

5 W Surface Mount Silicon Zener Diodes

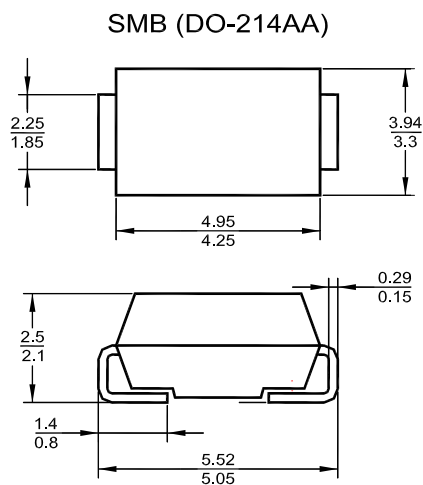
SMB5338 THRU SMB5388

**Features**

- Zener impedance at low current is small
- High reliability

**Mechanical Data**

- **Case:** SMB (DO-214AA) molded plastic
- **Epoxy:** UL 94V-0 rate flame retardant
- **Terminals:** Solder plated solderable per MIL-STD-750 method 2025
- **Polarity:** color band denotes cathode end
- **Mounting position:** Any



Dimensions in millimeters

**Maximum Ratings and Electrical Characteristics**

Ratings at 25 °C ambient temperature unless otherwise specified. Single phase, half wave, 60 Hz, resistive or inductive load. For capacitive load, derate current by 20%.

| Parameter                              | Symbol          | Value           | Unit |
|--|-----------------|-----------------|------|
| Power Dissipation                      | $P_{tot}$       | 5 <sup>1)</sup> | W    |
| Thermal Resistance Junction to Ambient | $R_{\theta JA}$ | 20              | °C/W |
| Maximum Forward Voltage at $I_F = 1$ A | $V_F$           | 1.2             | V    |
| Operating Temperature Range            | $T_j$           | - 50 to + 150   | °C   |
| Storage Temperature Range              | $T_{stg}$       | - 50 to + 175   | °C   |

<sup>1)</sup> Thermal resistance from junction to terminal mounted on 5 X 5 mm copper pad area.



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| Type    | Zener Voltage Range <sup>1)</sup> |                    | Zener Impedance |                 |                    | Reverse Current |                   | Maximum DC Zener Current |
|---------|-----------------------------------|--------------------|-----------------|-----------------|--------------------|-----------------|-------------------|--------------------------|
|         | V <sub>Znom</sub>                 | at I <sub>ZT</sub> | Z <sub>ZT</sub> | Z <sub>ZK</sub> | at I <sub>ZK</sub> | I <sub>R</sub>  | at V <sub>R</sub> |                          |
|         | (V)                               | (mA)               | Max.(Ω)         | Max.(Ω)         | (mA)               | Max.(μA)        | (V)               | I <sub>ZM</sub> (mA)     |
| SMB5338 | 5.1                               | 240                | 1.5             | 400             | 1                  | 1               | 1                 | 930                      |
| SMB5339 | 5.6                               | 220                | 1               | 400             | 1                  | 1               | 2                 | 865                      |
| SMB5340 | 6                                 | 200                | 1               | 300             | 1                  | 1               | 3                 | 790                      |
| SMB5341 | 6.2                               | 200                | 1               | 200             | 1                  | 1               | 3                 | 765                      |
| SMB5342 | 6.8                               | 175                | 1               | 200             | 1                  | 10              | 4.9               | 700                      |
| SMB5343 | 7.5                               | 175                | 1.5             | 200             | 1                  | 10              | 5.4               | 630                      |
| SMB5344 | 8.2                               | 150                | 1.5             | 200             | 1                  | 10              | 5.9               | 580                      |
| SMB5345 | 8.7                               | 150                | 2               | 200             | 1                  | 10              | 6.3               | 545                      |
| SMB5346 | 9.1                               | 150                | 2               | 150             | 1                  | 7.5             | 6.6               | 520                      |
| SMB5347 | 10                                | 125                | 2               | 125             | 1                  | 5               | 7.2               | 475                      |
| SMB5348 | 11                                | 125                | 2.5             | 125             | 1                  | 5               | 8                 | 430                      |
| SMB5349 | 12                                | 100                | 2.5             | 125             | 1                  | 2               | 8.6               | 395                      |
| SMB5350 | 13                                | 100                | 2.5             | 100             | 1                  | 1               | 9.4               | 365                      |
| SMB5351 | 14                                | 100                | 2.5             | 75              | 1                  | 1               | 10.1              | 340                      |
| SMB5352 | 15                                | 75                 | 2.5             | 75              | 1                  | 1               | 10.8              | 315                      |
| SMB5353 | 16                                | 75                 | 2.5             | 75              | 1                  | 1               | 11.5              | 295                      |
| SMB5354 | 17                                | 70                 | 2.5             | 75              | 1                  | 0.5             | 12.2              | 280                      |
| SMB5355 | 18                                | 65                 | 2.5             | 75              | 1                  | 0.5             | 13                | 265                      |
| SMB5356 | 19                                | 65                 | 3               | 75              | 1                  | 0.5             | 13.7              | 250                      |
| SMB5357 | 20                                | 65                 | 3               | 75              | 1                  | 0.5             | 14.4              | 237                      |
| SMB5358 | 22                                | 50                 | 3.5             | 75              | 1                  | 0.5             | 15.8              | 216                      |
| SMB5359 | 24                                | 50                 | 3.5             | 100             | 1                  | 0.5             | 17.3              | 198                      |
| SMB5360 | 25                                | 50                 | 4               | 110             | 1                  | 0.5             | 18                | 190                      |
| SMB5361 | 27                                | 50                 | 5               | 120             | 1                  | 0.5             | 19.4              | 176                      |
| SMB5362 | 28                                | 50                 | 6               | 130             | 1                  | 0.5             | 20.1              | 170                      |
| SMB5363 | 30                                | 40                 | 8               | 140             | 1                  | 0.5             | 21.6              | 158                      |
| SMB5364 | 33                                | 40                 | 10              | 150             | 1                  | 0.5             | 23.8              | 144                      |
| SMB5365 | 36                                | 30                 | 11              | 160             | 1                  | 0.5             | 25.9              | 132                      |
| SMB5366 | 39                                | 30                 | 14              | 170             | 1                  | 0.5             | 28.1              | 122                      |
| SMB5367 | 43                                | 30                 | 20              | 190             | 1                  | 0.5             | 31                | 110                      |
| SMB5368 | 47                                | 25                 | 25              | 210             | 1                  | 0.5             | 33.8              | 100                      |
| SMB5369 | 51                                | 25                 | 27              | 230             | 1                  | 0.5             | 36.7              | 93                       |
| SMB5370 | 56                                | 20                 | 35              | 280             | 1                  | 0.5             | 40.3              | 86                       |
| SMB5371 | 60                                | 20                 | 40              | 350             | 1                  | 0.5             | 43                | 79                       |
| SMB5372 | 62                                | 20                 | 42              | 400             | 1                  | 0.5             | 44.6              | 76                       |
| SMB5373 | 68                                | 20                 | 44              | 500             | 1                  | 0.5             | 49                | 70                       |
| SMB5374 | 75                                | 20                 | 45              | 620             | 1                  | 0.5             | 54                | 63                       |
| SMB5375 | 82                                | 15                 | 65              | 720             | 1                  | 0.5             | 59                | 58                       |
| SMB5376 | 87                                | 15                 | 75              | 760             | 1                  | 0.5             | 63                | 54.5                     |
| SMB5377 | 91                                | 15                 | 75              | 760             | 1                  | 0.5             | 65.5              | 52.5                     |
| SMB5378 | 100                               | 12                 | 90              | 800             | 1                  | 0.5             | 72                | 47.5                     |
| SMB5379 | 110                               | 12                 | 125             | 1000            | 1                  | 0.5             | 79.2              | 43                       |
| SMB5380 | 120                               | 10                 | 170             | 1150            | 1                  | 0.5             | 86.4              | 39.5                     |
| SMB5381 | 130                               | 10                 | 190             | 1250            | 1                  | 0.5             | 93.2              | 36.6                     |
| SMB5382 | 140                               | 8                  | 230             | 1500            | 1                  | 0.5             | 101               | 34                       |
| SMB5383 | 150                               | 8                  | 330             | 1500            | 1                  | 0.5             | 108               | 31.6                     |
| SMB5384 | 160                               | 8                  | 350             | 1650            | 1                  | 0.5             | 115               | 29.4                     |
| SMB5385 | 170                               | 8                  | 380             | 1750            | 1                  | 0.5             | 122               | 28                       |
| SMB5386 | 180                               | 5                  | 430             | 1750            | 1                  | 0.5             | 130               | 26.4                     |
| SMB5387 | 190                               | 5                  | 450             | 1850            | 1                  | 0.5             | 137               | 25                       |
| SMB5388 | 200                               | 5                  | 480             | 1850            | 1                  | 0.5             | 144               | 23.6                     |

<sup>1)</sup> Standard tolerance on nominal Zener voltage is ± 20%, Suffix "A" indicates ± 10% tolerance, Suffix "B" indicates ± 5% tolerance.