

1W Zener Diode PTZ Series

●Applications

- 1)Voltage regulation and voltage limiting
- 2)Voltage surge absorption

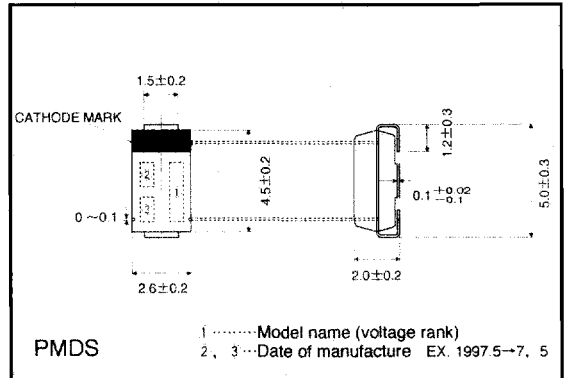
●Features

- 1)Designed for mounting on small surface areas (PMDS)
- 2)1W of power can be obtained despite compact size
- 3)High surge withstand level

●Construction

Silicon epitaxial planar

●External dimensions (Units: mm)



●Absolute maximum ratings (Ta=25°C)

| Parameter | Symbol | Limits | Unit |
|----------------------|------------------|---------|------|
| Power dissipation * | P | 1 | W |
| Junction temperature | T _j | 150 | °C |
| Storage temperature | T _{stg} | -55~150 | °C |

* Mounting density of other power components should be taken into consideration when using these products.

●Electrical characteristics (Ta=25°C)

| Type | Zener voltage subdivision | | | | Operating resistance | | Reverse current | |
|---------|---------------------------|--------------------|--------|---------------------|----------------------|---------------------|---------------------|--------------------|
| | Rank | V _Z (V) | | I _Z (mA) | Z _Z (Ω) | | I _R (μA) | |
| | | Min. | Max. | | Max. | I _Z (mA) | Max. | V _R (V) |
| PTZ 3.6 | A | 3.400 | 3.800 | 40 | 15 | 40 | 60 | 1.0 |
| | B | 3.600 | 4.000 | | | | | |
| PTZ 3.9 | A | 3.700 | 4.100 | 40 | 15 | 40 | 40 | 1.0 |
| | B | 3.900 | 4.400 | | | | | |
| PTZ 4.3 | A | 4.000 | 4.500 | 40 | 15 | 40 | 20 | 1.0 |
| | B | 4.300 | 4.800 | | | | | |
| PTZ 4.7 | A | 4.400 | 4.900 | 40 | 10 | 40 | 20 | 1.0 |
| | B | 4.700 | 5.200 | | | | | |
| PTZ 5.1 | A | 4.800 | 5.400 | 40 | 8 | 40 | 20 | 1.5 |
| | B | 5.100 | 5.700 | | | | | |
| PTZ 5.6 | A | 5.300 | 6.000 | 40 | 8 | 40 | 20 | 1.5 |
| | B | 5.600 | 6.300 | | | | | |
| PTZ 6.2 | A | 5.800 | 6.600 | 40 | 6 | 40 | 20 | 3.0 |
| | B | 6.200 | 7.000 | | | | | |
| PTZ 6.8 | A | 6.400 | 7.200 | 40 | 6 | 40 | 20 | 3.5 |
| | B | 6.800 | 7.700 | | | | | |
| PTZ 7.5 | A | 7.000 | 7.900 | 40 | 4 | 40 | 20 | 4.0 |
| | B | 7.500 | 8.400 | | | | | |
| PTZ 8.2 | A | 7.700 | 8.700 | 40 | 4 | 40 | 20 | 5.0 |
| | B | 8.200 | 9.300 | | | | | |
| PTZ 9.1 | A | 8.500 | 9.600 | 40 | 6 | 40 | 20 | 6.0 |
| | B | 9.100 | 10.200 | | | | | |
| PTZ 10 | A | 9.400 | 10.600 | 40 | 6 | 40 | 10 | 7.0 |
| | B | 10.000 | 11.200 | | | | | |
| PTZ 11 | A | 10.400 | 11.600 | 20 | 8 | 20 | 10 | 8.0 |
| | B | 11.000 | 12.300 | | | | | |
| PTZ 12 | A | 11.400 | 12.600 | 20 | 8 | 20 | 10 | 9.0 |
| | B | 12.000 | 13.500 | | | | | |
| PTZ 13 | A | 12.400 | 14.100 | 20 | 10 | 20 | 10 | 10.0 |
| | B | 13.300 | 15.000 | | | | | |
| PTZ 15 | A | 13.800 | 15.600 | 20 | 10 | 20 | 10 | 11.0 |
| | B | 14.700 | 16.500 | | | | | |
| PTZ 16 | A | 15.300 | 17.100 | 20 | 12 | 20 | 10 | 12.0 |
| | B | 16.200 | 18.300 | | | | | |
| PTZ 18 | A | 16.800 | 19.100 | 20 | 12 | 20 | 10 | 13.0 |
| | B | 18.000 | 20.300 | | | | | |
| PTZ 20 | A | 18.800 | 21.200 | 20 | 14 | 20 | 10 | 15.0 |
| | B | 20.000 | 22.400 | | | | | |
| PTZ 22 | A | 20.800 | 23.300 | 10 | 14 | 10 | 10 | 17.0 |
| | B | 22.000 | 24.500 | | | | | |

(Continued on next page)

| Type | Zener voltage subdivision | | | Operating resistance | | Reverse current | | |
|--------|---------------------------|--------|--------|----------------------|------|---------------------------|------|--------------------|
| | Rank | Vz (V) | | Zz (Ω) | | I _R (μ A) | | |
| | | Min. | Max. | I _z (mA) | Max. | I _z (mA) | Max. | V _R (V) |
| PTZ 24 | A | 22.800 | 25.600 | 10 | 16 | 10 | 10 | 19.0 |
| | B | 24.000 | 27.600 | | | | | |
| PTZ 27 | A | 25.100 | 28.900 | 10 | 16 | 10 | 10 | 21.0 |
| | B | 27.000 | 30.800 | | | | | |
| PTZ 30 | A | 28.000 | 32.000 | 10 | 18 | 10 | 10 | 23.0 |
| | B | 30.000 | 34.000 | | | | | |
| PTZ 33 | A | 31.000 | 35.000 | 10 | 18 | 10 | 10 | 25.0 |
| | B | 33.000 | 37.000 | | | | | |
| PTZ 36 | A | 34.000 | 38.000 | 10 | 20 | 10 | 10 | 27.0 |
| | B | 36.000 | 40.000 | | | | | |
| PTZ 39 | A | 37.000 | 41.000 | 10 | 50 | 10 | 10 | 30.0 |
| PTZ 43 | A | 40.000 | 46.000 | 10 | 50 | 10 | 5 | 33.0 |

- Notes) 1. The Zener voltage is measured 40 ms after power is supplied.
 2. The operating resistances (Zz, Zzk) are measured by superimposing a minute alternating current on the regulated current (Iz).
 3. For the Zener voltage subdivisions, the free ranks (A, B, or C) or recommended when ordering.

●Electrical characteristic curves (Ta=25°C)

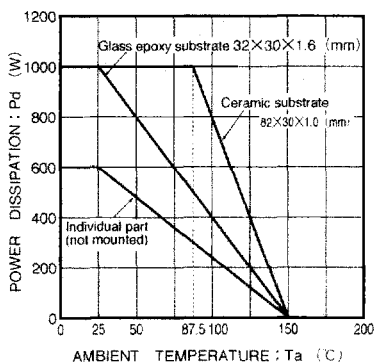


Fig. 1 Derating curve

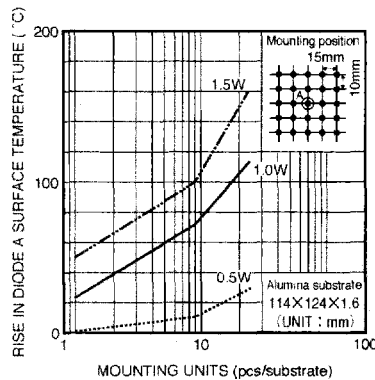


Fig. 2 Rise in surface temperature

If this product is being mounted on a substrate, the density with other power components should be taken into consideration.

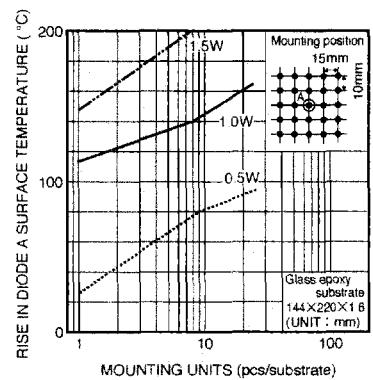


Fig. 3 Rise in surface temperature

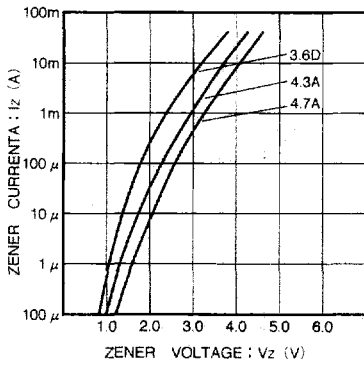


Fig. 4 PTZ2.0~PTZ4.7
Zener characteristics

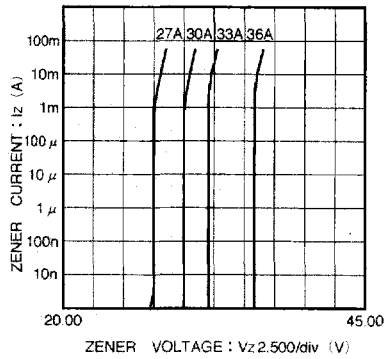


Fig. 5 PTZ27~PTZ36
Zener characteristics

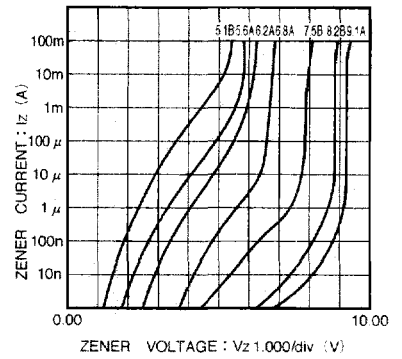


Fig. 6 PTZ5.1~PTZ9.1
Zener characteristics

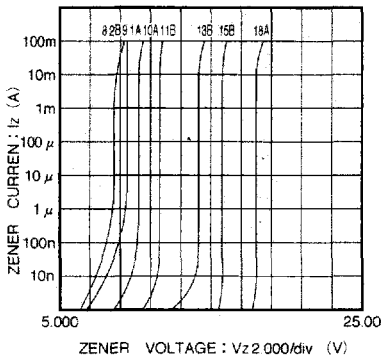


Fig. 7 PTZ8.2~PTZ18
Zener characteristics

Zener diodes

Zener diodes