







1.3 W Glass Passivated Zener Diodes

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|--|--|--------------------------------|-------------------------|--|--|
| <p>DO-204AL (DO-41)</p>  | <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center; padding: 5px;">Voltage 6.2 to 220 V</td> <td style="text-align: center; padding: 5px;">Current 1.3 W</td> </tr> <tr> <td colspan="2" style="text-align: center; padding: 5px;">  </td> </tr> </table> <p>FEATURES</p> <ul style="list-style-type: none"> Glass passivated chip junction Hyperrectifier structure for high reliability Cavity-free glass-passivated junction Low leakage current High surge current and zener capability Low differential resistance Tolerance series $\pm 5\%$ Low forward voltage drop Solder dip 260°C, 10s AEC-Q101 qualified Component in accordance to RoHS 2011/65/EU and WEEE 2002/96/EC Halogen-free available according to IEC 61249-2-21 definition <div style="text-align: right; padding-right: 10px;">   RoHS <small>COMPLIANT</small> HALOGEN FREE </div> <p>MECHANICAL DATA</p> <ul style="list-style-type: none"> Case: DO-204AL (DO-41). Epoxy meets UL 94V-0 flammability rating. Polarity: Color band denotes cathode end. Terminals: Matte tin plated leads, solderable per MIL-STD-750 Method 2026, J-STD-002 and JESD22-B102. Consumer grade, meets JESD 201 class 1A whisker test <p>TYPICAL APPLICATIONS</p> <p>Used for basic regulation functions in most electronic applications, Zener diodes offer a cheaper alternative to IC solutions.</p> | Voltage 6.2 to 220 V | Current 1.3 W |  | |
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|  | | | | | |

Maximum Ratings and Electrical Characteristics at 25 °C

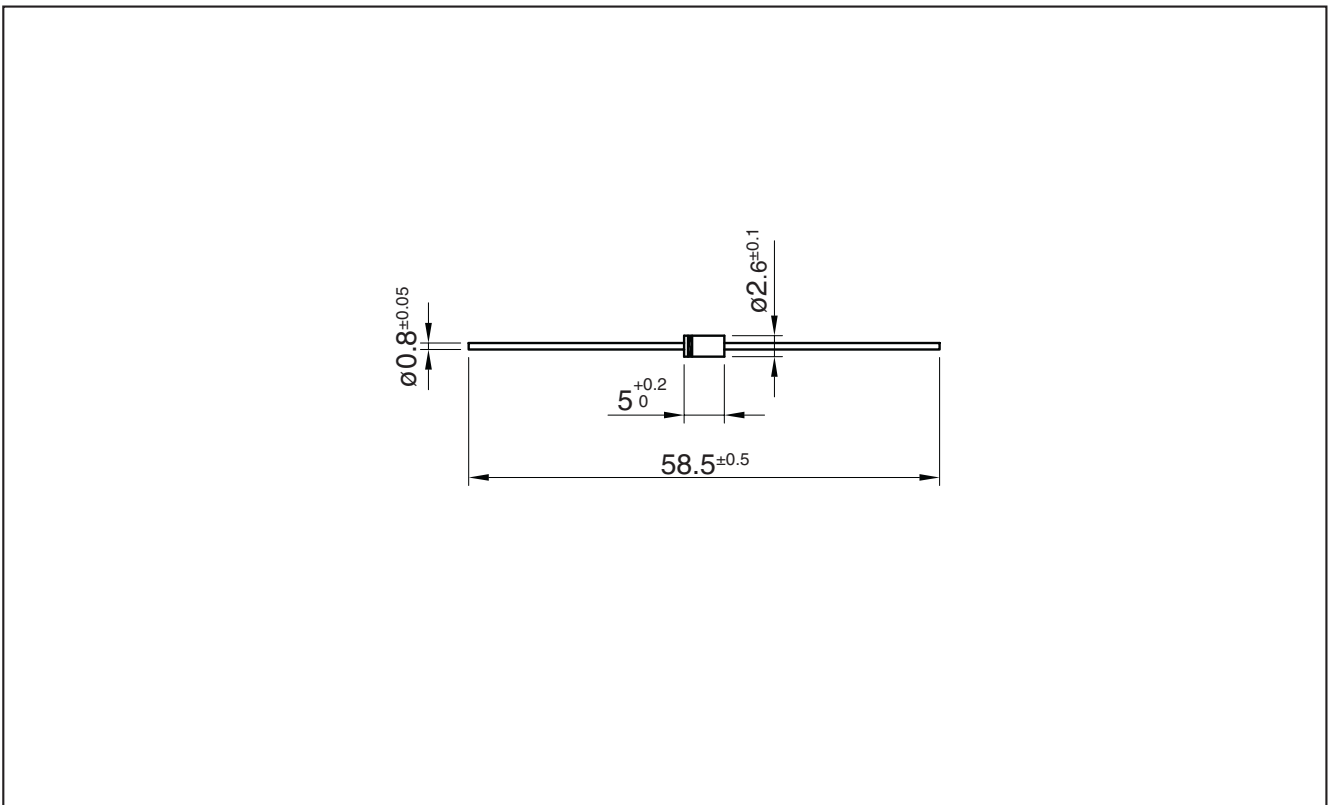
| SYMBOL | TYPE NUMBER | Value | Unit |
|--------------------|---|--------------|------|
| P _{tot} | Power dissipation at T _{amb} = 25 °C | 1.3 | W |
| T _j | Operating Temperature Range | -55 to + 175 | °C |
| T _{stg} | Storage Temperature Range | -55 to + 175 | °C |
| V _F | Max. forward voltage drop at I _F = 0.2 A | 1.0 | V |
| R _{thj-a} | Max. thermal resistance at 10 mm. lead length | 60 | °C/W |

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Ordering information

| PREFERRED P/N | PACKAGE CODE | DELIVERY MODE | BASE QUANTITY | UNIT WEIGHT (g) |
|-------------------|--------------|----------------------------|---------------|-----------------|
| BZX85C20GP AMP | AMP | AMMO BOX | 5,000 | 0.325 |
| BZX85C20GP TR | TR | 14" diameter tape and reel | 5,000 | 0.325 |
| BZX85C20GP HF AMP | AMP | AMMO BOX | 5,000 | 0.325 |
| BZX85C20GP HF TR | TR | 14" diameter tape and reel | 5,000 | 0.325 |

Package Outline Dimensions: (mm) DO-204AL (DO-41)

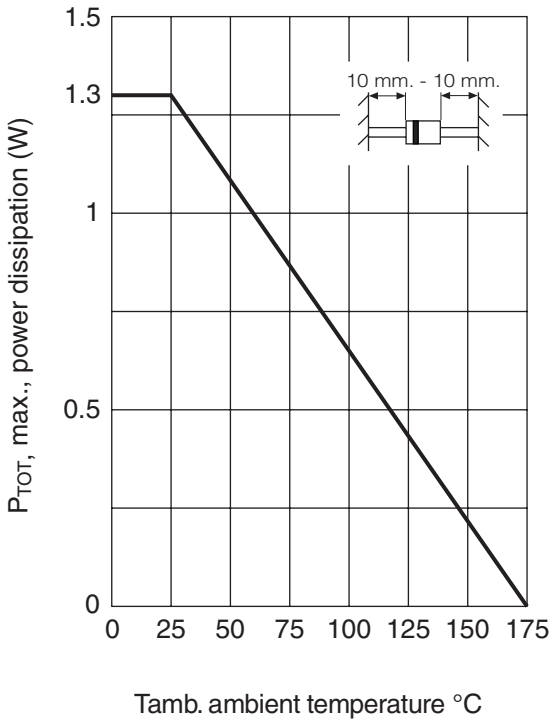


1.3 W Glass Passivated Zener Diodes
Ratings and Characteristics (Ta 25 °C unless otherwise noted)

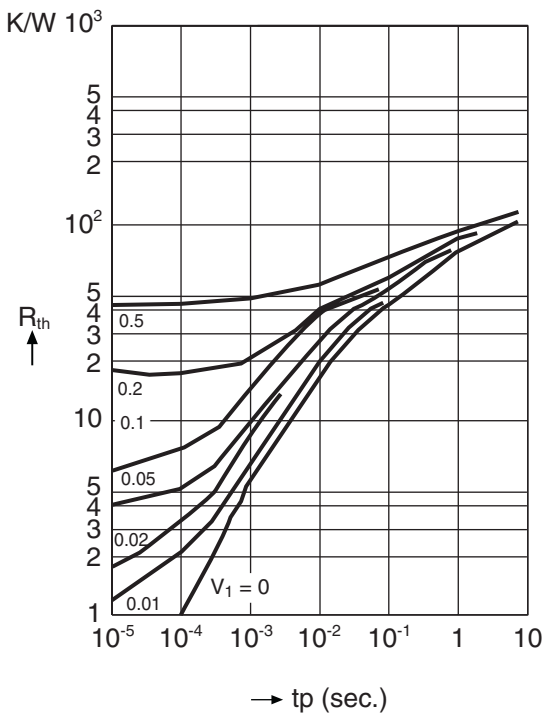
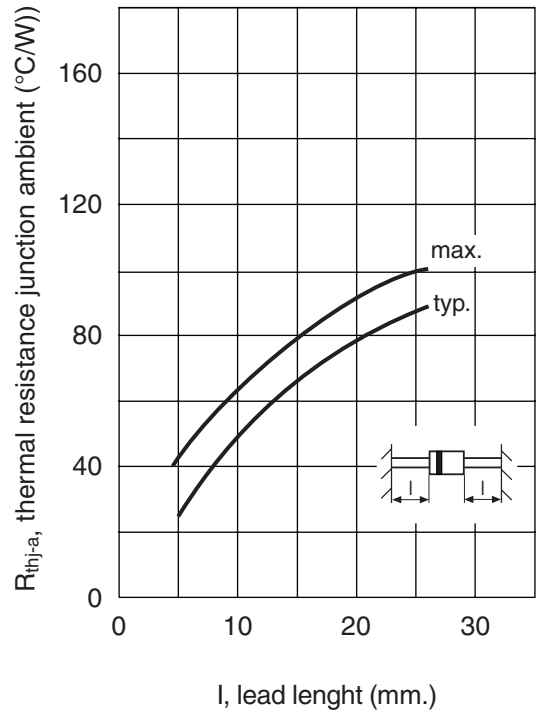
| Type | Zener Voltage Range V _Z at I _{ZT} | | Maximum Zener Impedance Z _{ZT} at I _{ZT} | Temperature Coefficient of Zener Voltage in (% / °C) | | | Max Reverse Leakage current I _R @ V _R | | Surge Current (10 ms) I _{ZS} | Maximum Regulator Current I _{ZM} |
|-------------|--|------|---|---|----------|---------|--|------|---|--|
| | (V) | (mA) | | (Ω) | Minimum | Typical | Maximum | (μA) | | |
| BZX85C6V2GP | 5.8 - 6.6 | 35 | 4 | + 0.010 | + 0.025 | + 0.055 | 5 | 3 | 1263 | 170 |
| BZX85C6V8GP | 6.4 - 7.2 | 35 | 3.5 | + 0.015 | + 0.035 | + 0.060 | 5 | 4 | 1157 | 155 |
| BZX85C7V5GP | 7.0 - 7.9 | 35 | 3 | + 0.020 | + 0.035 | + 0.065 | 5 | 5 | 1055 | 140 |
| BZX85C8V2GP | 7.7 - 8.7 | 25 | 5 | + 0.030 | + 0.055 | + 0.070 | 5 | 6 | 958 | 130 |
| BZX85C9V1GP | 8.5 - 9.6 | 25 | 5 | + 0.035 | + 0.055 | + 0.075 | 5 | 7 | 868 | 120 |
| BZX85C10GP | 9.4 - 10.6 | 25 | 7 | + 0.040 | + 0.060 | + 0.080 | 1 | 5.0 | 786 | 105 |
| BZX85C11GP | 10.4 - 11.6 | 20 | 8 | + 0.045 | + 0.0625 | + 0.080 | 1 | 5.0 | 718 | 97 |
| BZX85C12GP | 11.4 - 12.7 | 20 | 9 | + 0.045 | + 0.065 | + 0.085 | 1 | 7.0 | 656 | 88 |
| BZX85C13GP | 12.4 - 14.1 | 20 | 10 | + 0.050 | + 0.0675 | + 0.085 | 1 | 7.0 | 591 | 79 |
| BZX85C15GP | 13.8 - 15.6 | 15 | 15 | + 0.050 | + 0.0725 | + 0.090 | 1 | 10 | 534 | 71 |
| BZX85C16GP | 15.3 - 17.1 | 15 | 15 | + 0.050 | + 0.0725 | + 0.090 | 1 | 10 | 487 | 66 |
| BZX85C18GP | 16.8 - 19.1 | 15 | 20 | + 0.055 | + 0.075 | + 0.090 | 1 | 10 | 436 | 62 |
| BZX85C20GP | 18.8 - 21.2 | 10 | 24 | + 0.055 | + 0.075 | + 0.090 | 1 | 10 | 393 | 56 |
| BZX85C22GP | 20.8 - 23.3 | 10 | 25 | + 0.055 | + 0.075 | + 0.090 | 1 | 12 | 358 | 52 |
| BZX85C24GP | 22.8 - 25.6 | 10 | 25 | + 0.055 | + 0.075 | + 0.090 | 1 | 12 | 326 | 47 |
| BZX85C27GP | 25.1 - 28.9 | 8 | 30 | + 0.055 | + 0.075 | + 0.090 | 1 | 14 | 288 | 41 |
| BZX85C30GP | 28 - 32 | 8 | 30 | + 0.055 | + 0.075 | + 0.090 | 1 | 14 | 260 | 36 |
| BZX85C33GP | 31 - 35 | 8 | 35 | + 0.055 | + 0.075 | + 0.090 | 1 | 17 | 238 | 33 |
| BZX85C36GP | 34 - 38 | 8 | 40 | + 0.055 | + 0.075 | + 0.090 | 1 | 17 | 219 | 30 |
| BZX85C39GP | 37 - 41 | 6 | 50 | + 0.055 | + 0.075 | + 0.090 | 1 | 20 | 203 | 28 |
| BZX85C43GP | 40 - 46 | 6 | 50 | + 0.055 | + 0.075 | + 0.090 | 1 | 20 | 181 | 26 |
| BZX85C47GP | 44 - 50 | 4 | 90 | + 0.055 | + 0.0775 | + 0.090 | 1 | 24 | 167 | 23 |
| BZX85C51GP | 48 - 54 | 4 | 115 | + 0.060 | + 0.0775 | + 0.095 | 1 | 24 | 154 | 21 |
| BZX85C56GP | 52 - 60 | 4 | 120 | + 0.060 | + 0.0775 | + 0.095 | 1 | 28 | 139 | 19 |
| BZX85C62GP | 58 - 66 | 4 | 125 | + 0.060 | + 0.0775 | + 0.095 | 1 | 28 | 126 | 16 |
| BZX85C68GP | 64 - 72 | 4 | 130 | + 0.060 | + 0.0775 | + 0.095 | 1 | 34 | 116 | 15 |
| BZX85C75GP | 70 - 80 | 4 | 135 | + 0.060 | + 0.0775 | + 0.095 | 1 | 34 | 104 | 14 |
| BZX85C82GP | 77 - 87 | 2.7 | 200 | + 0.060 | + 0.085 | + 0.095 | 1 | 41 | 96 | 12 |
| BZX85C91GP | 85 - 96 | 2.7 | 250 | + 0.060 | + 0.085 | + 0.095 | 1 | 41 | 87 | 10 |
| BZX85C100GP | 94 - 106 | 2.7 | 350 | + 0.060 | + 0.085 | + 0.095 | 1 | 50 | 79 | 9.4 |
| BZX85C110GP | 104 - 116 | 2.7 | 450 | + 0.060 | + 0.085 | + 0.095 | 1 | 50 | 72 | 8.6 |
| BZX85C120GP | 114 - 127 | 2 | 550 | + 0.060 | + 0.085 | + 0.095 | 1 | 60 | 66 | 7.8 |
| BZX85C130GP | 124 - 141 | 2 | 700 | + 0.060 | + 0.085 | + 0.095 | 1 | 60 | 59 | 7.0 |
| BZX85C150GP | 138 - 156 | 2 | 1000 | + 0.060 | + 0.085 | + 0.095 | 1 | 75 | 53 | 6.4 |
| BZX85C160GP | 153 - 171 | 1.5 | 1100 | + 0.060 | + 0.085 | + 0.095 | 1 | 75 | 49 | 5.8 |
| BZX85C180GP | 168 - 191 | 1.5 | 1670 | + 0.060 | + 0.085 | + 0.095 | 1 | 90 | 44 | 5.2 |
| BZX85C200GP | 188 - 212 | 1.5 | 1670 | + 0.060 | + 0.085 | + 0.095 | 1 | 90 | 39 | 4.7 |
| BZX85C220GP | 207 - 234 | 1.5 | 1670 | + 0.060 | + 0.085 | + 0.095 | 1 | 110 | 36 | 4.2 |

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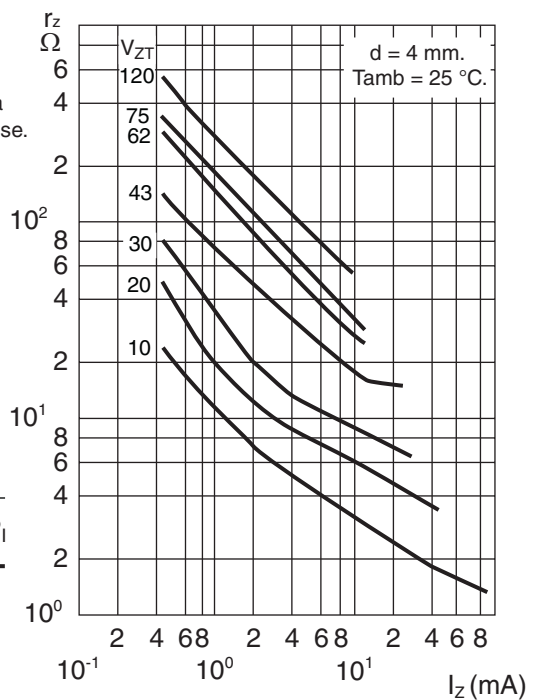
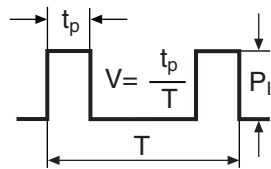
MAXIMUM CONTINUOUS POWER DISSIPATION



THERMAL RESISTANCE



Pulse thermal resistance versus pulse duration. Valid provided that leads are kept at ambient temperature at a distance of 10 mm. from case.



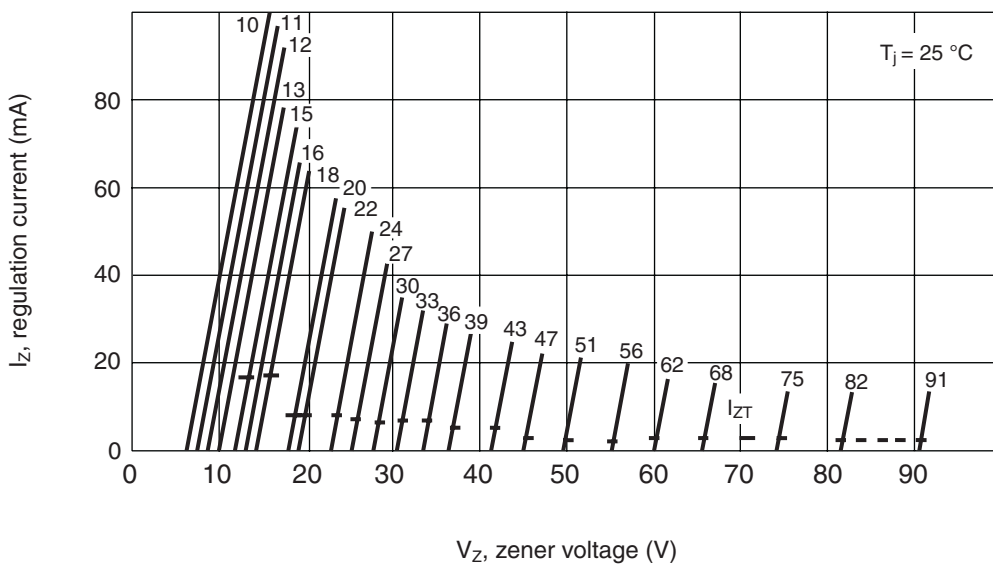
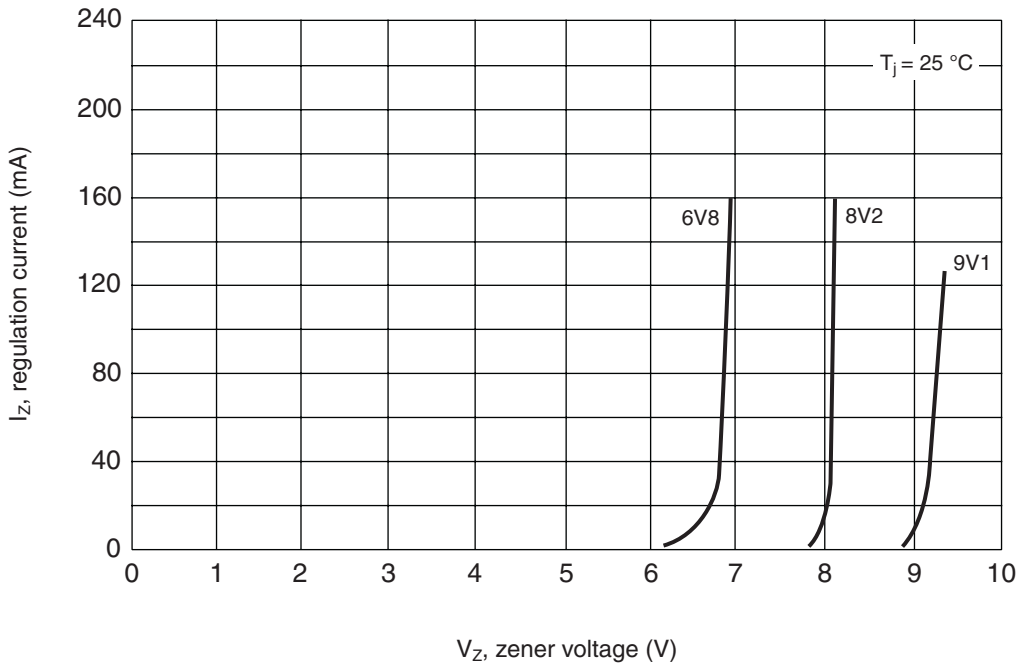
Diferential resistance r_z vs, current I_z for several regulation voltages V_{ZT}

Test conditions: AC signal, amplitude $i_z = 10\%$ of I_z , $f = 1 \text{ kHz}$

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Ratings and Characteristics (Ta 25 °C unless otherwise noted)

BREAKDOWN CHARACTERISTICS



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