

# Zener diode

## PTZ Series

### ●Applications

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

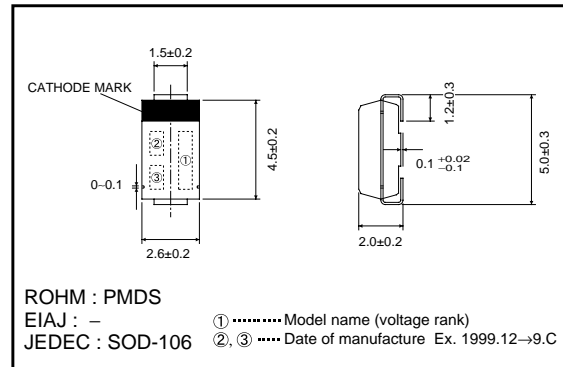
### ●Features

- 1) Small surface mounting type. (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)

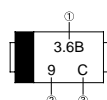
Parameter	Symbol	Limits	Unit
Power dissipation *	P	1	W
Junction temperature	T <sub>j</sub>	150	°C
Storage temperature	T <sub>stg</sub>	-55~+150	°C

\* Mounting density of other power components should be taken into consideration when laying out the pattern.

### ●Marking (Voltage rank)

Type No.	①	Type No.	①	Type No.	①
PTZ3.6B	3.6 B	PTZ8.2B	8.2 B	PTZ20B	20 B
PTZ3.9B	3.9 B	PTZ9.1B	9.1 B	PTZ22B	22 B
PTZ4.3B	4.3 B	PTZ10B	10 B	PTZ24B	24 B
PTZ4.7B	4.7 B	PTZ11B	11 B	PTZ27B	27 B
PTZ5.1B	5.1 B	PTZ12B	12 B	PTZ30B	30 B
PTZ5.6B	5.6 B	PTZ13B	13 B	PTZ33B	33 B
PTZ6.2B	6.2 B	PTZ15B	15 B	PTZ36B	36 B
PTZ6.8B	6.8 B	PTZ16B	16 B	-	-
PTZ7.5B	7.5 B	PTZ18B	18 B	-	-

(Ex.) PTZ3.6B



- ① Zener voltage category Ex.) PTZ3.6B  
② Year of manufacture: last digit of Western calendar 1999  
③ Month of manufacture Dec.

Month	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Symbol	1	2	3	4	5	6	7	8	9	O	A	C

## Diodes

## ●Electrical characteristics (Ta=25°C)

Type	Zener voltage subdivision			Operating resistance		Reverse current	
	V <sub>Z</sub> (V)			Z <sub>Z</sub> (Ω)		I <sub>R</sub> (μA)	
	Min.	Max.	I <sub>Z</sub> (mA)	Max.	I <sub>Z</sub> (mA)	Max.	V <sub>R</sub> (V)
PTZ 3.6B	3.600	4.000	40	15	40	20	1.0
PTZ 3.9B	3.900	4.400	40	15	40	20	1.0
PTZ 4.3B	4.300	4.800	40	15	40	20	1.0
PTZ 4.7B	4.700	5.200	40	10	40	20	1.0
PTZ 5.1B	5.100	5.700	40	8	40	20	1.0
PTZ 5.6B	5.600	6.300	40	8	40	20	1.5
PTZ 6.2B	6.200	7.000	40	6	40	20	3.0
PTZ 6.8B	6.800	7.700	40	6	40	20	3.5
PTZ 7.5B	7.500	8.400	40	4	40	20	4.0
PTZ 8.2B	8.200	9.300	40	4	40	20	5.0
PTZ 9.1B	9.100	10.200	40	6	40	20	6.0
PTZ 10B	10.000	11.200	40	6	40	10	7.0
PTZ 11B	11.000	12.300	20	8	20	10	8.0
PTZ 12B	12.000	13.500	20	8	20	10	9.0
PTZ 13B	13.300	15.000	20	10	20	10	10.0
PTZ 15B	14.700	16.500	20	10	20	10	11.0
PTZ 16B	16.200	18.300	20	12	20	10	12.0
PTZ 18B	18.000	20.300	20	12	20	10	13.0
PTZ 20B	20.000	22.400	20	14	20	10	15.0
PTZ 22B	22.000	24.500	10	14	10	10	17.0
PTZ 24B	24.000	27.600	10	16	10	10	19.0
PTZ 27B	27.000	30.800	10	16	10	10	21.0
PTZ 30B	30.000	34.000	10	18	10	10	23.0
PTZ 33B	33.000	37.000	10	18	10	10	25.0
PTZ 36B	36.000	40.000	10	20	10	10	27.0

Notes) 1. The Zener voltage is measured 40ms after power is supplied.

2. The operating resistances (Z<sub>Z</sub>, Z<sub>k</sub>) are measured by superimposing a minute alternating current on the regulated current (I<sub>Z</sub>).

Diodes

●Electrical characteristic curves (Ta=25°C)

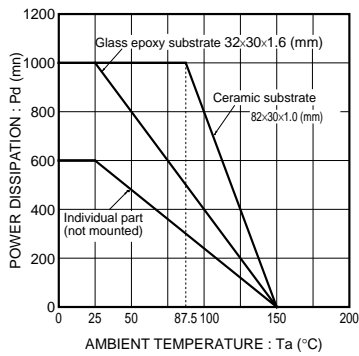


Fig.1 Derating curve

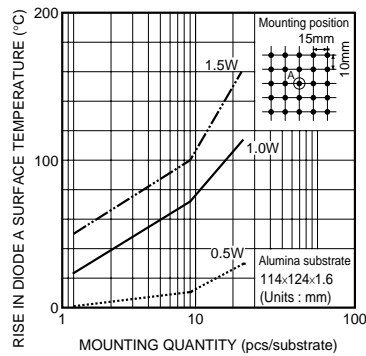


Fig.2 Rise in surface temperature

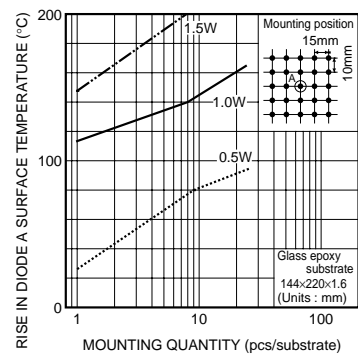


Fig.3 Rise in surface temperature

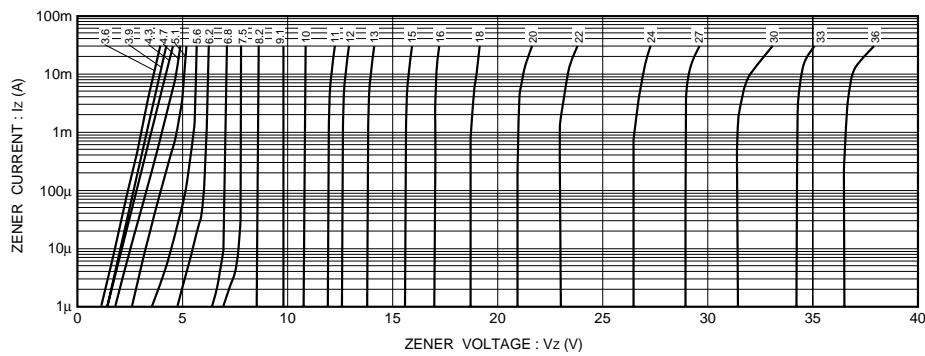


Fig.4 Zener voltage characteristics

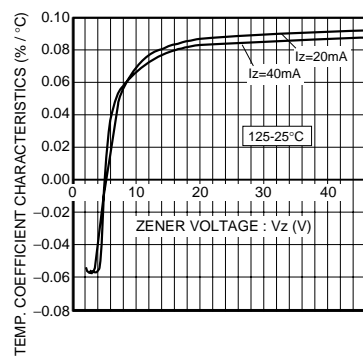


Fig.5 Zener voltage - temp. coefficient characteristics