

Microsemi Corp.
The diode experts

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**1.5KCD6.8 thru
1.5KCD200A,
CD5908 and CD6267
thru CD6303A
Transient Suppressor
CELLULAR DIE PACKAGE**

APPLICATION

This TAZ* series has a peak pulse power rating of 1500 watts for one millisecond. It can protect integrated circuits, hybrids, CMOS, MOS and other voltage sensitive components that are used in a broad range of applications including: telecommunications, power supplies, computers, automotive, industrial and medical equipment. TAZ* devices have become very important as a consequence of their high surge capability, extremely fast response time and low clamping voltage.

The cellular die (CD) package is ideal for use in hybrid applications and for solder mounting. The cellular design in hybrids assures ample bonding with immediate heat sinking to provide the required transient peak pulse power of 1500 watts.

FEATURES

- ☑ Economical
- ☑ 1500 Watts peak pulse power dissipation
- ☑ Stand-Off voltages from 5.0V to 171V
- ☑ Uses thermally passivated die design
- ☑ Additional silicone protective coating over die for rugged environments
- ☑ Stringent process norm screening
- ☑ Low leakage current at rated stand-off voltage
- ☑ Exposed metal surfaces are readily solderable
- ☑ 100% lot traceability
- ☑ Manufactured in the U.S.A.
- ☑ Meets JEDEC IN6267 - IN6303A electrically equivalent specifications
- ☑ Available in bipolar configuration
- ☑ Additional transient suppressor ratings and sizes are available as well as zener, rectifier and reference diode configurations. Consult factory for special requirements.

MAXIMUM RATINGS

1500 Watts of Peak Pulse Power Dissipation at 25°C**

†clamping (0 Volts to BV Min.):

unidirectional 1×10^{-12} seconds;

bidirectional 5×10^{-9} seconds;

Operating and Storage Temperature: -65°C to +175°C

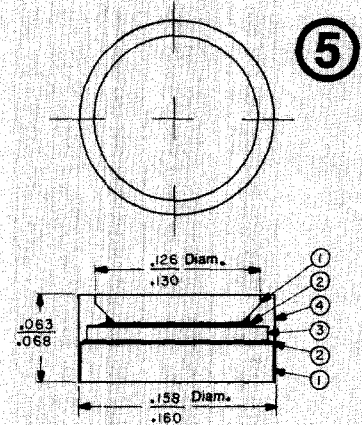
Forward Surge Rating: 200 Amps, 1/120 second at 25°C

Steady State Power Dissipation is heat sink dependent.

*Transient Absorption Zener

**Wire contact or tab geometry for interconnects should be selected with adequate cross-sectional size to prevent fusing relative to peak pulse current rating (Ipp).

PACKAGE DIMENSIONS



Item Number	Description
1.....	Nickel and Silver Plated Copper Discs
2.....	Solder Bond
3.....	Silicon Die
4.....	Conformal coating

Illustration Represents Unipolar Only.

MECHANICAL CHARACTERISTICS

Case: Nickel and Silver plated copper discs with conformal coating.

Finish: Both external surfaces are corrosion resistant, readily solderable.

Polarity: Large contact side is cathode

Mounting Position: Any

1.5KCD6.8 thru 1.5KCD200A, CD5908 and CD6267 thru CD6303A CELLULAR DIE PACKAGE

ELECTRICAL CHARACTERISTICS @ 25°C

Industry Type Number	JEDEC Type Number Elect. Equiv.	Rated Stand-off Voltage V _{WM}	Breakdown Voltage V _(BR)		Maximum Clamping Voltage @ I _{PP} (1 mSEC)	Maximum Reverse Leakage @ V _{WM}	Rated Maximum Peak Pulse Current	Maximum Temperature Coefficient α_V
			MIN	MAX				
1.5KCD6.8	CD629	3.00	6.0	7.85	7.6	300	30	0.57
1.5KCD6.8A	CD627A	3.00	6.45	7.14	10	103	143.0	0.57
1.5KCD7.5	CD628	6.00	6.75	8.25	10	11.7	500	120.0
1.5KCD7.5A	CD628A	6.00	7.13	7.86	10	11.3	130.0	0.61
1.5KCD8.2	CD629	8.23	7.38	9.02	10	12.5	200	120.0
1.5KCD8.2A	CD629A	7.62	7.79	8.90	10	12.1	200	120.0
1.5KCD10	CD627	7.7	8.18	10.00	11	13.6	50	109.0
1.5KCD10A	CD627A	7.7	8.63	9.33	11	13.6	50	112.0
1.5KCD10	CD6271	8.10	9.00	11.00	11	15.9	100.0	0.73
1.5KCD10A	CD627A	8.50	9.50	10.50	11	14.5	10	103.0
1.5KCD11	CD627	8.92	9.90	11.80	11	16.2	10	113.0
1.5KCD11A	CD627A	9.40	10.50	11.80	11	15.0	10	96.0
1.5KCD11	CD6271	9.72	10.80	13.20	11	17.3	5	97.6
1.5KCD11A	CD627A	10.20	11.40	12.80	11	18.7	5	90.0
1.5KCD11	CD6271	10.50	11.70	14.30	11	19.0	5	79.0
1.5KCD11A	CD627A	11.10	12.40	13.10	11	17.9	5	82.0
1.5KCD15	CD6275	12.10	13.50	18.50	11	22.0	5	89.0
1.5KCD15A	CD627A	12.80	14.30	15.80	11	21.2	5	71.0
1.5KCD16	CD6275	12.90	14.40	17.80	11	23.0	5	84.0
1.5KCD16A	CD627A	13.60	15.20	16.80	11	22.5	5	67.0
1.5KCD16	CD6271	14.50	16.20	18.80	11	26.5	5	56.5
1.5KCD16A	CD627A	15.20	17.10	18.80	11	25.2	5	59.5
1.5KCD16	CD6271	15.20	18.00	22.00	11	29.1	5	54.5
1.5KCD16A	CD627A	15.20	18.00	22.00	11	27.7	5	54.5
1.5KCD22	CD6279	17.80	19.80	24.20	11	31.9	5	47.0
1.5KCD22A	CD627A	18.80	20.80	23.10	11	30.6	5	49.0
1.5KCD22A	CD627A	18.40	21.80	24.7	11	34.7	5	43.0
1.5KCD24A	CD629A	20.50	22.80	25.20	11	33.2	5	45.0
1.5KCD27	CD6281	21.80	24.30	29.10	11	36.1	5	36.5
1.5KCD27A	CD628A	23.10	25.70	29.10	11	37.5	5	40.0
1.5KCD27A	CD628A	24.20	27.00	33.00	11	43.5	5	34.5
1.5KCD27A	CD628A	25.80	28.50	33.00	11	41.6	5	36.6
1.5KCD33	CD6283	26.80	29.70	36.30	11	47.7	5	31.5
1.5KCD33A	CD628A	28.20	31.40	34.70	11	45.7	5	33.0
1.5KCD36	CD6286	28.10	32.40	39.80	11	53.0	5	29.0
1.5KCD36A	CD628A	30.80	34.20	37.80	11	49.9	5	30.0
1.5KCD36A	CD628A	31.60	35.10	42.90	11	56.3	5	26.5
1.5KCD36A	CD628A	33.30	37.10	41.00	11	53.8	5	28.0
1.5KCD36	CD6286	34.80	38.70	45.00	11	61.9	5	24.0
1.5KCD36A	CD628A	36.80	40.80	45.20	11	59.3	5	25.3
1.5KCD41	CD6281	38.10	42.30	51.70	11	67.8	5	22.2
1.5KCD41A	CD627A	40.20	44.70	48.40	11	64.8	5	23.2
1.5KCD41A	CD628A	41.20	45.80	58.10	11	73.1	5	20.4
1.5KCD41A	CD628A	43.80	48.50	51.60	11	70	5	21.4
1.5KCD56	CD6288	45.40	50.40	61.80	11	80.5	5	18.6
1.5KCD56A	CD628A	47.80	53.20	58.80	11	77.0	5	18.5
1.5KCD56	CD6288	49.20	55.80	66.00	11	89.6	5	16.9
1.5KCD56A	CD628A	53.00	58.80	65.00	11	85.0	5	17.7
1.5KCD67	CD6291	55.10	61.20	74.80	11	98.0	5	15.3
1.5KCD68A	CD6291A	58.10	64.80	71.60	11	92.0	5	16.3
1.5KCD75	CD6295	60.70	67.50	82.50	11	108.0	5	13.9
1.5KCD75A	CD629A	64.10	71.30	78.80	11	103.6	5	15.6
1.5KCD87	CD6293	66.40	73.80	90.20	11	118.0	5	12.7
1.5KCD87A	CD629A	70.10	77.80	86.10	11	113.0	5	13.3
1.5KCD91	CD6294	73.70	81.80	100.00	11	131.0	5	11.4
1.5KCD91A	CD629A	77.80	86.50	95.50	11	125.0	5	12.0
1.5KCD109	CD6299	81.90	90.00	110.00	11	144.0	5	10.4
1.5KCD109A	CD629A	85.50	95.00	105.00	11	137.0	5	11.0
1.5KCD110	CD629A	86.20	96.80	121.00	11	158.0	5	9.5
1.5KCD110A	CD629A	89.00	100.00	117.00	11	162.0	5	8.0
1.5KCD110A	CD629A	91.00	105.00	117.00	11	152.0	5	8.9
1.5KCD120	CD6297	97.20	108.00	132.00	11	173.0	5	8.7
1.5KCD120A	CD627A	102.00	114.00	128.00	11	166.0	5	9.1
1.5KCD120	CD6297	105.00	117.00	147.00	11	187.0	5	7.2
1.5KCD120A	CD629A	111.00	124.00	137.00	11	179.0	5	8.4
1.5KCD126	CD6299	121.00	135.00	165.00	11	215.0	5	7.0
1.5KCD126A	CD629A	128.00	143.00	158.00	11	207.0	5	7.2
1.5KCD180	CD6300	130.00	144.00	176.00	11	230.0	5	5.5
1.5KCD180A	CD630A	138.00	152.00	169.00	11	219.0	5	5.8
1.5KCD170	CD6301	138.00	153.00	187.00	11	244.0	5	6.2
1.5KCD170A	CD6301A	145.00	163.00	176.00	11	236.0	5	6.4
1.5KCD180	CD6302	148.00	165.00	183.00	11	258.0	5	5.8
1.5KCD180A	CD630A	154.00	171.00	188.00	11	248.0	5	6.1
1.5KCD206	CD6303	162.00	180.00	200.00	11	287.0	5	5.2
1.5KCD206A	CD630A	171.00	190.00	210.00	11	274.0	5	5.3

V_f at 100 amps peak. 8.3 ms sine wave equals 3.5 volts maximum. For bidirectional part number add C or CA as suffix (ie: 1.5KCD33C or 1.5KCD33CA; or CD6283C or CD6283CA).

Note that for bidirectional types having V_{WM} of 8 volts and under, the I_D leakage current is doubled.

SYMBOLS AND ABBREVIATIONS

- V_{WM} = RATED STAND-OFF VOLTAGE
- I_{PP} = PEAK PULSE CURRENT
- V_C (MAX) = MAXIMUM CLAMPING VOLTAGE
- V_(BR) = BREAKDOWN VOLTAGE
- I_T = TEST CURRENT
- I_D = REVERSE LEAKAGE

NOTE 1 Normal selection criteria for TAZ* devices is by rated stand-off voltage (V_{WM}) and should be equal or greater than DC or continuous peak operating voltage.

NOTE 2 TAZ* devices are tested to maximum peak pulse current (I_{PP}) with clamping voltage monitored. This surge capability is one of the most significant electrical characteristics of the device and should be considered as part of customer quality inspections.

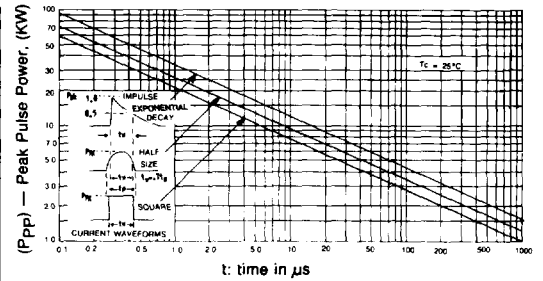


FIGURE 1
Peak Pulse Power vs Pulse Time

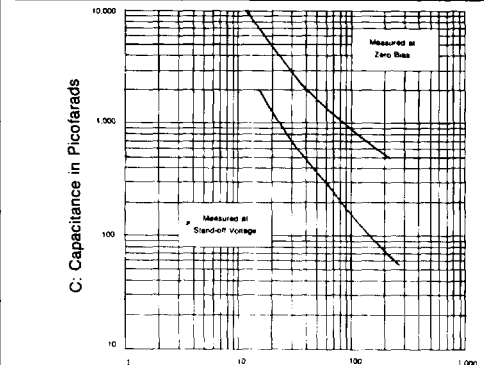


FIGURE 2
Typical Capacitance vs Breakdown Voltage

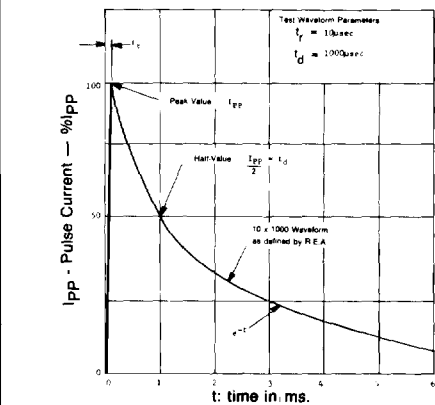


FIGURE 3
Pulse Wave Form

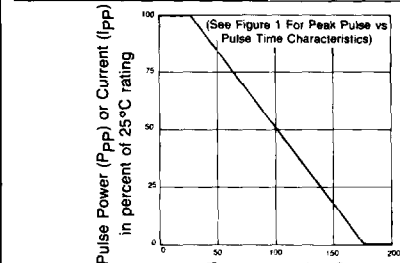


FIGURE 4
Derating Curve