

Microsemi Corp.
The diode experts

SANTA ANA, CA

SCOTTSDALE, AZ

For more information call:
(602) 941-6300

**1.2KE5
thru
1.2KE170A**

TAZ

FEATURES

- AVAILABLE IN RANGES FROM 5.0 TO 170 VOLTS
- AVAILABLE IN BIDIRECTIONAL FOR AC APPLICATIONS
- LOW CLAMPING RATIO
- SMALL PACKAGE SIZE

As a low cost, 1,200 watt commercial and industrial device, this TAZ is used in applications where space is at a premium and where large voltage transients can permanently damage voltage-sensitive components.

This TAZ has a peak pulse power rating of 1,200 watts for one millisecond. The response time of TAZ clamping action is theoretically instantaneous (1×10^{-12} sec); therefore, they can protect integrated circuits, MOS devices, hybrids, and other voltage-sensitive semiconductors and components. TAZ can also be used in series or parallel to increase the peak power ratings.

MAXIMUM RATINGS

1,200 Watts of Peak Pulse Power dissipation at 25°C (see derating curve)
 $t_{clamping}$ (0 Volts to BV Min.):

Unidirectional $< 1 \times 10^{-12}$ Seconds; Bidirectional $< 5 \times 10^{-9}$ Seconds.

Operating and Storage temperatures: -55° to +175°C

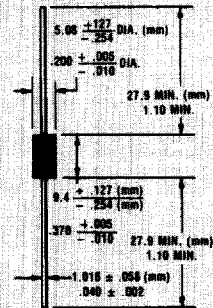
Forward surge rating: 160 amps, 8.3 msec at 25°C (except Bipolar)

Steady State power dissipation: 5.0 watt $T_L = 75^\circ\text{C}$, Lead Length = 3/8"

Repetition rate (duty cycle): .05%

TRANSIENT ABSORPTION ZENER

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MECHANICAL CHARACTERISTICS

CASE: Molded case.

FINISH: Silverplated copper, readily solderable.

POLARITY: Cathode terminal marked with a band (except bidirectional types).

WEIGHT: 1.5 grams (Appx.).

MOUNTING POSITION: Any.

1.2KE5 thru 1.2KE170A

ELECTRICAL CHARACTERISTICS @ 25°C

MICROSEM PART NUMBER	REVERSE STAND-OFF VOLTAGE (NOTE 1) V_{WM} VOLTS	BREAKDOWN VOLTAGE V_{BR} VOLTS @		I_{RM} mA	MAXIMUM REVERSE LEAKAGE I_{R} A	MAXIMUM CLAMPING VOLTAGE @ I_{PP} (FIG. 3) V_C VOLTS	MAXIMUM PEAK PULSE CURRENT (FIG. 3) I_{PP} A	MAXIMUM TEMPERATURE VARIATION OF T_{JM} mK/°C
		MIN.	MAX.					
1.2KE5.0	5.0	6.40	7.30	10	1000	9.6	126.0	5.0
1.2KE5.0A	5.0	6.40	7.00	10	1000	9.2	130.0	5.0
1.2KE6.0	6.0	6.67	8.15	10	1000	11.4	105.0	5.0
1.2KE6.0A	6.0	6.67	7.37	10	1000	10.3	112.0	5.0
1.2KE6.5	6.5	7.22	8.82	10	500	12.3	97.6	5.0
1.2KE6.5A	6.5	7.22	7.96	10	500	11.2	107.0	5.0
1.2KE7.0	7.0	7.78	9.51	10	200	13.3	90.2	6.0
1.2KE7.0A	7.0	7.78	8.80	10	200	12.0	100.0	6.0
1.2KE7.5	7.5	8.33	10.2	1	100	14.3	83.9	7.0
1.2KE7.5A	7.5	8.33	9.21	1	100	12.8	93.0	7.0
1.2KE8.0	8.0	8.89	10.9	1	50	15.0	80.0	7.0
1.2KE8.0A	8.0	8.89	9.83	1	50	13.6	88.2	7.0
1.2KE8.5	8.5	9.44	11.5	1	25	15.9	75.5	8.0
1.2KE8.5A	8.5	9.44	10.4	1	25	14.4	83.3	8.0
1.2KE9.0	9.0	10.0	12.2	1	10	16.8	71.0	9.0
1.2KE9.0A	9.0	10.0	11.1	1	10	15.4	78.0	9.0
1.2KE10	10	11.1	13.6	1	5	18.8	63.8	10
1.2KE10A	10	11.1	12.3	1	5	17.0	70.6	10
1.2KE11	11	12.2	14.9	1	5	20.1	59.7	11
1.2KE11A	11	12.2	13.5	1	5	18.2	65.9	11
1.2KE12	12	13.3	18.3	1	5	22.0	54.5	12
1.2KE12A	12	13.3	14.7	1	5	19.4	60.3	12
1.2KE13	13	14.4	17.6	1	5	23.8	50.4	13
1.2KE13A	13	14.4	15.9	1	5	21.5	56.8	13
1.2KE14	14	15.6	19.1	1	5	25.6	46.5	14
1.2KE14A	14	15.6	17.2	1	5	23.2	51.7	14
1.2KE15	15	16.7	20.4	1	5	28.6	44.6	16
1.2KE15A	15	16.7	18.5	1	5	24.4	49.2	16
1.2KE16	16	17.8	21.8	1	5	28.8	41.7	19
1.2KE16A	16	17.8	19.7	1	5	26.0	46.2	17
1.2KE17	17	18.9	23.1	1	5	30.5	39.3	20
1.2KE17A	17	18.9	20.9	1	5	27.6	43.5	21
1.2KE18	18	20.0	24.4	1	5	32.2	37.3	21
1.2KE18A	18	20.0	22.1	1	5	29.2	41.1	20
1.2KE20	20	22.2	27.1	1	5	35.8	33.5	25
1.2KE20A	20	22.2	24.5	1	5	32.4	37.0	23
1.2KE22	22	24.4	29.8	1	5	39.4	30.5	28
1.2KE22A	22	24.4	26.9	1	5	35.5	33.8	25
1.2KE24	24	26.7	32.6	1	5	43.0	27.9	31
1.2KE24A	24	26.7	29.5	1	5	38.9	30.8	28
1.2KE26	26	28.9	35.3	1	5	46.6	25.8	31
1.2KE26A	26	28.9	31.9	1	5	42.1	28.5	30
1.2KE28	28	31.1	38.0	1	5	50.0	24.0	35
1.2KE28A	28	31.1	34.4	1	5	45.4	26.4	31
1.2KE30	30	33.3	40.7	1	5	53.5	22.4	39
1.2KE30A	30	33.3	37.8	1	5	48.4	24.6	36
1.2KE33	33	36.7	44.9	1	5	59.0	20.3	45
1.2KE33A	33	36.7	40.6	1	5	53.3	22.5	41
1.2KE36	36	40.0	48.9	1	5	64.3	18.7	49
1.2KE36A	36	40.0	44.2	1	5	58.1	20.7	45
1.2KE40	40	44.4	54.3	1	5	71.4	16.9	55
1.2KE40A	40	44.4	49.1	1	5	64.5	18.6	50
1.2KE43	43	47.8	58.4	1	5	76.7	15.6	60
1.2KE43A	43	47.8	52.8	1	5	69.4	17.3	54
1.2KE45	45	50.0	61.1	1	5	80.3	14.9	63
1.2KE45A	45	50.0	55.3	1	5	72.7	16.5	57
1.2KE48	48	53.3	65.1	1	5	85.5	14.0	66
1.2KE48A	48	53.3	58.8	1	5	77.4	15.5	61
1.2KE51	51	56.7	69.3	1	5	91.7	13.2	72
1.2KE51A	51	56.7	62.7	1	5	82.4	14.6	65
1.2KE54	54	60.0	73.3	1	5	99.3	12.5	76
1.2KE54A	54	60.0	66.3	1	5	87.1	13.8	69
1.2KE58	58	64.4	78.7	1	5	105.0	11.7	83
1.2KE58A	58	64.4	71.2	1	5	93.6	12.8	74
1.2KE60	60	66.7	81.5	1	5	107.0	11.2	86
1.2KE60A	60	66.7	73.7	1	5	96.9	12.4	77
1.2KE64	64	71.1	86.9	1	5	114.0	10.5	91
1.2KE64A	64	71.1	78.6	1	5	103.0	11.6	82
1.2KE70	70	77.8	95.1	1	5	125	9.6	100
1.2KE70A	70	77.8	86.0	1	5	113	10.6	90
1.2KE75	75	83.3	102.0	1	5	134	8.9	106
1.2KE75A	75	83.3	92.1	1	5	121	9.9	97
1.2KE78	78	86.7	106.0	1	5	139	8.6	112
1.2KE78A	78	86.7	96.6	1	5	126	9.5	102
1.2KE85	85	94.4	115.0	1	5	151	7.9	122
1.2KE85A	85	94.4	104.0	1	5	137	8.8	110
1.2KE90	90	100	122	1	6	160	7.5	130
1.2KE90A	90	100	111	1	5	146	8.2	118
1.2KE100	100	111	136	1	5	179	6.7	145
1.2KE100A	100	111	123	1	5	162	7.4	132
1.2KE110	110	122	146	1	5	196	6.1	159
1.2KE110A	110	122	132	1	5	177	6.8	144
1.2KE120	120	133	163	1	5	214	5.6	176
1.2KE120A	120	133	147	1	5	193	6.2	157
1.2KE130	130	144	176	1	5	231	5.2	190
1.2KE130A	130	144	159	1	5	209	5.7	172
1.2KE150	150	167	204	1	5	286	4.5	220
1.2KE150A	150	167	185	1	5	243	4.96	200
1.2KE160	160	178	218	1	5	287	4.2	235
1.2KE160A	160	178	197	1	5	259	4.6	213
1.2KE170	170	189	231	1	5	304	3.9	254
1.2KE170A	170	189	209	1	5	275	4.4	228

V_T at 80 amps peak, 8.3 ms sine wave equals 3.5 volts maximum (except bidirectional).
For Bidirectional Applications—use C or CA suffix for types 1.2KE6.5 through 1.2KE170.

NOTE 1: A TAZ is normally selected according to the reverse "Stand Off Voltage" (V_{WM}) which should be equal to or greater than the DC or continuous peak operating voltage level.

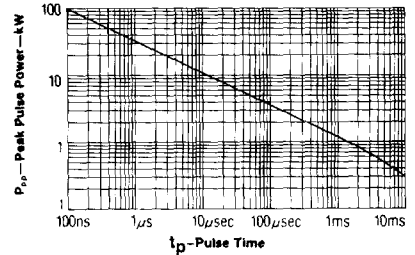
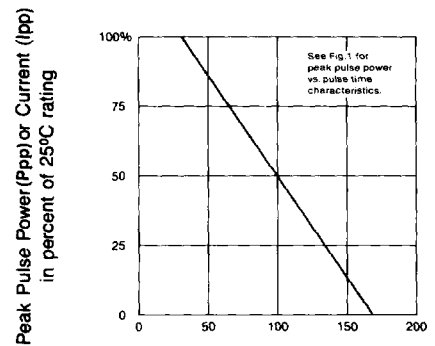
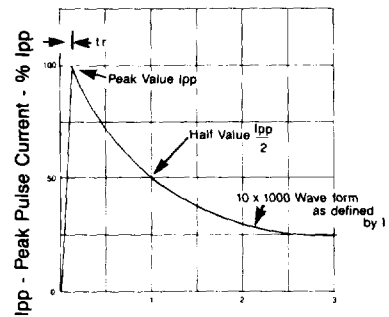


FIGURE 1
Peak Pulse Power vs. Pulse Time



T - Temperature - °C

FIGURE 2
Derating Curve



t - Time - ms

Test waveform
parameters
 $t_r = 10 \mu\text{sec.}$
 $t_p = 1000 \mu\text{sec.}$

FIGURE 3
PULSE WAVEFORM