

**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\*\*

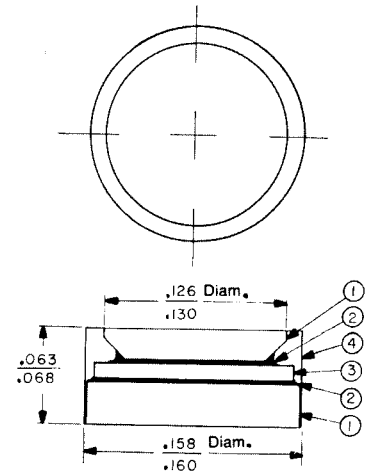
- clamping (0 Volts to BV Min.):
- unidirectional <math>1 \times 10^{-12}</math> seconds;
- bidirectional <math>5 \times 10^{-9}</math> seconds;

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 1.5KCD20A, CD5908 and CD6267 thru CD630A CELLULAR DIE PACKAGE

## ELECTRICAL CHARACTERISTICS @ 25°C

Industry Type Number	JEDEC Type Number Elect. Eqvt.	Rated Stand-Off Voltage		Breakdown Voltage V(BR) VOLTS		Maximum Clamping Voltage @ I <sub>PP</sub> (1 mSEC)	Maximum Reverse Leakage @ V <sub>WM</sub>	Rated Maximum Peak Pulse Current	Maximum Temperature Coefficient $\alpha_V$
		V <sub>WM</sub> VOLTS	V <sub>WM</sub> VOLTS	MIN	MAX				
1.5KCD1	CD6206	5.00	6.00	—	—	7.6	300	30.0	0.57
1.5KCD2	CD6208	5.80	6.85	7.14	10.0	10.5	1000	143.0	0.57
1.5KCD3	CD6210	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD4	CD6212	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD5	CD6214	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD6	CD6216	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD7	CD6218	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD8	CD6220	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD9	CD6222	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD10	CD6224	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD11	CD6226	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD12	CD6228	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD13	CD6230	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD14	CD6232	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD15	CD6234	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD16	CD6236	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD17	CD6238	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD18	CD6240	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD19	CD6242	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD20	CD6244	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD21	CD6246	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD22	CD6248	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD23	CD6250	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD24	CD6252	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD25	CD6254	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD26	CD6256	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD27	CD6258	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD28	CD6260	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD29	CD6262	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD30	CD6264	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD31	CD6266	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD32	CD6268	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD33	CD6270	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD34	CD6272	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD35	CD6274	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD36	CD6276	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD37	CD6278	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD38	CD6280	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD39	CD6282	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD40	CD6284	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD41	CD6286	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD42	CD6288	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD43	CD6290	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD44	CD6292	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD45	CD6294	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD46	CD6296	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD47	CD6298	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD48	CD6300	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD49	CD6302	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD50	CD6304	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD51	CD6306	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD52	CD6308	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD53	CD6310	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD54	CD6312	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD55	CD6314	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD56	CD6316	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD57	CD6318	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD58	CD6320	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD59	CD6322	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD60	CD6324	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD61	CD6326	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD62	CD6328	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD63	CD6330	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD64	CD6332	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61
1.5KCD65	CD6334	6.40	7.50	7.88	10.0	11.3	500	130.0	0.61

V<sub>f</sub> 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<sub>WM</sub> of 8 volts and under, the I<sub>D</sub> leakage current is doubled.

### SYMBOLS AND ABBREVIATIONS

- V<sub>WM</sub> = RATED STAND-OFF VOLTAGE
- I<sub>PP</sub> = PEAK PULSE CURRENT
- V<sub>C</sub> (MAX) = MAXIMUM CLAMPING VOLTAGE
- V(BR) = BREAKDOWN VOLTAGE
- I<sub>T</sub> = TEST CURRENT
- I<sub>D</sub> = REVERSE LEAKAGE

NOTE 1 Normal selection criteria for TAZ\* devices is by rated stand-off voltage (V<sub>WM</sub>) 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<sub>PP</sub>) 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.

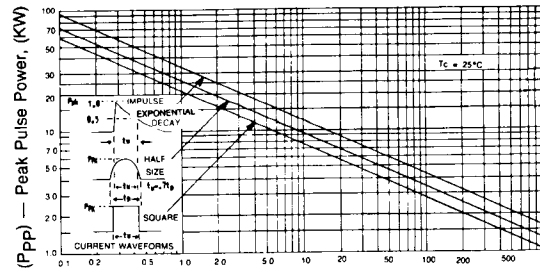


FIGURE 1  
Peak Pulse Power vs Pulse Time

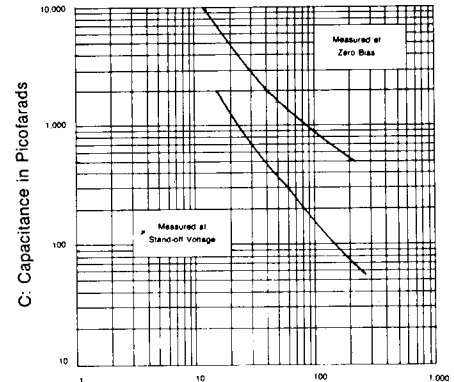


FIGURE 2  
Typical Capacitance vs Breakdown Voltage

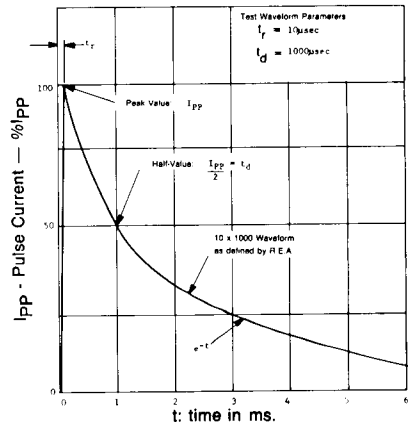


FIGURE 3  
Pulse Wave Form

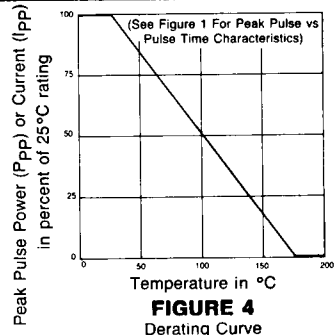


FIGURE 4  
Derating Curve