

## SZ503J - SZ50D0

**$V_Z$  : 3.9 - 200 Volts**  
 **$P_D$  : 3 Watts**

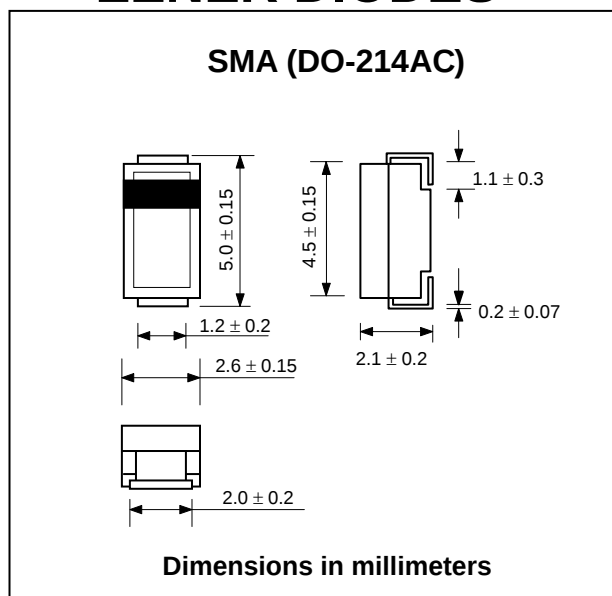
### FEATURES :

- \* Complete Voltage Range 3.9 to 200 Volts
- \* High peak reverse power dissipation
- \* High reliability
- \* Low leakage current
- \* **Pb / RoHS Free**

### MECHANICAL DATA

- \* Case : SMA (DO-214AC) Molded plastic
- \* Epoxy : UL94V-O rate flame retardant
- \* Lead : Lead formed for Surface mount
- \* Polarity : Color band denotes cathode end
- \* Mounting position : Any
- \* Weight : 0.064 gram

## SURFACE MOUNT SILICON ZENER DIODES



### MAXIMUM RATINGS

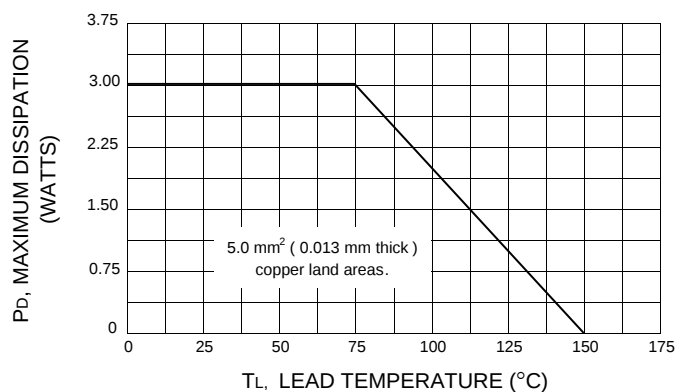
Rating at 25 °C ambient temperature unless otherwise specified

| Rating                                               | Symbol | Value         | Unit |
|------------------------------------------------------|--------|---------------|------|
| DC Power Dissipation at $T_L = 75\text{ °C}$ (Note1) | $P_D$  | 3.0           | W    |
| Maximum Forward Voltage at $I_F = 200\text{ mA}$     | $V_F$  | 1.5           | V    |
| Junction Temperature Range                           | $T_J$  | - 55 to + 150 | °C   |
| Storage Temperature Range                            | $T_S$  | - 55 to + 150 | °C   |

#### Note :

(1)  $T_L$  = Lead temperature at  $5.0\text{ mm}^2$  ( 0.013 mm thick ) copper land areas.

**Fig. 1 POWER TEMPERATURE DERATING CURVE**



## ELECTRICAL CHARACTERISTICS

Rating at 25 °C ambient temperature unless otherwise specified

| TYPE   | Nominal Zener Voltage            |                 | Maximum Zener Impedance           |                                   |                 | Maximum Reverse Leakage Current |       | Maximum DC Zener Current |
|--------|----------------------------------|-----------------|-----------------------------------|-----------------------------------|-----------------|---------------------------------|-------|--------------------------|
|        | V <sub>Z</sub> @ I <sub>ZT</sub> | I <sub>ZT</sub> | Z <sub>ZT</sub> @ I <sub>ZT</sub> | Z <sub>ZK</sub> @ I <sub>ZK</sub> | I <sub>ZK</sub> | I <sub>R</sub> @ V <sub>R</sub> |       | I <sub>ZM</sub>          |
|        | (V)                              | (mA)            | (Ω)                               | (Ω)                               | (mA)            | (μA)                            | (V)   | (mA)                     |
| SZ503J | 3.9                              | 192             | 4.5                               | 400                               | 1.0             | 80                              | 1.0   | 630                      |
| SZ504D | 4.3                              | 174             | 4.5                               | 400                               | 1.0             | 50                              | 1.0   | 590                      |
| SZ504H | 4.7                              | 160             | 4.0                               | 500                               | 1.0             | 50                              | 1.0   | 550                      |
| SZ505B | 5.1                              | 147             | 3.5                               | 550                               | 1.0             | 50                              | 1.0   | 520                      |
| SZ505G | 5.6                              | 134             | 2.5                               | 600                               | 1.0             | 50                              | 2.0   | 480                      |
| SZ506C | 6.2                              | 121             | 1.5                               | 700                               | 1.0             | 50                              | 3.0   | 435                      |
| SZ506I | 6.8                              | 110             | 2.0                               | 700                               | 1.0             | 50                              | 4.0   | 393                      |
| SZ507F | 7.5                              | 100             | 2.0                               | 700                               | 0.5             | 50                              | 5.0   | 360                      |
| SZ508C | 8.2                              | 91              | 2.3                               | 700                               | 0.5             | 50                              | 6.0   | 330                      |
| SZ509B | 9.1                              | 82              | 2.5                               | 700                               | 0.5             | 50                              | 7.0   | 297                      |
| SZ5010 | 10                               | 75              | 3.5                               | 700                               | 0.3             | 50                              | 7.6   | 270                      |
| SZ5011 | 11                               | 68              | 4.0                               | 700                               | 0.25            | 50                              | 8.4   | 225                      |
| SZ5012 | 12                               | 63              | 4.5                               | 700                               | 0.25            | 1.0                             | 9.1   | 246                      |
| SZ5013 | 13                               | 58              | 4.5                               | 700                               | 0.25            | 0.5                             | 9.1   | 208                      |
| SZ5014 | 14                               | 53              | 5.0                               | 700                               | 0.25            | 0.5                             | 10.6  | 193                      |
| SZ5015 | 15                               | 50              | 5.5                               | 700                               | 0.25            | 0.5                             | 11.4  | 180                      |
| SZ5016 | 16                               | 47              | 5.5                               | 700                               | 0.25            | 0.5                             | 12.2  | 169                      |
| SZ5017 | 17                               | 44              | 6.0                               | 750                               | 0.25            | 0.5                             | 13.0  | 159                      |
| SZ5018 | 18                               | 42              | 6.0                               | 750                               | 0.25            | 0.5                             | 13.7  | 150                      |
| SZ5019 | 19                               | 40              | 7.0                               | 750                               | 0.25            | 0.5                             | 14.4  | 142                      |
| SZ5020 | 20                               | 37              | 7.0                               | 750                               | 0.25            | 0.5                             | 15.2  | 135                      |
| SZ5022 | 22                               | 34              | 8.0                               | 750                               | 0.25            | 0.5                             | 16.7  | 123                      |
| SZ5024 | 24                               | 31              | 9.0                               | 750                               | 0.25            | 0.5                             | 18.2  | 112                      |
| SZ5027 | 27                               | 28              | 10                                | 750                               | 0.25            | 0.5                             | 20.6  | 100                      |
| SZ5028 | 28                               | 27              | 12                                | 750                               | 0.25            | 0.5                             | 21.0  | 96                       |
| SZ5030 | 30                               | 25              | 16                                | 1000                              | 0.25            | 0.5                             | 22.5  | 90                       |
| SZ5033 | 33                               | 23              | 20                                | 1000                              | 0.25            | 0.5                             | 25.1  | 82                       |
| SZ5036 | 36                               | 21              | 22                                | 1000                              | 0.25            | 0.5                             | 27.4  | 75                       |
| SZ5039 | 39                               | 19              | 28                                | 1000                              | 0.25            | 0.5                             | 29.7  | 69                       |
| SZ5043 | 43                               | 17              | 33                                | 1500                              | 0.25            | 0.5                             | 32.7  | 63                       |
| SZ5047 | 47                               | 16              | 38                                | 1500                              | 0.25            | 0.5                             | 35.6  | 57                       |
| SZ5051 | 51                               | 15              | 45                                | 1500                              | 0.25            | 0.5                             | 38.8  | 53                       |
| SZ5056 | 56                               | 13              | 50                                | 2000                              | 0.25            | 0.5                             | 42.6  | 48                       |
| SZ5062 | 62                               | 12              | 55                                | 2000                              | 0.25            | 0.5                             | 47.1  | 44                       |
| SZ5068 | 68                               | 11              | 70                                | 2000                              | 0.25            | 0.5                             | 51.7  | 40                       |
| SZ5075 | 75                               | 10              | 85                                | 2000                              | 0.25            | 0.5                             | 56.0  | 36                       |
| SZ5082 | 82                               | 9.1             | 95                                | 3000                              | 0.25            | 0.5                             | 62.2  | 33                       |
| SZ5091 | 91                               | 8.2             | 115                               | 3000                              | 0.25            | 0.5                             | 69.2  | 30                       |
| SZ50B0 | 100                              | 7.5             | 160                               | 3000                              | 0.25            | 0.5                             | 76.0  | 27                       |
| SZ50B1 | 110                              | 6.8             | 225                               | 4000                              | 0.25            | 0.5                             | 83.6  | 25                       |
| SZ50B2 | 120                              | 6.3             | 300                               | 4500                              | 0.25            | 0.5                             | 91.2  | 22                       |
| SZ50B3 | 130                              | 5.8             | 375                               | 5000                              | 0.25            | 0.5                             | 98.8  | 21                       |
| SZ50B4 | 140                              | 5.3             | 475                               | 5000                              | 0.25            | 0.5                             | 106.4 | 19                       |
| SZ50B5 | 150                              | 5.0             | 550                               | 6000                              | 0.25            | 0.5                             | 114.0 | 18                       |
| SZ50B6 | 160                              | 4.7             | 625                               | 6500                              | 0.25            | 0.5                             | 121.6 | 17                       |
| SZ50B7 | 170                              | 4.4             | 650                               | 7000                              | 0.25            | 0.5                             | 130.4 | 16                       |
| SZ50B8 | 180                              | 4.2             | 700                               | 7000                              | 0.25            | 0.5                             | 136.8 | 15                       |
| SZ50B9 | 190                              | 4.0             | 800                               | 8000                              | 0.25            | 0.5                             | 144.8 | 14                       |
| SZ50D0 | 200                              | 3.7             | 875                               | 8000                              | 0.25            | 0.5                             | 152.0 | 13                       |

Note :

- ( 1 ) The type number listed have a standard tolerance on the nominal zener voltage of  $\pm 10\%$ , altered the fourth number of type from " 0 " for  $\pm 10\%$  tolerance to be " 5 " for  $\pm 5\%$  tolerance.
- ( 2 ) " SZ " will be omitted in marking on the diode.