

# SZ603D - SZ60D0

## SURFACE MOUNT SILICON ZENER DIODES

**V<sub>Z</sub> : 3.3 - 200 Volts**

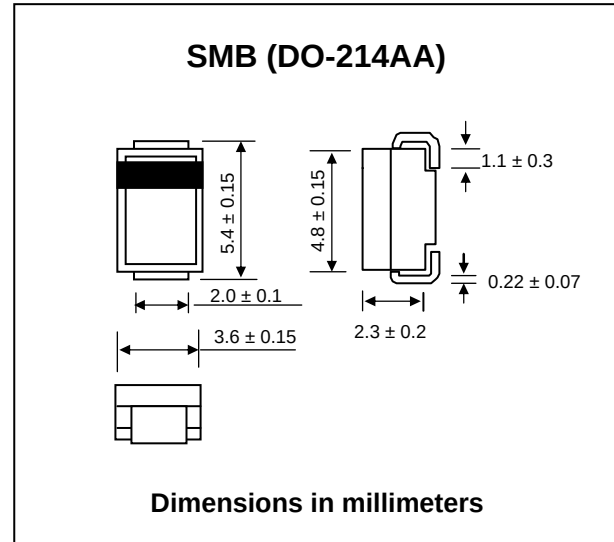
**P<sub>D</sub> : 5 Watts**

### FEATURES :

- \* Complete Voltage Range 3.3 to 200 Volts
- \* High peak reverse power dissipation
- \* High reliability
- \* Low leakage current
- \* Pb / RoHS Free

### MECHANICAL DATA

- \* Case : SMB (DO-214AA) Molded plastic
- \* Epoxy : UL94V-O rate flame retardant
- \* Lead : Lead formed for Surface mount
- \* Polarity : Color band denotes cathode end
- \* Mounting position : Any
- \* Weight : 0.093 gram



### MAXIMUM RATINGS

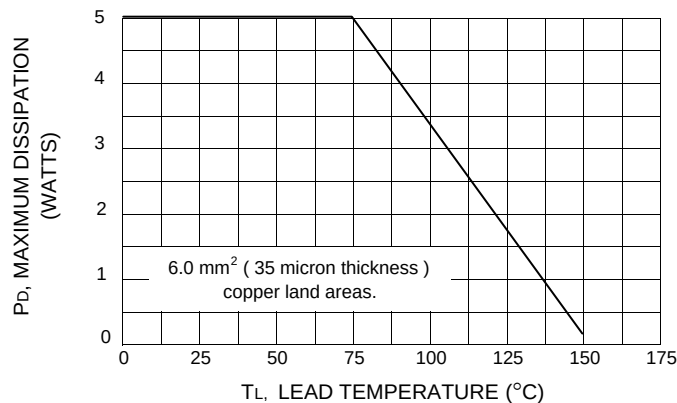
Rating at 25 °C ambient temperature unless otherwise specified

| Rating                                                 | Symbol         | Value         | Unit |
|--------------------------------------------------------|----------------|---------------|------|
| DC Power Dissipation at T <sub>L</sub> = 75 °C (Note1) | P <sub>D</sub> | 5.0           | W    |
| Maximum Forward Voltage at I <sub>F</sub> = 1.0 A      | 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 6.0 mm<sup>2</sup> ( 35 micron thickness ) 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)                     |
| SZ603D | 3.3                   | 380  | 3.0                     | 400       | 1.0  | 300                             | 1.0  | 1440                     |
| SZ603G | 3.6                   | 350  | 2.5                     | 500       | 1.0  | 150                             | 1.0  | 1320                     |
| SZ603J | 3.9                   | 320  | 2.0                     | 500       | 1.0  | 150                             | 1.0  | 1220                     |
| SZ604D | 4.3                   | 290  | 2.0                     | 500       | 1.0  | 150                             | 1.0  | 1100                     |
| SZ604H | 4.7                   | 260  | 2.0                     | 450       | 1.0  | 150                             | 1.0  | 1010                     |
| SZ605B | 5.1                   | 240  | 1.5                     | 400       | 1.0  | 150                             | 1.0  | 930                      |
| SZ605G | 5.6                   | 220  | 1.0                     | 400       | 1.0  | 150                             | 2.0  | 856                      |
| SZ606A | 6.0                   | 200  | 1.0                     | 300       | 1.0  | 150                             | 3.0  | 790                      |
| SZ606C | 6.2                   | 200  | 1.0                     | 200       | 1.0  | 150                             | 3.0  | 765                      |
| SZ606I | 6.8                   | 175  | 1.0                     | 200       | 1.0  | 150                             | 4.9  | 700                      |
| SZ607F | 7.5                   | 175  | 1.5                     | 200       | 1.0  | 150                             | 5.4  | 630                      |
| SZ608C | 8.2                   | 150  | 1.5                     | 200       | 1.0  | 150                             | 5.9  | 580                      |
| SZ608H | 8.7                   | 150  | 2.0                     | 200       | 1.0  | 150                             | 6.3  | 545                      |
| SZ609B | 9.1                   | 150  | 2.0                     | 150       | 1.0  | 150                             | 6.6  | 520                      |
| SZ6010 | 10                    | 125  | 2.0                     | 125       | 1.0  | 150                             | 7.2  | 475                      |
| SZ6011 | 11                    | 125  | 2.5                     | 125       | 1.0  | 50                              | 8.0  | 430                      |
| SZ6012 | 12                    | 100  | 2.5                     | 125       | 1.0  | 2.0                             | 8.6  | 395                      |
| SZ6013 | 13                    | 100  | 2.5                     | 100       | 1.0  | 1.0                             | 9.4  | 365                      |
| SZ6014 | 14                    | 100  | 2.5                     | 75        | 1.0  | 1.0                             | 10.1 | 340                      |
| SZ6015 | 15                    | 75   | 2.5                     | 75        | 1.0  | 1.0                             | 10.8 | 315                      |
| SZ6016 | 16                    | 75   | 2.5                     | 75        | 1.0  | 1.0                             | 11.5 | 295                      |
| SZ6017 | 17                    | 70   | 2.5                     | 75        | 1.0  | 0.5                             | 12.2 | 280                      |
| SZ6018 | 18                    | 65   | 2.5                     | 75        | 1.0  | 0.5                             | 13.0 | 265                      |
| SZ6019 | 19                    | 65   | 3.0                     | 75        | 1.0  | 0.5                             | 13.7 | 250                      |
| SZ6020 | 20                    | 65   | 3.0                     | 75        | 1.0  | 0.5                             | 14.4 | 237                      |
| SZ6022 | 22                    | 50   | 3.5                     | 75        | 1.0  | 0.5                             | 15.8 | 216                      |
| SZ6024 | 24                    | 50   | 3.5                     | 100       | 1.0  | 0.5                             | 17.3 | 198                      |
| SZ6025 | 25                    | 50   | 4.0                     | 110       | 1.0  | 0.5                             | 18.0 | 190                      |
| SZ6027 | 27                    | 50   | 5.0                     | 120       | 1.0  | 0.5                             | 19.4 | 176                      |
| SZ6028 | 28                    | 50   | 6.0                     | 130       | 1.0  | 0.5                             | 20.1 | 170                      |
| SZ6030 | 30                    | 40   | 8.0                     | 140       | 1.0  | 0.5                             | 21.6 | 158                      |
| SZ6033 | 33                    | 40   | 10                      | 150       | 1.0  | 0.5                             | 23.8 | 144                      |
| SZ6036 | 36                    | 30   | 11                      | 160       | 1.0  | 0.5                             | 25.9 | 132                      |
| SZ6039 | 39                    | 30   | 14                      | 170       | 1.0  | 0.5                             | 28.1 | 122                      |
| SZ6043 | 43                    | 30   | 20                      | 190       | 1.0  | 0.5                             | 31.0 | 110                      |
| SZ6047 | 47                    | 25   | 25                      | 210       | 1.0  | 0.5                             | 33.8 | 100                      |
| SZ6051 | 51                    | 25   | 27                      | 230       | 1.0  | 0.5                             | 36.7 | 93.0                     |
| SZ6056 | 56                    | 20   | 35                      | 280       | 1.0  | 0.5                             | 40.3 | 86.0                     |
| SZ6060 | 60                    | 20   | 40                      | 350       | 1.0  | 0.5                             | 43.0 | 79.0                     |
| SZ6062 | 62                    | 20   | 42                      | 400       | 1.0  | 0.5                             | 44.6 | 76.0                     |
| SZ6068 | 68                    | 20   | 44                      | 500       | 1.0  | 0.5                             | 49.0 | 70.0                     |
| SZ6075 | 75                    | 20   | 45                      | 620       | 1.0  | 0.5                             | 54.0 | 63.0                     |
| SZ6082 | 82                    | 15   | 65                      | 720       | 1.0  | 0.5                             | 59.0 | 58.0                     |
| SZ6087 | 87                    | 15   | 75                      | 760       | 1.0  | 0.5                             | 63.0 | 54.5                     |
| SZ6091 | 91                    | 15   | 75                      | 760       | 1.0  | 0.5                             | 65.5 | 52.5                     |
| SZ60B0 | 100                   | 12   | 90                      | 800       | 1.0  | 0.5                             | 72.0 | 47.5                     |
| SZ60B1 | 110                   | 12   | 125                     | 1000      | 1.0  | 0.5                             | 79.2 | 43.0                     |
| SZ60B2 | 120                   | 10   | 170                     | 1150      | 1.0  | 0.5                             | 86.4 | 39.5                     |
| SZ60B3 | 130                   | 10   | 190                     | 1250      | 1.0  | 0.5                             | 93.2 | 36.6                     |
| SZ60B4 | 140                   | 8.0  | 230                     | 1500      | 1.0  | 0.5                             | 101  | 34.0                     |
| SZ60B5 | 150                   | 8.0  | 330                     | 1500      | 1.0  | 0.5                             | 108  | 31.6                     |
| SZ60B6 | 160                   | 8.0  | 350                     | 1650      | 1.0  | 0.5                             | 115  | 29.4                     |
| SZ60B7 | 170                   | 8.0  | 380                     | 1750      | 1.0  | 0.5                             | 122  | 28.0                     |
| SZ60B8 | 180                   | 5.0  | 430                     | 1750      | 1.0  | 0.5                             | 130  | 26.4                     |
| SZ60B9 | 190                   | 5.0  | 450                     | 1850      | 1.0  | 0.5                             | 137  | 25.0                     |
| SZ60D0 | 200                   | 5.0  | 480                     | 1850      | 1.0  | 0.5                             | 144  | 23.6                     |

### Notes :

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