

# SZ452H - SZ45D0

# SURFACE MOUNT SILICON ZENER DIODES

**V<sub>Z</sub> : 2.7 - 200 Volts**

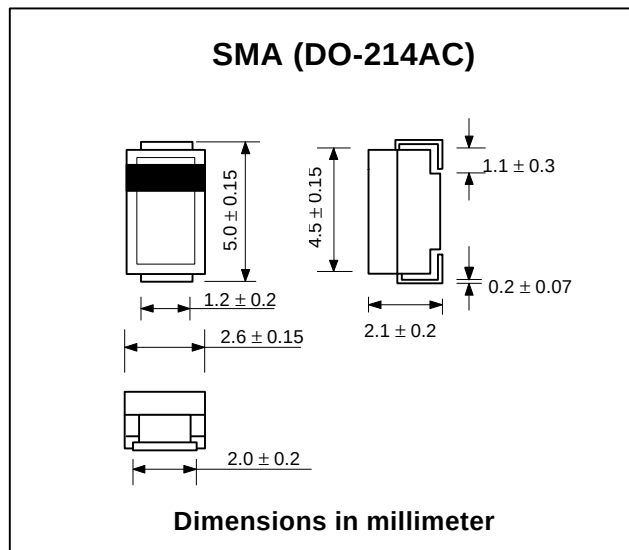
**P<sub>D</sub> : 2 Watts**

## FEATURES :

- \* Complete Voltage Range 2.7 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 grams



## MAXIMUM RATINGS

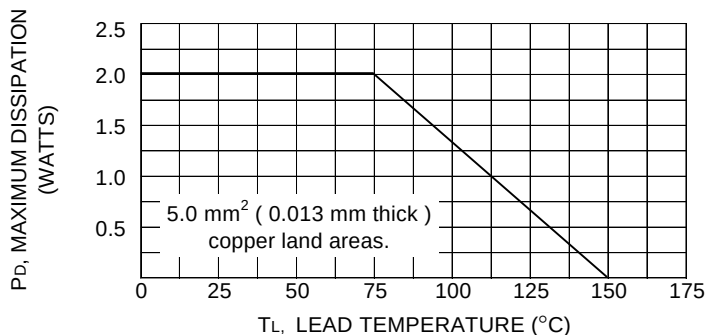
Rating at 25 °C ambient temperature unless otherwise specified

| Rating                                                 | Symbol         | Value         | Unit |
|--------------------------------------------------------|----------------|---------------|------|
| DC Power Dissipation at T <sub>L</sub> = 75 °C (Note1) | P <sub>D</sub> | 2.0           | W    |
| Maximum Forward Voltage at I <sub>F</sub> = 200 mA     | V <sub>F</sub> | 1.2           | V    |
| Junction Temperature Range                             | T <sub>J</sub> | - 55 to + 150 | °C   |
| Storage Temperature Range                              | T <sub>S</sub> | - 55 to + 150 | °C   |

### Note :

- (1) T<sub>L</sub> = Lead temperature at 5.0 mm<sup>2</sup> ( 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 |
|--------|-----------------------|------|-------------------------|-----------|------|---------------------------------|-------|--------------------------|
|        | Vz @ IzT              | IzT  | Zzt @ IzT               | Zzk @ IzK | IzK  | IR @ VR                         |       | IzM                      |
|        | (V)                   | (mA) | (Ω)                     | (Ω)       | (mA) | (μA)                            | (V)   | (mA)                     |
| SZ452H | 2.7                   | 80   | 10                      | 400       | 1.0  | 100                             | 1.0   | 660                      |
| SZ453A | 3.0                   | 160  | 8.0                     | 400       | 1.0  | 100                             | 1.0   | 600                      |
| SZ453D | 3.3                   | 145  | 8.0                     | 400       | 1.0  | 80                              | 1.0   | 545                      |
| SZ453G | 3.6                   | 139  | 5.0                     | 400       | 1.0  | 80                              | 1.0   | 504                      |
| SZ453J | 3.9                   | 128  | 5.0                     | 400       | 1.0  | 50                              | 1.0   | 468                      |
| SZ454D | 4.3                   | 116  | 4.5                     | 400       | 1.0  | 50                              | 1.0   | 434                      |
| SZ454H | 4.7                   | 106  | 4.5                     | 550       | 1.0  | 50                              | 1.0   | 386                      |
| SZ455B | 5.1                   | 98.0 | 3.5                     | 600       | 1.0  | 50                              | 1.0   | 356                      |
| SZ455G | 5.6                   | 89.5 | 2.5                     | 500       | 1.0  | 50                              | 2.0   | 324                      |
| SZ456C | 6.2                   | 80.5 | 1.5                     | 700       | 1.0  | 50                              | 3.0   | 292                      |
| SZ456I | 6.8                   | 73.5 | 2.0                     | 700       | 1.0  | 50                              | 4.0   | 266                      |
| SZ457F | 7.5                   | 66.5 | 2.0                     | 700       | 0.5  | 50                              | 5.0   | 242                      |
| SZ458C | 8.2                   | 61.0 | 2.3                     | 700       | 0.5  | 50                              | 6.0   | 220                      |
| SZ459B | 9.1                   | 55.0 | 2.5                     | 700       | 0.5  | 50                              | 7.0   | 200                      |
| SZ4510 | 10                    | 50.0 | 3.5                     | 700       | 0.25 | 50                              | 7.6   | 182                      |
| SZ4511 | 11                    | 45.5 | 4.0                     | 700       | 0.25 | 50                              | 8.4   | 166                      |
| SZ4512 | 12                    | 41.5 | 4.5                     | 700       | 0.25 | 1.0                             | 9.1   | 152                      |
| SZ4513 | 13                    | 38.5 | 5.0                     | 700       | 0.25 | 0.5                             | 9.9   | 138                      |
| SZ4514 | 14                    | 35.7 | 5.5                     | 700       | 0.25 | 0.5                             | 10.6  | 130                      |
| SZ4515 | 15                    | 33.4 | 7.0                     | 700       | 0.25 | 0.5                             | 11.4  | 122                      |
| SZ4516 | 16                    | 31.2 | 8.0                     | 700       | 0.25 | 0.5                             | 12.2  | 114                      |
| SZ4517 | 17                    | 29.4 | 9.0                     | 750       | 0.25 | 0.5                             | 13.0  | 107                      |
| SZ4518 | 18                    | 27.8 | 10                      | 750       | 0.25 | 0.5                             | 13.7  | 100                      |
| SZ4519 | 19                    | 26.3 | 11                      | 750       | 0.25 | 0.5                             | 14.4  | 95                       |
| SZ4520 | 20                    | 25.0 | 11                      | 750       | 0.25 | 0.5                             | 15.2  | 90                       |
| SZ4522 | 22                    | 22.8 | 12                      | 750       | 0.25 | 0.5                             | 16.7  | 82                       |
| SZ4524 | 24                    | 20.8 | 13                      | 750       | 0.25 | 0.5                             | 18.2  | 76                       |
| SZ4527 | 27                    | 18.5 | 18                      | 750       | 0.25 | 0.5                             | 20.6  | 68                       |
| SZ4530 | 30                    | 16.6 | 20                      | 1000      | 0.25 | 0.5                             | 22.5  | 60                       |
| SZ4533 | 33                    | 15.1 | 23                      | 1000      | 0.25 | 0.5                             | 25.1  | 55                       |
| SZ4536 | 36                    | 13.9 | 25                      | 1000      | 0.25 | 0.5                             | 27.4  | 50                       |
| SZ4539 | 39                    | 12.8 | 30                      | 1000      | 0.25 | 0.5                             | 29.7  | 47                       |
| SZ4543 | 43                    | 11.6 | 35                      | 1500      | 0.25 | 0.5                             | 32.7  | 43                       |
| SZ4547 | 47                    | 10.6 | 40                      | 1500      | 0.25 | 0.5                             | 35.8  | 39                       |
| SZ4551 | 51                    | 9.8  | 48                      | 1500      | 0.25 | 0.5                             | 38.8  | 36                       |
| SZ4556 | 56                    | 9.0  | 55                      | 2000      | 0.25 | 0.5                             | 42.6  | 32                       |
| SZ4562 | 62                    | 8.1  | 60                      | 2000      | 0.25 | 0.5                             | 47.1  | 29                       |
| SZ4568 | 68                    | 7.4  | 75                      | 2000      | 0.25 | 0.5                             | 51.7  | 27                       |
| SZ4575 | 75                    | 6.7  | 90                      | 2000      | 0.25 | 0.5                             | 56.0  | 24                       |
| SZ4582 | 82                    | 6.1  | 100                     | 3000      | 0.25 | 0.5                             | 62.2  | 22                       |
| SZ4591 | 91                    | 5.5  | 125                     | 3000      | 0.25 | 0.5                             | 69.2  | 20                       |
| SZ45B0 | 100                   | 5.0  | 175                     | 3000      | 0.25 | 0.5                             | 76.0  | 18                       |
| SZ45B1 | 110                   | 4.5  | 250                     | 4000      | 0.25 | 0.5                             | 83.6  | 17                       |
| SZ45B2 | 120                   | 4.2  | 325                     | 4500      | 0.25 | 0.5                             | 91.2  | 15                       |
| SZ45B3 | 130                   | 3.8  | 400                     | 5000      | 0.25 | 0.5                             | 98.8  | 14                       |
| SZ45B4 | 140                   | 3.6  | 500                     | 5500      | 0.25 | 0.5                             | 106.4 | 13                       |
| SZ45B5 | 150                   | 3.3  | 575                     | 6000      | 0.25 | 0.5                             | 114.0 | 12                       |
| SZ45B6 | 160                   | 3.1  | 650                     | 6500      | 0.25 | 0.5                             | 121.6 | 11                       |
| SZ45B7 | 170                   | 2.9  | 675                     | 7000      | 0.25 | 0.5                             | 130.4 | 11                       |
| SZ45B8 | 180                   | 2.8  | 725                     | 7000      | 0.25 | 0.5                             | 136.8 | 10                       |
| SZ45B9 | 190                   | 2.6  | 825                     | 8000      | 0.25 | 0.5                             | 144.8 | 10                       |
| SZ45D0 | 200                   | 2.5  | 900                     | 8000      | 0.25 | 0.5                             | 152.0 | 9.0                      |

### Notes :

- (1) The type number listed have a standard tolerance on the nominal zener voltage of  $\pm 5.0\%$ , altered the fourth number of type from " 5 " for  $\pm 5.0\%$  tolerance to be " 0 " for  $\pm 10\%$  tolerance.
- (2) " SZ " will be omitted in marking on the diode.