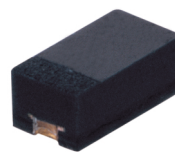


## CZRF52C2 Thru CZRF52C39

Voltage 2 to 39 Volts  
Power 200 mWatts

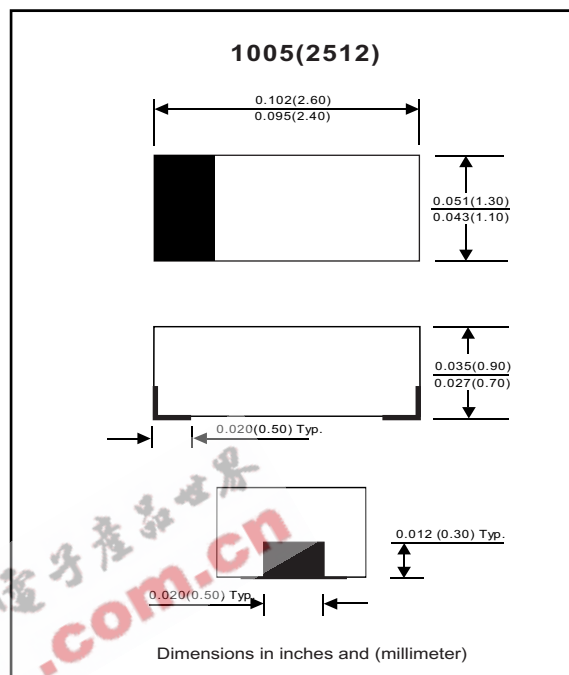


### Features

- 200mW Power Dissipation.
- High Voltages from 2 ~ 39 V.
- Designed for mounting on small surface.
- Extremely thin/leadless package.
- Pb free product.

### Mechanical data

- Case: 1005(2512)Standard package  
Molded plastic.
- Terminals: Gold plated, solderable per  
MIL-STD-750,method 2026.
- Polarity: Indicated by cathode band.
- Weight: 0.006 gram(approx.).



### Maximum Rating AND Electrical Characteristics

| Parameter                                                                                                 | Symbol    | Value       | Unit             |
|-----------------------------------------------------------------------------------------------------------|-----------|-------------|------------------|
| Maximum Forward Voltage Drop at $I_F = 10 \text{ mA}$                                                     | $V_F$     | 0.9         | V                |
| Maximum Power Dissipation at $25^\circ\text{C}$                                                           | $P_D$     | 200         | mW               |
| Forward current , surge peak<br>8.3 ms single half sine-wave superimposed<br>on rate load( JEDEC method ) | $I_{FSM}$ | 2.0         | A                |
| Operating Junction and Storage Temperature Range                                                          | $T_J$     | -55 to +125 | $^\circ\text{C}$ |

## Electrical Characteristics(Ta = 25°C)

| Part Number | Marking Code | Zener Voltage      |       |                     | Operating resistance |                     | Rising operating Resistance |                     | Reverse current |                    |
|-------------|--------------|--------------------|-------|---------------------|----------------------|---------------------|-----------------------------|---------------------|-----------------|--------------------|
|             |              | V <sub>Z</sub> (V) |       |                     | ZZT(Ohm)             |                     | ZZK(Ohm)                    |                     | IR(μA)          |                    |
|             |              | Min                | Max   | I <sub>Z</sub> (mA) | Max                  | I <sub>Z</sub> (mA) | Max                         | I <sub>Z</sub> (mA) | Max             | V <sub>R</sub> (V) |
| CZRF52C2    | Z0           | 1.90               | 2.10  | 5                   | 100                  | 5                   | 600                         | 1                   | 100             | 1                  |
| CZRF52C2V2  | Z1           | 2.09               | 2.31  | 5                   | 100                  | 5                   | 600                         | 1                   | 100             | 1                  |
| CZRF52C2V4  | Z2           | 2.28               | 2.52  | 5                   | 85                   | 5                   | 600                         | 1                   | 100             | 1                  |
| CZRF52C2V7  | Z3           | 2.57               | 2.84  | 5                   | 83                   | 5                   | 500                         | 1                   | 75              | 1                  |
| CZRF52C3    | Z4           | 2.85               | 3.15  | 5                   | 95                   | 5                   | 500                         | 1                   | 50              | 1                  |
| CZRF52C3V3  | Z5           | 3.14               | 3.47  | 5                   | 95                   | 5                   | 500                         | 1                   | 25              | 1                  |
| CZRF52C3V6  | Z6           | 3.42               | 3.78  | 5                   | 95                   | 5                   | 500                         | 1                   | 15              | 1                  |
| CZRF52C3V9  | Z7           | 3.71               | 4.10  | 5                   | 95                   | 5                   | 500                         | 1                   | 10              | 1                  |
| CZRF52C4V3  | Z8           | 4.09               | 4.52  | 5                   | 95                   | 5                   | 500                         | 1                   | 5               | 1                  |
| CZRF52C4V7  | Z9           | 4.47               | 4.94  | 5                   | 78                   | 5                   | 500                         | 1                   | 5               | 2                  |
| CZRF52C5V1  | ZA           | 4.85               | 5.36  | 5                   | 60                   | 5                   | 480                         | 1                   | 0.1             | 0.8                |
| CZRF52C5V6  | ZB           | 5.32               | 5.88  | 5                   | 40                   | 5                   | 400                         | 1                   | 0.1             | 1                  |
| CZRF52C6V2  | ZC           | 5.89               | 6.51  | 5                   | 10                   | 5                   | 200                         | 1                   | 0.1             | 2                  |
| CZRF52C6V8  | ZE           | 6.46               | 7.14  | 5                   | 8                    | 5                   | 150                         | 1                   | 0.1             | 3                  |
| CZRF52C7V5  | ZF           | 7.13               | 7.88  | 5                   | 7                    | 5                   | 50                          | 1                   | 0.1             | 5                  |
| CZRF52C8V2  | ZG           | 7.79               | 8.61  | 5                   | 7                    | 5                   | 50                          | 1                   | 0.1             | 6                  |
| CZRF52C9V1  | ZH           | 8.65               | 9.56  | 5                   | 10                   | 5                   | 50                          | 1                   | 0.1             | 7                  |
| CZRF52C10   | ZJ           | 9.50               | 10.50 | 5                   | 15                   | 5                   | 70                          | 1                   | 0.1             | 7.5                |
| CZRF52C11   | ZK           | 10.45              | 11.55 | 5                   | 20                   | 5                   | 70                          | 1                   | 0.1             | 8.5                |
| CZRF52C12   | ZM           | 11.40              | 12.60 | 5                   | 20                   | 5                   | 90                          | 1                   | 0.1             | 9                  |
| CZRF52C13   | ZN           | 12.35              | 13.65 | 5                   | 25                   | 5                   | 110                         | 1                   | 0.1             | 10                 |
| CZRF52C15   | ZP           | 14.25              | 15.75 | 5                   | 30                   | 5                   | 110                         | 1                   | 0.1             | 11                 |
| CZRF52C16   | ZQ           | 15.20              | 16.80 | 5                   | 40                   | 5                   | 170                         | 1                   | 0.1             | 12                 |
| CZRF52C18   | ZR           | 17.10              | 18.90 | 5                   | 50                   | 5                   | 170                         | 1                   | 0.1             | 14                 |
| CZRF52C20   | ZS           | 19.00              | 21.00 | 5                   | 50                   | 5                   | 220                         | 1                   | 0.1             | 15                 |
| CZRF52C22   | ZT           | 20.90              | 23.10 | 5                   | 55                   | 5                   | 220                         | 1                   | 0.1             | 17                 |
| CZRF52C24   | ZU           | 22.80              | 25.20 | 5                   | 80                   | 5                   | 220                         | 1                   | 0.1             | 18                 |
| CZRF52C27   | ZV           | 25.65              | 28.35 | 5                   | 80                   | 5                   | 250                         | 1                   | 0.1             | 20                 |
| CZRF52C30   | ZW           | 28.50              | 31.50 | 5                   | 80                   | 5                   | 250                         | 1                   | 0.1             | 23                 |
| CZRF52C33   | ZX           | 31.35              | 34.65 | 5                   | 80                   | 5                   | 250                         | 1                   | 0.1             | 25                 |
| CZRF52C36   | ZY           | 34.20              | 37.80 | 5                   | 90                   | 5                   | 250                         | 1                   | 0.1             | 27                 |
| CZRF52C39   | ZZ           | 37.05              | 40.95 | 5                   | 90                   | 5                   | 300                         | 1                   | 0.1             | 29                 |

## RATING AND CHARACTERISTIC CURVES (CZRF52C2 Thru CZRF52C39)

Fig.1 TEMPERATURE COEFFICIENTS

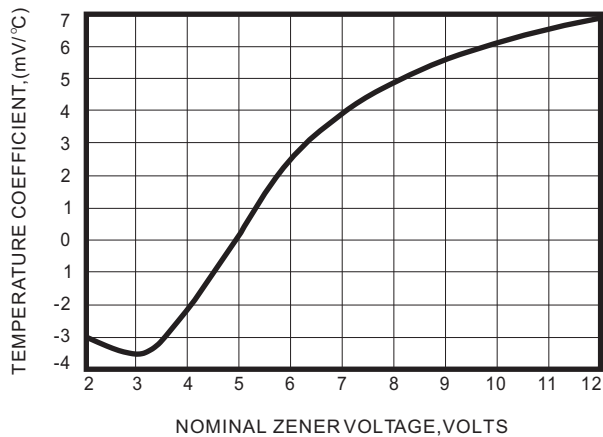


Fig.2 TEMPERATURE COEFFICIENTS

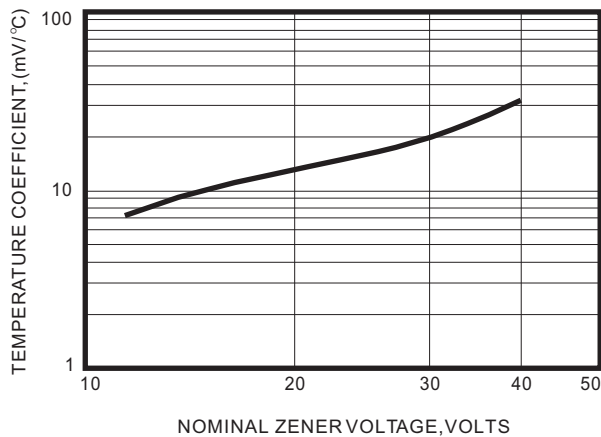


Fig.3 EFFECT OF ZENER VOLTAGE ON ZENER IMPEDANCE

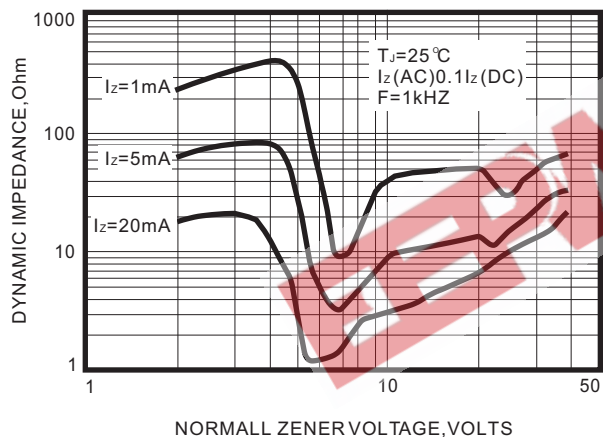


Fig.4 TYPICAL FORWARD VOLTAGE

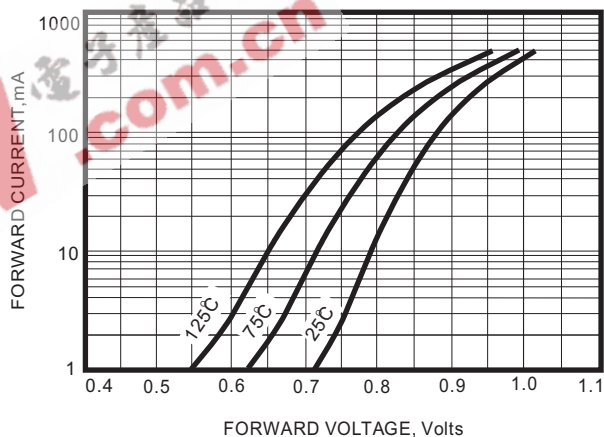


Fig.5 TYPICAL LEAKAGE CURRENT

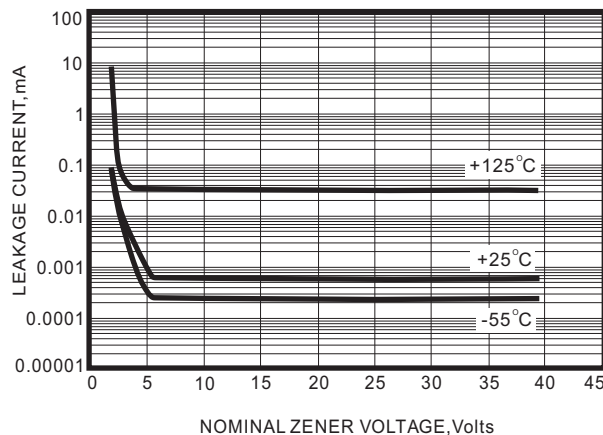
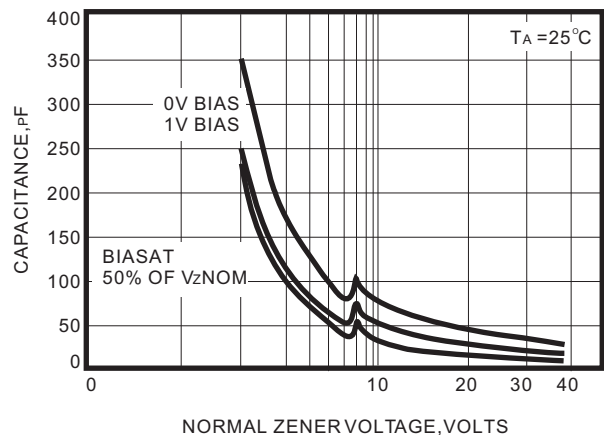


Fig.6 TYPICAL CAPACITANCE



## RATING AND CHARACTERISTIC CURVES (CZRF52C2 Thru CZRF52C39)

Fig.7 ZENER VOLTAGE VERSUS ZENER CURRENT

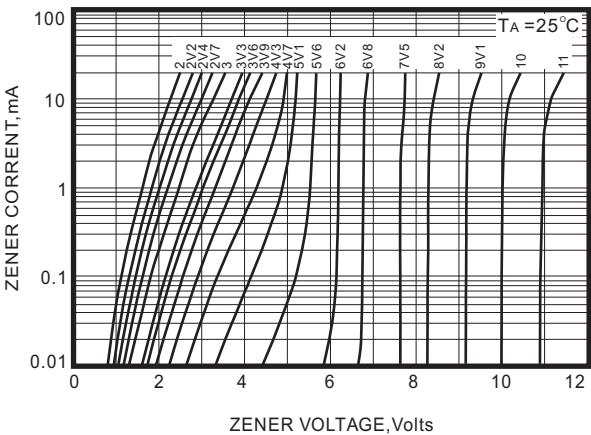


Fig.8 ZENER VOLTAGE VERSUS ZENER CURRENT

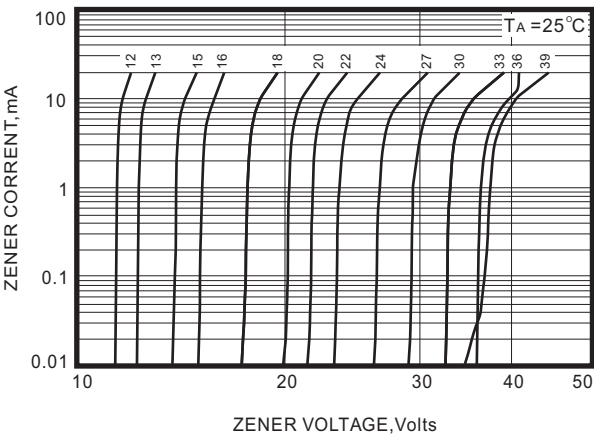


Fig.9 STEADY STATE POWER DERATING

