SHANGHAI SUNRISE ELECTRONICS CO., LTD.

P4KE6.8 THRU P4KE440CA

TRANSIENT VOLTAGE SUPPRESSOR

BREAKDOWN VOLTAGE:6.8-440V

PEAK PULSE POWER: 400W

TECHNICAL SPECIFICATION

FEATURES

- 400W peak pulse power capability
- Excellent clamping capability
- Low incremental surge resistance
- Fast response time:
  typically less than 1.0ps from 0V to V_{BR}
  for unidirectional and 5.0nS for bidirectional types.
- High temperature soldering guaranteed:
  265°C/10S/9.5mm lead length at 5 lbs tension

MECHANICAL DATA

- Terminal: Plated axial leads solderable per MIL-STD 202E, method 208C
- Case: Molded with UL-94 Class V-O recognized flame retardant epoxy
- Polarity: Color band denotes cathode except for unidirectional types.
- Mounting position: Any

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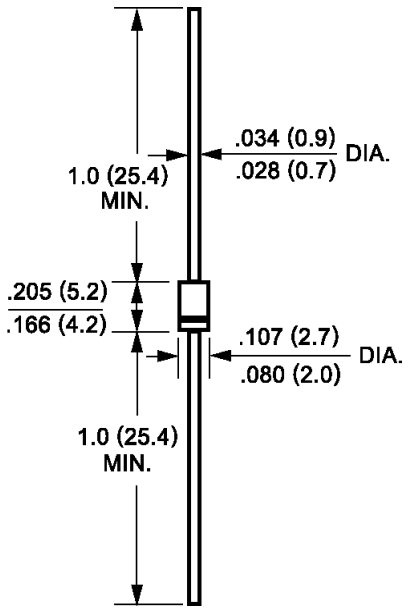

Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

(Ratings at 25°C ambient temperature unless otherwise specified)

RATINGS		SYMBOL	VALUE	UNITS
Peak power dissipation	(Note 1)	Pppm	Minimum 400	W
Peak pulse reverse current	(Note 1)	Ippm	See Table	A
Steady state power dissipation	(Note 2)	Pm(av)	1.0	W
Peak forward surge current	(Note 3)	I_{FSM}	40	A
Maximum instantaneous forward voltage at 50A for unidirectional only	(Note 4)	V_F	3.5/6.5	V
Operating junction and storage temperature range		T_{STG},T_J	-55 to + 175	°C

Notes:

1. 10/1000µS waveform non-repetitive current pulse, and derated above Ta=25°C
2. Tl=75°C, lead length 9.5mm, Mounted on copper pad area of (40×40mm)
3. Measured on 8.3ms single half sine-wave or equivalent square wave,duty cycle=4 pulses per minute maximum.
4. V_F=3.5V max. for devices of $V_{(BR)} \leq$ 200V, and V_F=5.0V max. for devices of $V_{(BR)}$ >200V

DEVICES FOR BIDIRECTIONAL APPLICATIONS

1. **Suffix 'A' dnotes 5% tolerance device,no suffix 'A' dnotes 10% tolerance device.**
2. **For bidirectional use 'C' or 'CA' suffix for types P4KE7.5 thru types P4KE440A (e.g. P4KE7.5C,P4KE440CA), for unidirectional don't use 'C' suffix after types.**
3. **For bidirectional devices having V_{WM} of 10 volts and less, the I_D limit is doubled.**
4. **Electrical characteristics apply in both directions.**

http://www.sse-diode.com

ELECTRICAL CHARACTERISTICS

(at T_A=25°C unless otherwise noted)

Device Type	Breakdown Voltage $V_{(BR)}$ (Volts) (NOTE 1)		Test Current I_T (mA)	Stand-off Voltage V_{WM} (Volts)	Maximum Reverse Leakage at V_{WM} I_D(μA) (NOTE 3)	Maximum Peak Pulse Reverse Current I_{ppm} (Amps) (NOTE 2)	Maximum Clamping Voltage at I_{ppm} V_C (Volts)	Maximum Temperature Coefficient of $V_{(BR)}$ (%/°C)
	MIN	MAX						
***P4KE6.8**	6.12	7.48	10.0	5.50	1000.0	38.0	10.8	0.057
***P4KE6.8A**	6.45	7.14	10.0	5.80	1000.0	40.0	10.5	0.057
P4KE7.5	6.75	8.25	10.0	6.05	500.0	36.0	11.7	0.061
P4KE7.5A	7.13	7.88	10.0	6.40	500.0	37.0	11.3	0.061
P4KE8.2	7.38	9.02	10.0	6.63	200.0	33.0	12.5	0.065
P4KE8.2A	7.79	8.61	10.0	7.02	200.0	35.0	12.1	0.065
P4KE9.1	8.19	10.0	1.0	7.37	50.0	30.0	13.8	0.068
P4KE9.1A	8.65	9.55	1.0	7.78	50.0	31.0	13.4	0.068
P4KE10	9.00	11.0	1.0	8.10	10.0	28.0	15.0	0.073
P4KE10A	9.50	10.5	1.0	8.55	10.0	29.0	14.5	0.073
P4KE11	9.90	12.1	1.0	8.92	5.0	26.0	16.2	0.075
P4KE11A	10.5	11.6	1.0	9.40	5.0	27.0	15.6	0.075
P4KE12	10.8	13.2	1.0	9.72	5.0	24.0	17.3	0.078
P4KE12A	11.4	12.6	1.0	10.2	5.0	25.0	16.7	0.078
P4KE13	11.7	14.3	1.0	10.5	5.0	22.0	19.0	0.081
P4KE13A	12.4	13.7	1.0	11.1	5.0	23.0	18.2	0.081
P4KE15	13.5	16.5	1.0	12.1	5.0	19.0	22.0	0.084
P4KE15A	14.3	15.8	1.0	12.8	5.0	20.0	21.2	0.084
P4KE16	14.4	17.6	1.0	12.9	5.0	18.0	23.5	0.086
P4KE16A	15.2	16.8	1.0	13.6	5.0	19.0	22.5	0.086
P4KE18	16.2	19.8	1.0	14.5	5.0	16.0	26.5	0.088
P4KE18A	17.1	18.9	1.0	15.3	5.0	17.0	25.2	0.088
P4KE20	18.0	22.0	1.0	16.2	5.0	14.0	29.1	0.090
P4KE20A	19.0	21.0	1.0	17.1	5.0	15.0	27.7	0.090
P4KE22	19.8	24.2	1.0	17.8	5.0	13.0	31.9	0.092
P4KE22A	20.9	23.1	1.0	18.8	5.0	14.0	30.6	0.092
P4KE24	21.6	26.4	1.0	19.4	5.0	12.0	34.7	0.094
P4KE24A	22.8	25.2	1.0	20.5	5.0	13.0	33.2	0.094
P4KE27	24.3	29.7	1.0	21.8	5.0	11.0	39.1	0.096
P4KE27A	25.7	28.4	1.0	23.1	5.0	11.2	37.5	0.096
P4KE30	27.0	33.0	1.0	24.3	5.0	10.0	43.5	0.097
P4KE30A	28.5	31.5	1.0	25.6	5.0	10.0	41.4	0.097
P4KE33	29.7	36.3	1.0	26.8	5.0	9.0	47.7	0.098
P4KE33A	31.4	34.7	1.0	28.2	5.0	9.0	45.7	0.098
P4KE36	32.4	39.6	1.0	29.1	5.0	8.0	52.0	0.099
P4KE36A	34.2	37.8	1.0	30.8	5.0	8.4	49.9	0.099
P4KE39	35.1	42.9	1.0	31.6	5.0	7.4	56.4	0.100
P4KE39A	37.1	41.0	1.0	33.3	5.0	7.8	53.9	0.100
P4KE43	38.7	47.3	1.0	34.8	5.0	6.8	61.9	0.101
P4KE43A	40.9	45.2	1.0	36.8	5.0	7.1	59.3	0.101
P4KE47	42.3	51.7	1.0	38.1	5.0	6.2	67.8	0.101
P4KE47A	44.7	49.4	1.0	40.2	5.0	5.0	64.8	0.101
P4KE51	45.9	56.1	1.0	41.3	5.0	5.7	73.5	0.102
P4KE51A	48.5	53.6	1.0	43.6	5.0	6.0	70.1	0.102
P4KE56	50.4	61.6	1.0	45.4	5.0	5.2	80.5	0.103
P4KE56A	53.2	58.8	1.0	47.8	5.0	5.5	77.0	0.103

* Not available as bidirectional devices

ELECTRICAL CHARACTERISTICS

(at T_A=25°C unless otherwise noted)

Device Type	Breakdown Voltage $V_{(BR)}$ (Volts) (NOTE 1)		Test Current I_T (mA)	Stand-off Voltage V_{WM} (Volts)	Maximum Reverse Leakage at V_{WM} I_D(μA) (NOTE 3)	Maximum Peak Pulse Reverse Current I_{ppm} (Amps) (NOTE 2)	Maximum Clamping Voltage at I_{ppm} V_C (Volts)	Maximum Temperature Coefficient of $V_{(BR)}$ (%/°C)
	MIN	MAX						
P4KE62	55.8	68.2	1.0	50.2	5.0	4.7	89.0	0.104
P4KE62A	58.9	65.1	1.0	53.0	5.0	5.0	85.0	0.104
P4KE68	61.2	74.8	1.0	55.1	5.0	4.3	98.0	0.104
P4KE68A	64.6	71.4	1.0	58.1	5.0	4.6	92.0	0.104
P4KE75	67.5	82.5	1.0	60.7	5.0	3.9	108.0	0.105
P4KE75A	71.3	78.8	1.0	64.1	5.0	4.1	103.0	0.105
P4KE82	73.8	90.2	1.0	66.4	5.0	3.6	118.0	0.105
P4KE82A	77.9	86.1	1.0	70.1	5.0	3.7	113.0	0.105
P4KE91	81.9	100	1.0	73.7	5.0	3.2	131.0	0.106
P4KE91A	86.5	95.5	1.0	77.8	5.0	3.4	125.0	0.106
P4KE100	90.0	110	1.0	81.0	5.0	2.9	144.0	0.106
P4KE100A	95.0	105	1.0	85.5	5.0	3.1	137.0	0.106
P4KE110	99.0	121	1.0	89.2	5.0	2.7	158.0	0.107
P4KE110A	105	116	1.0	94.0	5.0	2.8	152.0	0.107
P4KE120	108	132	1.0	97.2	5.0	2.4	173.0	0.107
P4KE120A	114	126	1.0	102	5.0	2.5	165.0	0.107
P4KE130	117	143	1.0	105	5.0	2.2	187.0	0.107
P4KE130A	124	137	1.0	111	5.0	2.3	179.0	0.107
P4KE150	135	165	1.0	121	5.0	2.0	215.0	0.108
P4KE150A	143	158	1.0	128	5.0	2.0	207.0	0.108
P4KE160	144	176	1.0	130	5.0	1.8	230.0	0.108
P4KE160A	152	168	1.0	136	5.0	1.9	219.0	0.108
P4KE170	153	187	1.0	138	5.0	1.7	244.0	0.108
P4KE170A	162	179	1.0	145	5.0	1.8	234.0	0.108
P4KE180	162	198	1.0	146	5.0	1.6	258.0	0.108
P4KE180A	171	189	1.0	154	5.0	1.7	246.0	0.108
P4KE200	180	220	1.0	162	5.0	1.5	287.0	0.108
P4KE200A	190	210	1.0	171	5.0	1.53	274.0	0.108
P4KE220	198	242	1.0	175	5.0	1.16	344.0	0.108
P4KE220A	209	231	1.0	185	5.0	1.22	328.0	0.108
P4KE250	225	275	1.0	202	5.0	1.11	360.0	0.110
P4KE250A	237	263	1.0	214	5.0	1.16	344.0	0.110
P4KE300	270	330	1.0	243	5.0	0.93	430.0	0.110
P4KE300A	285	315	1.0	256	5.0	0.97	414.0	0.110
P4KE350	315	385	1.0	284	5.0	0.79	504.0	0.110
P4KE350A	332	368	1.0	300	5.0	0.83	482.0	0.110
P4KE400	360	440	1.0	324	5.0	0.70	574.0	0.110
P4KE400A	380	420	1.0	342	5.0	0.73	548.0	0.110
P4KE440	396	484	1.0	356	5.0	0.66	631.0	0.110
P4KE440A	418	462	1.0	376	5.0	0.69	602.0	0.110

NOTES:

1. $V_{(BR)}$ measured after I_T applied for 300μs, I_T=square wave pulse or equivalent
2. Surge current waveform and derated
3. For bidirectional types having V_{WM} of 10 volts and less, the I_D limit is doubled