



PASSIVATED JUNCTION TRANSIENT VOLTAGE SUPPRESSOR

P6KE6.8 THRU P6KE440CA(GPP)

Breakdown Voltage 6.8 to 440 Volts

P6KE6.8J THRU P6KE440CAJ(OPEN JUNCTION)

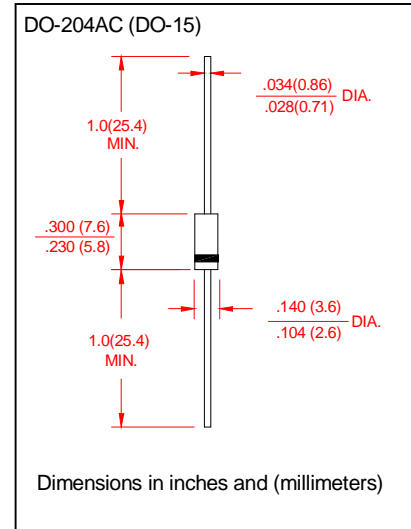
Peak Pulse Power 600 Watts

FEATURES

- Plastic package has Underwriters Laboratory Flammability Classification 94V-O
- Glass passivated or silastic guard junction (open junction)
- 600W peak pulse power capability with a 10/1000 μ s Waveform, repetition rate (duty cycle): 0.01%
- Excellent clamping capability
- Low incremental surge resistance
- Fast response time: typically less than 1.0ps from 0 Volts to $V_{(BR)}$ for unidirectional and 5.0ns for bidirectional types
- Typical I_D less than 1.0 μ A above 10V
- High temperature soldering guaranteed: 265°C/10 seconds, 0.375" (9.5mm) lead length, 51bs.(2.3kg) tension

MECHANICAL DATA

- Cass: JEDEC DO-204AC, molded plastic body over passivated junction
- Terminals: Axial leads, solderable per MIL-STD-750, Method 2026
- Polarity: Color bands denotes positive end (cathode) except for bidirectional types
- Mounting position: any
- Weight: 0.015 ounces, 0.4 gram



DEVICES FOR BIDIRECTIONAL APPLICATIONS

- For bidirectional use C or CA Suffix for types P6KE6.8 thru P6K440 (e.g. P6KE6.8C, P6KE440CA). Electrical Characteristics apply in both directions.
- Suffix A denotes $\pm 5\%$ tolerance device, No suffix A denotes $\pm 10\%$ tolerance device

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

- Ratings at 25°C ambient temperature unless otherwise specified

Ratings	Symbols	Value	Unit
Peak Pulse power dissipation with a 10/1000 μ s waveform(NOTE1,FIG.1)	PPPM	Minimum 400	Watts
Peak Pulse current with a 10/1000 μ s waveform (NOTE1,FIG.3)	IPPM	See Table 1	Watt
Steady Stage Power Dissipation at $T_L=75^\circ\text{C}$ Lead lengths 0.375"(9.5)(Note2)	$P_{M(AV)}$	5.0	Amps
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load (JEDEC Method) (Note3)	I_{FSM}	100.0	Amps
Maximum instantaneous forward voltage at 50.0A for unidirectional only (NOTE 4)	V_F	3.5/5.0	Volts
Operating Junction and Storage Temperature Range	T_J, T_{STG}	50 to +150	$^\circ\text{C}$

Notes:

1. Non-repetitive current pulse, per Fig.3 and derated above $T_A=25^\circ\text{C}$ per Fig.2
2. Mounted on copper pad area of 1.6 \times 1.6"(40 \times 40mm) per Fig 5.
3. Measured at 8.3ms single half sine-wave or equivalent square wave duty cycle = 4 pulses per minutes maximum.
4. $V_F=3.0$ Volts max. for devices of $V_{(BR)} \leq 200\text{V}$, and $V_F=5.0\text{V}$ for devices of $V_{(BR)} \geq 200\text{V}$



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Electrical Characteristic at (T_A =25°C unless otherwise noted)

Device Type	Breakdown Voltage at Test Current I _r			Stand-off Voltage V _{WM}	Maximum Reverse Leakage at V _{WM} I _D (μ A)	Maximum Peak Pulse Current I _{PPM} (A)	Maximum Clamping Voltage at I _{PPM} V _c (V)	Maximum Temperature Coefficient of V _{BR} X _{vz} (%°C)
	MIN	MAX						
	V _{BR} (V)		I _r (mA)					
	Note 1							
P6KE6.8/J	6.12	7.48	10	5.5	1000	55.6	10.8	0.067
P6KE6.8A/J	6.45	7.14	10	5.8	1000	57.1	10.5	0.057
P6KE7.5/J	6.75	8.25	10	6.05	500	51.3	11.7	0.061
P6KE7.5A/J	7.13	7.88	10	6.4	500	53.1	11.3	0.061
P6KE8.2/J	7.38	9.02	10	6.63	200	48.0	12.5	0.065
P6KE8.2A/J	7.79	8.61	10	7.02	200	49.6	12.1	0.065
P6KE9.1/J	8.19	10	1	7.37	50	43.6	13.8	0.068
P6KE9.1A/J	8.65	9.55	1	7.78	50	44.8	13.4	0.068
P6KE10/J	9	11	1	8.1	10	40.0	15	0.073
P6KE10A/J	9.5	10.5	1	8.55	10	41.4	14.5	0.073
P6KE11/J	9.9	12.1	1	8.92	5	37	16.2	0.075
P6KE11A/J	10.5	11.6	1	9.4	5	38.5	15.6	0.075
P6KE12/J	10.8	13.2	1	9.72	5	34.7	17.3	0.078
P6KE12A/J	11.4	12.6	1	10.2	5	35.9	16.7	0.078
P6KE13/J	11.7	14.3	1	10.5	5	31.6	19	0.061
P6KE13A/J	12.4	13.7	1	11.1	5	33.0	18.2	0.081
P6KE15/J	13.5	16.5	1	12.1	5	27.3	22	0.084
P6KE15A/J	14.3	15.8	1	12.8	5	28.3	21.2	0.084
P6KE16/J	14.4	17.6	1	12.9	5	25.5	23.5	0.086
P6KE16A/J	15.2	16.8	1	13.6	5	26.7	22.5	0.086
P6KE18/J	16.2	19.8	1	14.5	5	22.6	26.5	0.088
P6KE18A/J	17.1	18.9	1	15.3	5	23.8	25.2	0.088
P6KE20/J	18	22	1	16.2	5	20.6	29.1	0.09
P6KE20A/J	19	21	1	17.1	5	21.7	27.7	0.09
P6KE22/J	19.8	24.2	1	17.8	5	18.8	31.9	0.092
P6KE22A/J	20.9	23.1	1	18.8	5	19.6	30.6	0.092
P6KE24/J	21.6	26.4	1	19.4	5	17.6	34.7	0.094
P6KE24A/J	22.8	25.2	1	20.5	5	18.1	33.2	0.094
P6KE27/J	24.3	29.37	1	21.8	5	15.3	39.1	0.096
P6KE27A/J	25.7	28.4	1	23.1	5	16.0	37.5	0.096
P6KE30/J	27	33	1	24.3	5	13.8	43.5	0.097
P6KE30A/J	28.5	31.5	1	25.6	5	14.5	41.4	0.097
P6KE33/J	29.7	36.3	1	26.8	5	12.6	47.7	0.098
P6KE33A/J	31.4	34.7	1	28.2	5	13.1	45.7	0.098
P6KE36/J	32.4	39.6	1	29.1	5	11.5	52	0.099
P6KE36A/J	34.2	37.8	1	30.8	5	12.0	49.9	0.099
P6KE39/J	35.1	42.9	1	31.6	5	10.6	56.4	0.1
P6KE39A/J	37.1	41	1	33.3	5	11.1	53.9	0.1
P6KE43/J	38.7	47.3	1	34.8	5	9.7	61.9	0.101
P6KE43A/J	40.9	45.2	1	36.8	5	10.1	59.3	0.101
P6KE47/J	42.3	51.7	1	38.1	5	8.8	67.8	0.101
P6KE47A/J	44.7	49.4	1	40.2	5	9.3	64.8	0.101
P6KE51/J	45.9	56.1	1	41.3	5	8.2	73.5	0.102
P6KE51A/J	48.5	53.6	1	43.6	5	8.6	70.1	0.102
P6KE56/J	50.4	61.6	1	45.4	5	7.5	80.5	0.103
P6KE56A/J	53.2	58.8	1	47.8	5	7.8	77	0.103
P6KE62/J	55.8	68.2	1	50.2	5	6.7	89	0.104



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Electrical Characteristic at (T_A =25°C unless otherwise noted)

Device Type	Breakdown Voltage at Test Current I _r			Stand-off Voltage V _{WM}	Maximum Reverse Leakage at V _{WM} I _D (μ A)	Maximum Peak Pulse Current I _{PPM} (A)	Maximum Clamping Voltage at I _{PPM} V _c (V)	Maximum Temperature Coefficient of V _{BR} X _{vz} (%°C)
	MIN	MAX						
	V _{BR} (V)		I _r (mA)					
	Note 1							
P6KE62A/J	58.9	65.1	1	53	5	7.1	85	0.104
P6KE68/J	61.2	74.8	1	55.1	5	6.1	98	0.104
P6KE68A/J	64.6	71.4	1	58.1	5	6.5	92	0.104
P6KE75/J	67.5	82.5	1	60.7	5	5.6	108	0.105
P6KE75A/J	71.3	78.8	1	64.1	5	5.8	103	0.105
P6KE82/J	73.8	90.2	1	66.4	5	5.1	116	0.105
P6KE82A/J	77.9	86.1	1	70.1	5	5.3	113	0.105
P6KE91/J	81.9	100	1	73.7	5	4.6	131	0.106
P6KE91A/J	86.5	85.5	1	77.8	5	4.8	125	0.106
P6KE100/J	90	110	1	81	5	4.2	144	0.106
P6KE100A/J	95	105	1	85.5	5	4.4	137	0.106
P6KE110/J	99	121	1	89.2	5	3.8	158	0.107
P6KE110A/J	105	116	1	94	5	3.9	152	0.107
P6KE120/J	108	132	1	97.2	5	3.5	173	0.107
P6KE120A/J	114	126	1	102	5	3.6	165	0.107
P6KE130/J	117	143	1	105	5	3.2	187	0.107
P6KE130A/J	124	137	1	111	5	3.4	179	0.107
P6KE150/J	135	165	1	121	5	2.8	215	0.108
P6KE150A/J	143	158	1	128	5	2.9	207	0.108
P6KE160/J	144	176	1	130	5	2.6	230	0.108
P6KE160A/J	152	168	1	136	5	2.7	219	0.108
P6KE170/J	153	187	1	138	5	2.5	244	0.108
P6KE170A/J	162	179	1	145	5	2.6	234	0.108
P6KE180/J	162	198	1	146	5	2.3	258	0.108
P6KE180A/J	171	189	1	154	5	2.4	246	0.108
P6KE200/J	180	220	1	162	5	2.1	287	0.108
P6KE200A/J	190	210	1	171	5	2.2	274	0.108
P6KE220/J	198	242	1	175	5	1.7	344	0.108
P6KE220A/J	/209	231	1	185	5	1.8	328	0.108
P6KE250/J	225	275	1	202	5	1.7	360	0.11
P6KE250A/J	237	263	1	214	5	1.7	344	0.11
P6KE300/J	270	330	1	243	5	1.4	430	0.11
P6KE300A/J	285	315	1	256	5	1.4	414	0.11
P6KE350/J	315	385	1	284	5	1.2	504	0.11
P6KE350A/J	332	368	1	300	5	1.2	482	0.11
P6KE400/J	360	440	1	324	5	1.0	571	0.11
P6KE400A/J	380	420	1	342	5	1.1	548	0.11
P6KE440/J	396	484	1	356	5	0.95	631	0.11
P6KE440A/J	418	462	1	376	5	1.0	602	0.11

Notes:

- (1) V_{BR} measured after I_r applied for 300ms I_r =square wave pulse or equivalent
- (2) Surge current waveform per Figure 3 and derate per Fig.2
- (3) For bidirectional type having V_{WM} of 10 volts and less, the I_D limit is doubled



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RATING AND CHARACTERISTIC CURVES P6KE6.8/J THRU P6KE440CA/J

FIG.1- PEAK PULSE POWER RATING CURVE

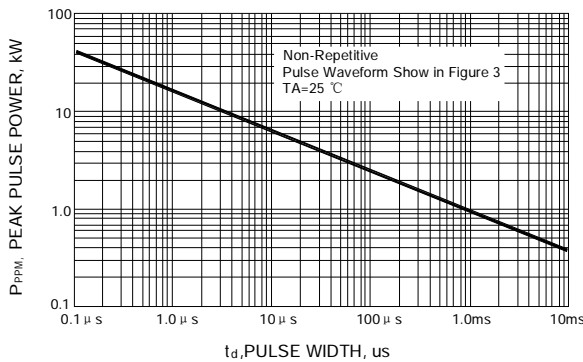


FIG.2- PULSE DERATING CURVE

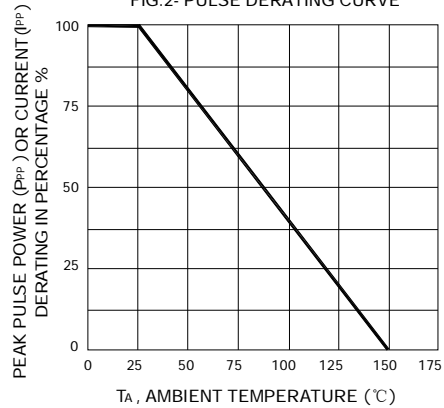


FIG.3- PULSE WAVEFORM

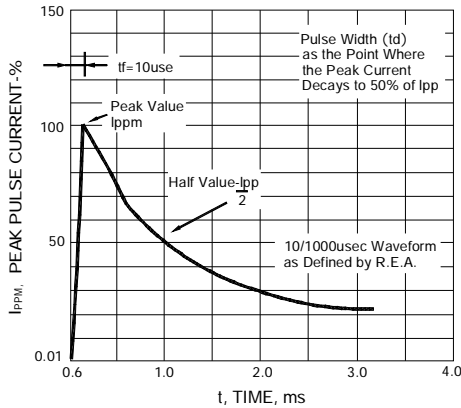


FIG.4- STEADY STATE POWER DERATING CURVE

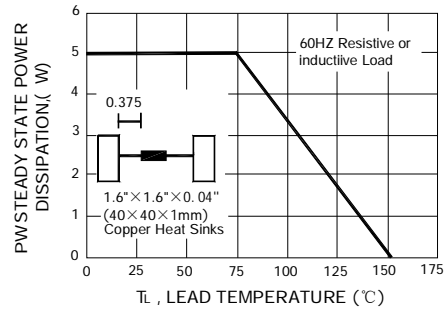


FIG.5- TYPICAL JUNCTION CAPACITANCE UNIDIRECTIONAL

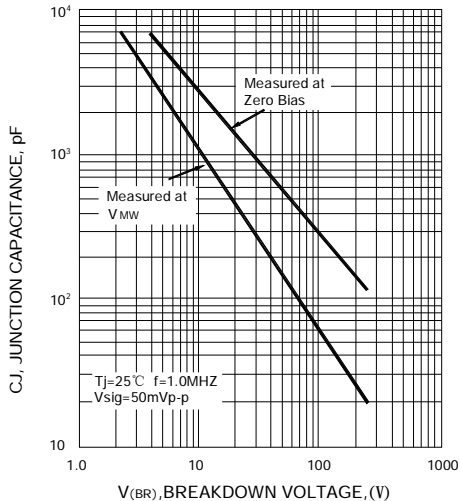


FIG.6- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT UNIDIRECTIONAL

