

## 2.0 W Surface Mounted Glass Passivated Zener Diode

|                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Dimensions in mm.</b></p> <p><b>CASE:</b><br/>SMB/DO-214AA</p> | <p><b>Voltage</b><br/>6.2 to 200 V</p> <p><b>Power</b><br/>2.0 W</p> <p><b>HYPERRECTIFIER®</b></p> <ul style="list-style-type: none"> <li>• Glass passivated junction</li> <li>• The plastic material carries UL 94 V-0</li> <li>• Low profile package</li> <li>• Easy pick and place</li> <li>• High temperature soldering 260 °C 10 sec</li> </ul> <p><b>MECHANICAL DATA</b><br/>           Terminals: Solder plated, solderable per IEC 68-2-20.<br/>           Standard Packaging: 8 mm. tape (EIA-RS-481).<br/>           Weight: 0.093 g.</p> |
|----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

### Maximum Ratings and Electrical Characteristics at 25 °C

|                                |                                                                         |                    |
|--------------------------------|-------------------------------------------------------------------------|--------------------|
| $P_{tot}$                      | Power dissipation at $T_{amb} = 25\text{ °C}$                           | 2.0 W              |
| $T_j$                          | Operating temperature range                                             | - 65 to + 175 °C   |
| $T_{stg}$                      | Storage temperature range                                               | - 65 to + 175 °C   |
| $V_F$                          | Max. forward voltage drop at $I_F = 1.0\text{ A}$                       | 1.1 V              |
| $R_{th(j-l)}$<br>$R_{th(j-a)}$ | Typical Thermal Resistance<br>(5x5 mm <sup>2</sup> x 130 μ Copper Area) | 20 °C/W<br>60 °C/W |

Other voltages upon request

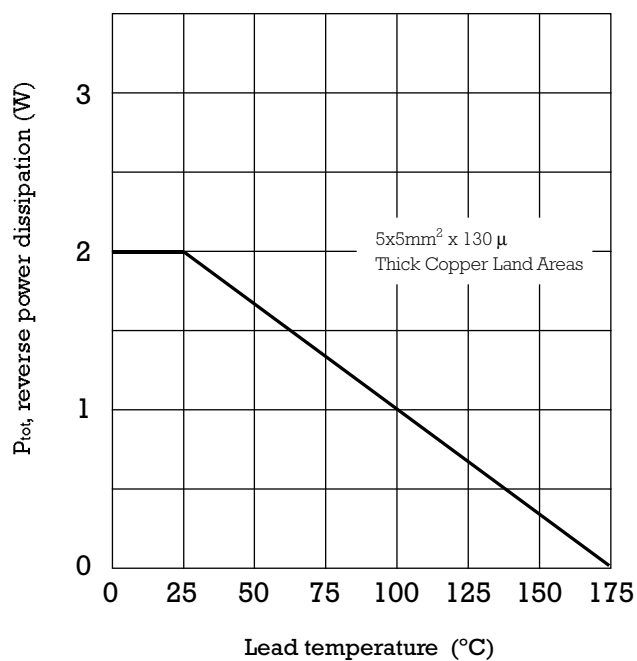
| Type     | Marking Code | Zener (1)<br>Voltage Range<br>$V_Z$ at $I_{ZT}$ | Maximum<br>Zener<br>Impedance<br>$Z_{ZT}$ at $I_{ZT}$ | Typical<br>Temperature<br>Coefficient<br>at $I_{ZT}$ | Test<br>Current<br>$I_{ZT}$ | Max Reverse<br>Leakage Current<br>$I_R$ @ $V_R$ |      | Max Regulator<br>Current<br>at 45 °C<br>$I_{ZM}$ | Surge<br>Current<br>(10ms)<br>$I_{ZS}$ |
|----------|--------------|-------------------------------------------------|-------------------------------------------------------|------------------------------------------------------|-----------------------------|-------------------------------------------------|------|--------------------------------------------------|----------------------------------------|
|          |              | (V)                                             | ( $\Omega$ )                                          | (% / °C)                                             | (mA)                        | ( $\mu$ A)                                      | (V)  | (mA)                                             | (mA)                                   |
| Z2SMB6V2 | JE           | 5.8÷6.6                                         | 2                                                     | +0.025                                               | 100                         | 5                                               | 3    | 245                                              | 9600                                   |
| Z2SMB6V8 | GE           | 6.4÷7.2                                         | 2                                                     | +0.035                                               | 100                         | 5                                               | 4    | 220                                              | 8820                                   |
| Z2SMB7V5 | GD           | 7.0÷7.9                                         | 2                                                     | +0.035                                               | 100                         | 5                                               | 5    | 200                                              | 8000                                   |
| Z2SMB8V2 | GF           | 7.7÷8.7                                         | 2                                                     | +0.055                                               | 100                         | 5                                               | 6    | 180                                              | 7300                                   |
| Z2SMB9V1 | GG           | 8.5÷9.6                                         | 4                                                     | +0.055                                               | 50                          | 5                                               | 7    | 165                                              | 6590                                   |
| Z2SMB10  | GH           | 9.4÷10.6                                        | 4                                                     | +0.070                                               | 50                          | 1                                               | 7.5  | 145                                              | 6000                                   |
| Z2SMB11  | GK           | 10.4÷11.6                                       | 7                                                     | +0.075                                               | 50                          | 1                                               | 8.3  | 135                                              | 5450                                   |
| Z2SMB12  | GL           | 11.4÷12.7                                       | 7                                                     | +0.075                                               | 50                          | 1                                               | 9.1  | 120                                              | 5000                                   |
| Z2SMB13  | GM           | 12.4÷14.1                                       | 10                                                    | +0.075                                               | 50                          | 1                                               | 9.9  | 110                                              | 4600                                   |
| Z2SMB15  | GN           | 13.8÷15.6                                       | 10                                                    | +0.075                                               | 50                          | 1                                               | 11.4 | 98                                               | 4000                                   |
| Z2SMB16  | GP           | 15.3÷17.1                                       | 15                                                    | +0.085                                               | 25                          | 1                                               | 12.2 | 90                                               | 3750                                   |
| Z2SMB18  | GQ           | 16.8÷19.1                                       | 15                                                    | +0.085                                               | 25                          | 1                                               | 13.7 | 80                                               | 3330                                   |
| Z2SMB20  | GR           | 18.8÷21.2                                       | 15                                                    | +0.085                                               | 25                          | 1                                               | 15.2 | 72                                               | 3000                                   |
| Z2SMB22  | GS           | 20.8÷23.3                                       | 15                                                    | +0.085                                               | 25                          | 1                                               | 16.7 | 66                                               | 2700                                   |
| Z2SMB24  | GT           | 22.8÷25.6                                       | 15                                                    | +0.085                                               | 25                          | 1                                               | 18.2 | 60                                               | 2500                                   |
| Z2SMB27  | GU           | 25.1÷28.9                                       | 15                                                    | +0.085                                               | 25                          | 1                                               | 20.5 | 53                                               | 2200                                   |
| Z2SMB30  | GV           | 28÷32                                           | 15                                                    | +0.085                                               | 25                          | 1                                               | 22.8 | 48                                               | 2000                                   |
| Z2SMB33  | GW           | 31÷35                                           | 15                                                    | +0.085                                               | 25                          | 1                                               | 25   | 44                                               | 1800                                   |
| Z2SMB36  | GX           | 34÷38                                           | 40                                                    | +0.085                                               | 10                          | 1                                               | 27.4 | 40                                               | 1600                                   |
| Z2SMB39  | GY           | 37÷41                                           | 40                                                    | +0.085                                               | 10                          | 1                                               | 29.6 | 37                                               | 1500                                   |
| Z2SMB43  | GZ           | 40÷46                                           | 45                                                    | +0.095                                               | 10                          | 1                                               | 32.7 | 33                                               | 1300                                   |
| Z2SMB47  | HD           | 44÷50                                           | 45                                                    | +0.095                                               | 10                          | 1                                               | 35.7 | 30                                               | 1200                                   |
| Z2SMB51  | HF           | 48÷54                                           | 60                                                    | +0.095                                               | 10                          | 1                                               | 38.8 | 27                                               | 1100                                   |
| Z2SMB56  | HC           | 52÷60                                           | 60                                                    | +0.095                                               | 10                          | 1                                               | 42.5 | 25                                               | 1000                                   |
| Z2SMB62  | HH           | 58÷66                                           | 80                                                    | +0.105                                               | 10                          | 1                                               | 47.1 | 21                                               | 960                                    |
| Z2SMB68  | HK           | 64÷72                                           | 80                                                    | +0.105                                               | 10                          | 1                                               | 51.7 | 20                                               | 880                                    |
| Z2SMB75  | HL           | 70÷80                                           | 100                                                   | +0.105                                               | 10                          | 1                                               | 57   | 18                                               | 800                                    |
| Z2SMB82  | HM           | 77÷87                                           | 100                                                   | +0.105                                               | 10                          | 1                                               | 62.4 | 16                                               | 730                                    |
| Z2SMB91  | HN           | 85÷96                                           | 200                                                   | +0.110                                               | 5                           | 1                                               | 69.2 | 15                                               | 650                                    |
| Z2SMB100 | HP           | 94÷106                                          | 200                                                   | +0.110                                               | 5                           | 1                                               | 76   | 13                                               | 600                                    |
| Z2SMB110 | HQ           | 104÷116                                         | 250                                                   | +0.110                                               | 5                           | 1                                               | 83.5 | 12                                               | 550                                    |
| Z2SMB120 | HR           | 114÷127                                         | 250                                                   | +0.110                                               | 5                           | 1                                               | 91.2 | 11                                               | 500                                    |
| Z2SMB130 | HS           | 124÷141                                         | 300                                                   | +0.110                                               | 5                           | 1                                               | 98.2 | 10                                               | 460                                    |
| Z2SMB150 | HT           | 138÷156                                         | 300                                                   | +0.110                                               | 5                           | 1                                               | 114  | 9                                                | 400                                    |
| Z2SMB160 | HU           | 153÷171                                         | 350                                                   | +0.110                                               | 5                           | 1                                               | 122  | 8.5                                              | 375                                    |
| Z2SMB180 | HV           | 168÷191                                         | 350                                                   | +0.110                                               | 5                           | 1                                               | 137  | 8.0                                              | 330                                    |
| Z2SMB200 | HW           | 188÷212                                         | 350                                                   | +0.110                                               | 5                           | 1                                               | 152  | 7.5                                              | 300                                    |

(1) Tested with pulses.

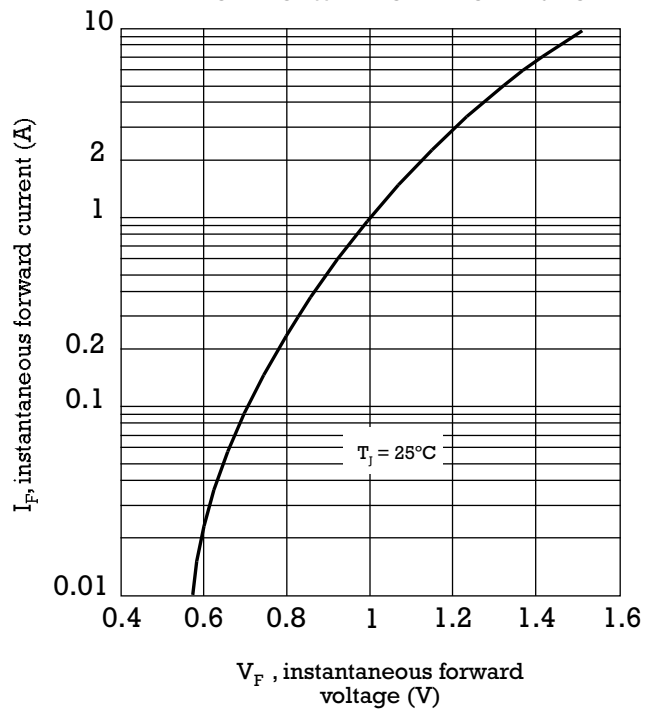
Pulse test:  $t_p \leq 50$  ms;  $\delta < 2\%$

## Rating And Characteristic Curves

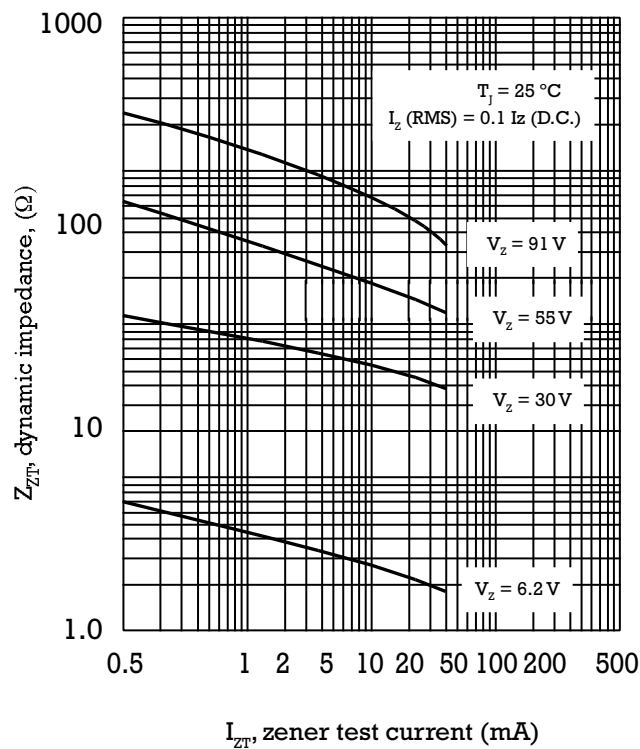
MAXIMUM CONTINUOUS POWER DISSIPATION



TYPICAL FORWARD CHARACTERISTIC



TYPICAL ZENER IMPEDANCE



TYPICAL REVERSE CHARACTERISTIC

