-LF	513.0	567.0	1.0	459.0	5.0	0.54	740.0	0.110

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=25A (P4KE6.8(C) THRU P4KE200(C)A)
   V_F = 6.5V AT I_F=25A (P4KE220(C) THRU P4KE540(C)A) 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

RATINGS AND CHARACTERISTIC CURVES P4KE6.8(C)-LF THRU P4KE540(C)A-LF

FIG. 1 - PEAK PULSE POWER RATING CURVE

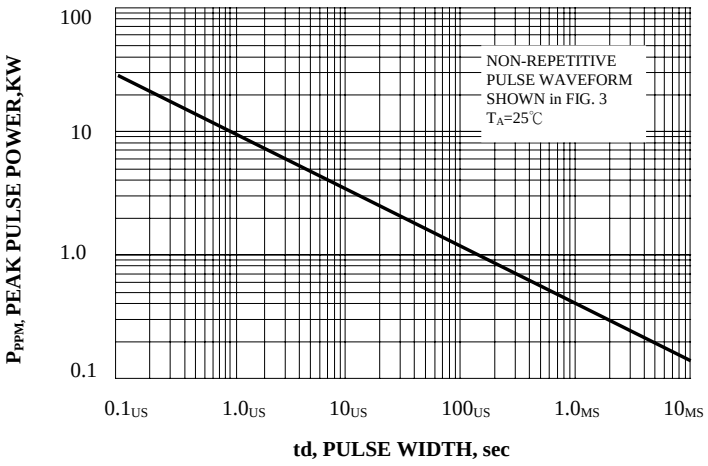


FIG. 2 - PULSE DERATING CURVE

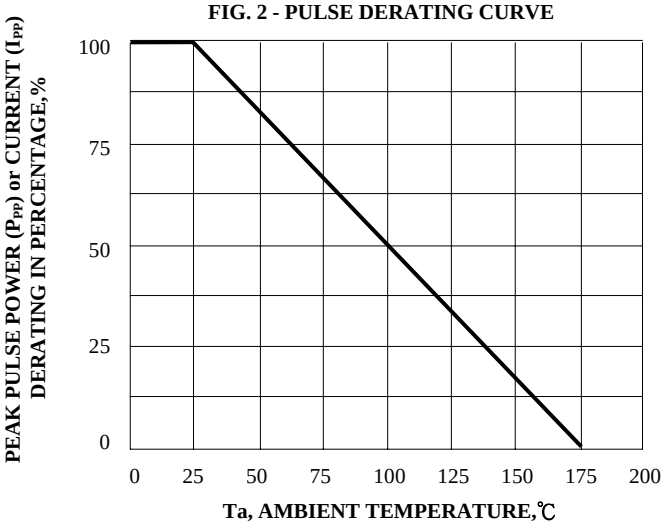


FIG. 3 - PULSE WAVEFORM

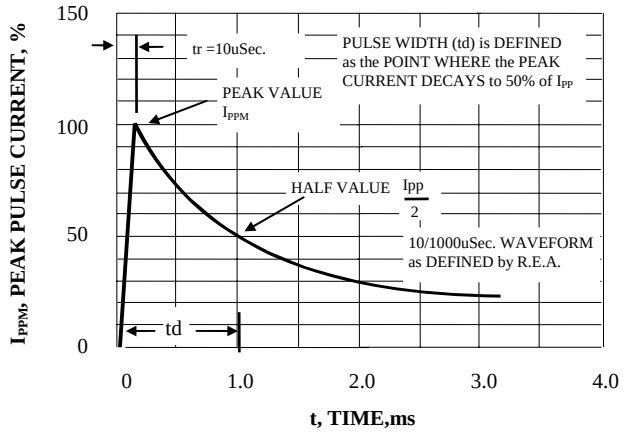


FIG. 4 - TYPICAL JUNCTION CAPACITANCE
UNIDIRECTIONAL

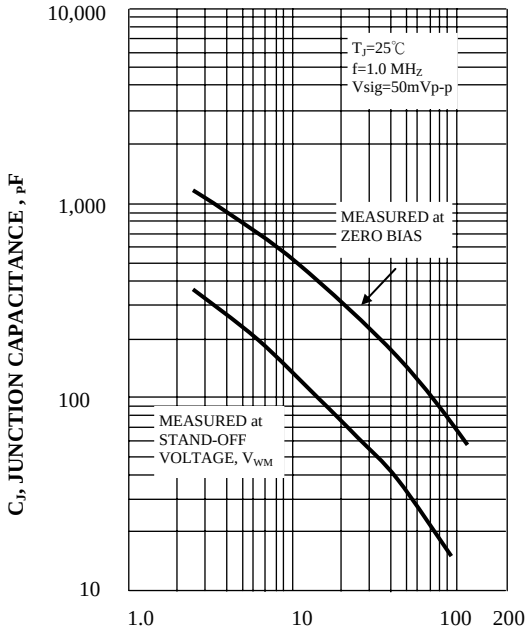


FIG. 5 – STEADY STATE POWER DERATING CURVE

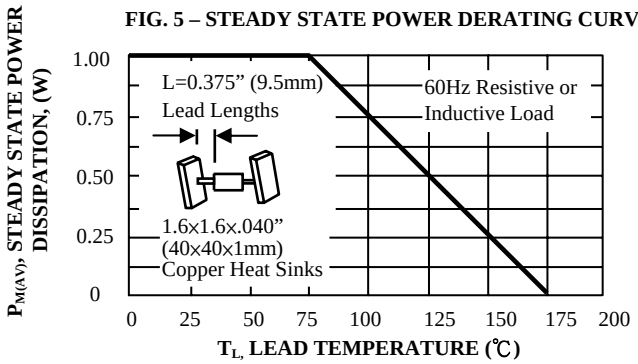


FIG. 6 - TYPICAL REVERSE LEAKAGE CHARACTERISTICS

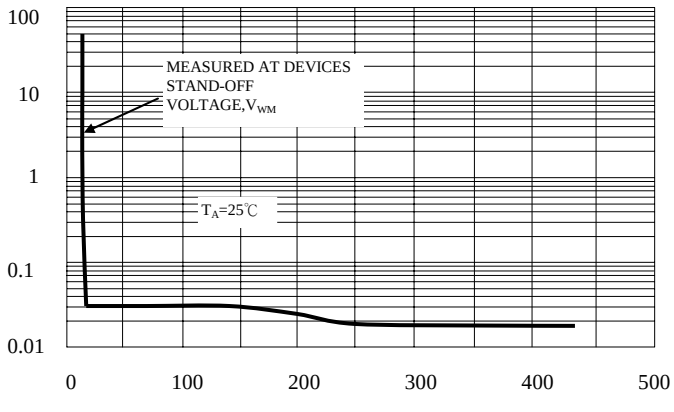


FIG. 7 - MAXIMUM NON-REPETITIVE PEAK FORWARD
SURGE CURRENT UNIDIRECTIONAL ONLY

