

## Microsemi Corp.

The diode experts

SANTA ANA, CA

For more information call:  
(714) 979-8220

SCOTTSDALE, AZ

For more information call:  
(602) 941-6300

## 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  $< 1 \times 10^{-12}$  seconds;

bidirectional  $< 5 \times 10^{-9}$  seconds;

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

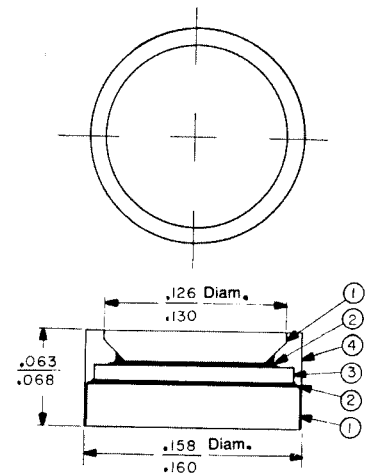
Forward Surge Rating: 200 Amps, 1/120 second at 25°C

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<br>Type<br>Number | JEDEC<br>Type<br>Number<br>Elect. Equiv. | Rated<br>Stand-Off<br>Voltage<br>V <sub>WM</sub> | Breakdown<br>Voltage<br>V <sub>(BR)</sub><br>VOLTS |        | Maximum<br>Clamping<br>Voltage<br>@ I <sub>PP</sub><br>(1 mSEC)<br>V <sub>C</sub><br>VOLTS | Maximum<br>Reverse<br>Leakage<br>@ V <sub>WM</sub><br>μA | Rated<br>Maximum<br>Peak Pulse<br>Current<br>I <sub>PP</sub><br>A | Maximum<br>Temperature<br>Coefficient<br>α <sub>VZ</sub><br>%/°C |
|----------------------------|------------------------------------------|--------------------------------------------------|----------------------------------------------------|--------|--------------------------------------------------------------------------------------------|----------------------------------------------------------|-------------------------------------------------------------------|------------------------------------------------------------------|
|                            |                                          |                                                  | MIN                                                | MAX    |                                                                                            |                                                          |                                                                   |                                                                  |
| 1.5KCD5.8A                 | CD5908                                   | 5.00                                             | 6.0                                                | 7.48   | 1                                                                                          | 7.6                                                      | 300                                                               | 0.57                                                             |
| 1.5KCD7.5                  | CD5908                                   | 5.90                                             | 6.85                                               | 7.14   | 10                                                                                         | 10.5                                                     | 1000                                                              | 0.57                                                             |
| 1.5KCD10A                  | CD5908                                   | 8.00                                             | 9.0                                                | 10.50  | 10                                                                                         | 11.7                                                     | 500                                                               | 0.61                                                             |
| 1.5KCD15A                  | CD5908                                   | 8.40                                             | 7.13                                               | 7.88   | 10                                                                                         | 11.3                                                     | 500                                                               | 0.61                                                             |
| 1.5KCD2.2                  | CD6269                                   | 6.63                                             | 7.38                                               | 9.02   | 10                                                                                         | 12.5                                                     | 200                                                               | 0.65                                                             |
| 1.5KCD2.2A                 | CD6269A                                  | 7.02                                             | 7.78                                               | 8.61   | 10                                                                                         | 12.1                                                     | 200                                                               | 0.65                                                             |
| 1.5KCD2.4                  | CD6270                                   | 7.37                                             | 8.18                                               | 10.00  | 10                                                                                         | 13.8                                                     | 50                                                                | 0.68                                                             |
| 1.5KCD5.1A                 | CD6270A                                  | 7.78                                             | 8.85                                               | 9.55   | 1                                                                                          | 13.4                                                     | 50                                                                | 0.68                                                             |
| 1.5KCD10                   | CD6271                                   | 8.10                                             | 9.00                                               | 11.00  | 1                                                                                          | 15.0                                                     | 10                                                                | 0.73                                                             |
| 1.5KCD10A                  | CD6271A                                  | 8.55                                             | 9.50                                               | 10.50  | 1                                                                                          | 14.5                                                     | 10                                                                | 0.73                                                             |
| 1.5KCD11                   | CD6272                                   | 8.92                                             | 9.90                                               | 12.10  | 1                                                                                          | 16.2                                                     | 5                                                                 | 0.75                                                             |
| 1.5KCD11A                  | CD6272A                                  | 9.40                                             | 10.50                                              | 11.60  | 1                                                                                          | 15.8                                                     | 5                                                                 | 0.75                                                             |
| 1.5KCD12                   | CD6273                                   | 9.72                                             | 10.80                                              | 13.20  | 1                                                                                          | 17.3                                                     | 5                                                                 | 0.78                                                             |
| 1.5KCD12A                  | CD6273A                                  | 10.20                                            | 11.40                                              | 12.60  | 1                                                                                          | 16.7                                                     | 5                                                                 | 0.78                                                             |
| 1.5KCD13                   | CD6274                                   | 10.50                                            | 11.70                                              | 14.30  | 1                                                                                          | 19.0                                                     | 1                                                                 | 0.81                                                             |
| 1.5KCD13A                  | CD6274A                                  | 11.10                                            | 12.40                                              | 13.70  | 1                                                                                          | 18.2                                                     | 5                                                                 | 0.81                                                             |
| 1.5KCD15                   | CD6275                                   | 12.10                                            | 13.50                                              | 16.50  | 1                                                                                          | 22.0                                                     | 5                                                                 | 0.84                                                             |
| 1.5KCD15A                  | CD6275A                                  | 12.90                                            | 14.40                                              | 17.80  | 1                                                                                          | 23.5                                                     | 5                                                                 | 0.86                                                             |
| 1.5KCD16A                  | CD6276                                   | 13.00                                            | 15.20                                              | 18.60  | 1                                                                                          | 27.0                                                     | 5                                                                 | 0.86                                                             |
| 1.5KCD18                   | CD6277                                   | 14.50                                            | 16.50                                              | 21.00  | 1                                                                                          | 26.5                                                     | 5                                                                 | 0.88                                                             |
| 1.5KCD18A                  | CD6277A                                  | 15.30                                            | 17.10                                              | 20.90  | 1                                                                                          | 25.2                                                     | 5                                                                 | 0.88                                                             |
| 1.5KCD20A                  | CD6278                                   | 16.70                                            | 18.00                                              | 22.00  | 1                                                                                          | 29.1                                                     | 5                                                                 | 0.90                                                             |
| 1.5KCD20A                  | CD6278A                                  | 17.10                                            | 18.00                                              | 21.00  | 1                                                                                          | 27.7                                                     | 5                                                                 | 0.90                                                             |
| 1.5KCD22                   | CD6279                                   | 17.80                                            | 19.60                                              | 24.20  | 1                                                                                          | 31.9                                                     | 5                                                                 | 0.92                                                             |
| 1.5KCD22A                  | CD6279A                                  | 18.80                                            | 20.90                                              | 23.10  | 1                                                                                          | 30.7                                                     | 5                                                                 | 0.94                                                             |
| 1.5KCD24                   | CD6280                                   | 19.40                                            | 21.90                                              | 26.40  | 1                                                                                          | 34.9                                                     | 5                                                                 | 0.94                                                             |
| 1.5KCD24A                  | CD6280A                                  | 20.50                                            | 22.80                                              | 25.20  | 1                                                                                          | 33.2                                                     | 5                                                                 | 0.94                                                             |
| 1.5KCD27                   | CD6281                                   | 21.80                                            | 24.30                                              | 29.70  | 1                                                                                          | 39.1                                                     | 5                                                                 | 0.96                                                             |
| 1.5KCD27A                  | CD6281A                                  | 23.10                                            | 25.10                                              | 28.40  | 1                                                                                          | 37.5                                                     | 5                                                                 | 0.96                                                             |
| 1.5KCD30                   | CD6282                                   | 24.30                                            | 27.00                                              | 33.00  | 1                                                                                          | 43.5                                                     | 5                                                                 | 0.98                                                             |
| 1.5KCD30A                  | CD6282A                                  | 25.60                                            | 28.00                                              | 31.50  | 1                                                                                          | 41.6                                                     | 5                                                                 | 0.98                                                             |
| 1.5KCD33                   | CD6283                                   | 26.80                                            | 29.70                                              | 36.30  | 1                                                                                          | 47.7                                                     | 5                                                                 | 0.99                                                             |
| 1.5KCD33A                  | CD6283A                                  | 28.20                                            | 31.40                                              | 34.70  | 1                                                                                          | 45.7                                                     | 5                                                                 | 0.99                                                             |
| 1.5KCD36                   | CD6284                                   | 28.10                                            | 32.40                                              | 39.80  | 1                                                                                          | 52.0                                                     | 5                                                                 | 0.99                                                             |
| 1.5KCD36A                  | CD6284A                                  | 30.80                                            | 34.20                                              | 37.80  | 1                                                                                          | 49.9                                                     | 5                                                                 | 0.99                                                             |
| 1.5KCD39                   | CD6285                                   | 31.80                                            | 35.30                                              | 43.00  | 1                                                                                          | 56.4                                                     | 5                                                                 | 1.00                                                             |
| 1.5KCD39A                  | CD6285A                                  | 33.30                                            | 37.10                                              | 41.00  | 1                                                                                          | 53.9                                                     | 5                                                                 | 1.00                                                             |
| 1.5KCD42                   | CD6286                                   | 34.80                                            | 38.70                                              | 47.30  | 1                                                                                          | 61.3                                                     | 5                                                                 | 1.01                                                             |
| 1.5KCD43A                  | CD6286A                                  | 36.80                                            | 40.90                                              | 45.20  | 1                                                                                          | 59.3                                                     | 5                                                                 | 1.01                                                             |
| 1.5KCD47                   | CD6287                                   | 38.10                                            | 42.30                                              | 51.70  | 1                                                                                          | 67.8                                                     | 5                                                                 | 1.01                                                             |
| 1.5KCD47A                  | CD6287A                                  | 40.20                                            | 44.70                                              | 49.40  | 1                                                                                          | 64.8                                                     | 5                                                                 | 1.02                                                             |
| 1.5KCD51                   | CD6288                                   | 41.30                                            | 45.80                                              | 56.10  | 1                                                                                          | 73.5                                                     | 5                                                                 | 1.04                                                             |
| 1.5KCD51A                  | CD6288A                                  | 43.80                                            | 48.50                                              | 53.60  | 1                                                                                          | 70.1                                                     | 5                                                                 | 1.04                                                             |
| 1.5KCD58                   | CD6289                                   | 45.40                                            | 50.40                                              | 61.80  | 1                                                                                          | 80.5                                                     | 5                                                                 | 1.03                                                             |
| 1.5KCD58A                  | CD6289A                                  | 47.80                                            | 52.20                                              | 58.80  | 1                                                                                          | 77.0                                                     | 5                                                                 | 1.03                                                             |
| 1.5KCD62                   | CD6290                                   | 50.20                                            | 55.80                                              | 68.20  | 1                                                                                          | 88.0                                                     | 5                                                                 | 1.04                                                             |
| 1.5KCD62A                  | CD6290A                                  | 53.00                                            | 58.90                                              | 65.10  | 1                                                                                          | 85.1                                                     | 5                                                                 | 1.04                                                             |
| 1.5KCD68                   | CD6291                                   | 55.10                                            | 61.20                                              | 74.80  | 1                                                                                          | 98.0                                                     | 5                                                                 | 1.04                                                             |
| 1.5KCD68A                  | CD6291A                                  | 58.10                                            | 64.60                                              | 71.40  | 1                                                                                          | 92.0                                                     | 5                                                                 | 1.04                                                             |
| 1.5KCD75                   | CD6292                                   | 60.70                                            | 67.50                                              | 82.00  | 1                                                                                          | 108.0                                                    | 5                                                                 | 1.05                                                             |
| 1.5KCD75A                  | CD6292A                                  | 64.10                                            | 71.30                                              | 78.80  | 1                                                                                          | 103.0                                                    | 5                                                                 | 1.05                                                             |
| 1.5KCD82                   | CD6293                                   | 66.40                                            | 73.80                                              | 90.20  | 1                                                                                          | 118.0                                                    | 5                                                                 | 1.05                                                             |
| 1.5KCD82A                  | CD6293A                                  | 70.10                                            | 77.80                                              | 86.10  | 1                                                                                          | 113.0                                                    | 5                                                                 | 1.05                                                             |
| 1.5KCD91                   | CD6294                                   | 73.70                                            | 81.90                                              | 100.00 | 1                                                                                          | 131.0                                                    | 5                                                                 | 1.06                                                             |
| 1.5KCD91A                  | CD6294A                                  | 77.80                                            | 86.50                                              | 95.50  | 1                                                                                          | 125.0                                                    | 5                                                                 | 1.06                                                             |
| 1.5KCD100                  | CD6295                                   | 81.00                                            | 90.30                                              | 110.00 | 1                                                                                          | 144.0                                                    | 5                                                                 | 1.06                                                             |
| 1.5KCD100A                 | CD6295A                                  | 85.50                                            | 95.00                                              | 105.00 | 1                                                                                          | 137.0                                                    | 5                                                                 | 1.06                                                             |
| 1.5KCD110                  | CD6296                                   | 86.70                                            | 96.80                                              | 121.00 | 1                                                                                          | 158.0                                                    | 5                                                                 | 1.07                                                             |
| 1.5KCD110A                 | CD6296A                                  | 94.00                                            | 105.00                                             | 118.00 | 1                                                                                          | 152.0                                                    | 5                                                                 | 1.07                                                             |
| 1.5KCD120                  | CD6297                                   | 97.20                                            | 108.00                                             | 132.00 | 1                                                                                          | 173.0                                                    | 5                                                                 | 1.07                                                             |
| 1.5KCD120A                 | CD6297A                                  | 102.00                                           | 114.00                                             | 126.00 | 1                                                                                          | 165.0                                                    | 5                                                                 | 1.07                                                             |
| 1.5KCD130                  | CD6298                                   | 105.00                                           | 117.00                                             | 143.00 | 1                                                                                          | 197.0                                                    | 5                                                                 | 1.08                                                             |
| 1.5KCD130A                 | CD6298A                                  | 111.00                                           | 124.00                                             | 137.00 | 1                                                                                          | 179.0                                                    | 5                                                                 | 1.08                                                             |
| 1.5KCD150                  | CD6299                                   | 121.00                                           | 135.00                                             | 165.00 | 1                                                                                          | 215.0                                                    | 5                                                                 | 1.08                                                             |
| 1.5KCD150A                 | CD6299A                                  | 128.00                                           | 143.00                                             | 158.00 | 1                                                                                          | 207.0                                                    | 5                                                                 | 1.08                                                             |
| 1.5KCD160                  | CD6300                                   | 130.00                                           | 144.00                                             | 178.00 | 1                                                                                          | 230.0                                                    | 5                                                                 | 1.08                                                             |
| 1.5KCD160A                 | CD6300A                                  | 136.00                                           | 152.00                                             | 169.00 | 1                                                                                          | 219.0                                                    | 5                                                                 | 1.08                                                             |
| 1.5KCD170                  | CD6301                                   | 136.00                                           | 153.00                                             | 187.00 | 1                                                                                          | 244.0                                                    | 5                                                                 | 1.08                                                             |
| 1.5KCD170A                 | CD6301A                                  | 145.00                                           | 162.00                                             | 179.00 | 1                                                                                          | 234.0                                                    | 5                                                                 | 1.08                                                             |
| 1.5KCD180                  | CD6302                                   | 146.00                                           | 162.00                                             | 198.00 | 1                                                                                          | 258.0                                                    | 5                                                                 | 1.08                                                             |
| 1.5KCD180A                 | CD6302A                                  | 154.00                                           | 171.00                                             | 189.00 | 1                                                                                          | 248.0                                                    | 5                                                                 | 1.08                                                             |
| 1.5KCD200                  | CD6303                                   | 162.00                                           | 180.00                                             | 220.00 | 1                                                                                          | 287.0                                                    | 5                                                                 | 1.08                                                             |
| 1.5KCD200A                 | CD6303A                                  | 171.00                                           | 190.00                                             | 210.00 | 1                                                                                          | 274.0                                                    | 5                                                                 | 1.08                                                             |

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

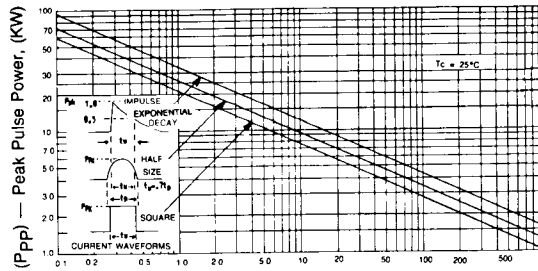
V<sub>(BR)</sub> = BREAKDOWN VOLTAGE

I<sub>T</sub> = TEST CURRENT

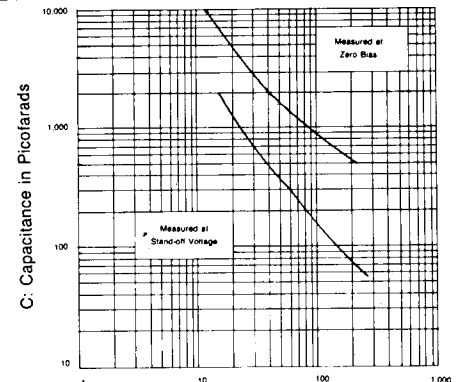
I<sub>D</sub> = REVERSE LEAKAGE

**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.

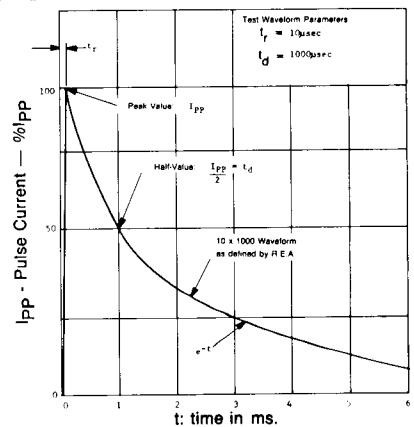
**NOTE 2** TAZ\* devices are tested to maximum peak pulse current (I<sub>PP</sub>) with clamping voltage monitored. This surge capability is one of the most significant electrical characteristics of the device and should be considered as part of customer quality inspections.



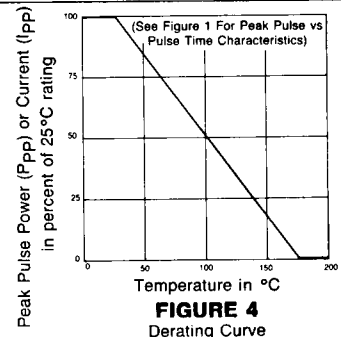
**FIGURE 1**  
Peak Pulse Power vs Pulse Time



**FIGURE 2**  
Typical Capacitance vs Breakdown Voltage



**FIGURE 3**  
Pulse Wave Form



**FIGURE 4**  
Derating Curve



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

**Телефон:** 8 (812) 309 58 32 (многоканальный)

**Факс:** 8 (812) 320-02-42

**Электронная почта:** [org@eplast1.ru](mailto:org@eplast1.ru)

**Адрес:** 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.