

ABZT52B2V0-HF Thru. ABZT52B75-HF

RoHS Device
Halogen Free

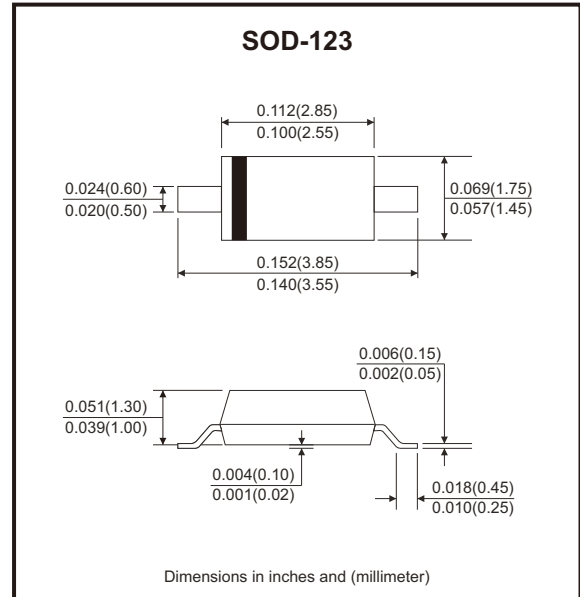


Features

- Planar die construction.
- General purpose, medium current.
- Ideally suited for automated assembly processes.
- AEC-Q101 Qualified

Mechanical data

- Case: Molded plastic, SOD-123



Circuit Diagram



Maximum Ratings (TA=25°C unless otherwise noted)

| Parameter | Symbol | Value | Unit |
|---------------------------------------------|------------------|-------------|------|
| Forward voltage @ IF=10mA | V _F | 0.9 | V |
| Power dissipation | P _D | 500 | mW |
| Thermal resistance, junction to ambient air | R _{θJA} | 305 | °C/W |
| Thermal resistance, junction to case | R _{θJC} | 180 | °C/W |
| Junction temperature | T _J | 150 | °C |
| Storage temperature range | T _{STG} | -65 to +150 | °C |

Note: 1. Device mounted on ceramic PCB; 7.6mm x 9.4mm x 0.87mm with pad areas 25mm².
 2. Short duration test pulse used to minimize self-heating effect.
 3. f = 1 KHz

Electrical Characteristics (TA=25°C unless otherwise noted)

| Part Number | Zener Voltage | | | | Maximum Zener Impedance | | | Maximum Reverse Current | | Typical Temperature Coefficient @ IZTC mV/°C | | Test current IZTC (mA) | Marking Code |
|---------------|---------------|--------|--------|------|-------------------------|---------|------|-------------------------|------|----------------------------------------------|------|------------------------|--------------|
| | VZT @ IZT | | | IZT | ZZT@IZT | Zzk@Izk | Izk | IR @ VR | | Min. | Max. | | |
| | Nom(V) | Min(V) | Max(V) | (mA) | (Ω) | (Ω) | (mA) | (μA) | (V) | | | | |
| ABZT52B2V0-HF | 2.0 | 1.96 | 2.04 | 5.0 | 100 | 1000 | 0.5 | 120 | 0.5 | -3.5 | 0 | 5 | WX• |
| ABZT52B2V2-HF | 2.2 | 2.156 | 2.244 | 5.0 | 100 | 1000 | 0.5 | 120 | 0.7 | -3.5 | 0 | 5 | WY• |
| ABZT52B2V4-HF | 2.4 | 2.35 | 2.45 | 5.0 | 85 | 600 | 1.0 | 45 | 1.0 | -3.5 | 0 | 5 | W1• |
| ABZT52B2V7-HF | 2.7 | 2.65 | 2.75 | 5.0 | 83 | 500 | 1.0 | 18 | 1.0 | -3.5 | 0 | 5 | W2• |
| ABZT52B3V0-HF | 3.0 | 2.94 | 3.06 | 5.0 | 95 | 500 | 1.0 | 9 | 1.0 | -3.5 | 0 | 5 | W3• |
| ABZT52B3V3-HF | 3.3 | 3.23 | 3.37 | 5.0 | 95 | 500 | 1.0 | 4.5 | 1.0 | -3.5 | 0 | 5 | W4• |
| ABZT52B3V6-HF | 3.6 | 3.53 | 3.67 | 5.0 | 95 | 500 | 1.0 | 4.5 | 1.0 | -3.5 | 0 | 5 | W5• |
| ABZT52B3V9-HF | 3.9 | 3.82 | 3.98 | 5.0 | 95 | 500 | 1.0 | 2.7 | 1.0 | -3.5 | 0 | 5 | W6• |
| ABZT52B4V3-HF | 4.3 | 4.21 | 4.39 | 5.0 | 95 | 500 | 1.0 | 2.7 | 1.0 | -3.5 | 0 | 5 | W7• |
| ABZT52B4V7-HF | 4.7 | 4.61 | 4.79 | 5.0 | 78 | 500 | 1.0 | 2.7 | 2.0 | -3.5 | 0 | 5 | W8• |
| ABZT52B5V1-HF | 5.1 | 5.00 | 5.20 | 5.0 | 60 | 480 | 1.0 | 1.8 | 2.0 | -2.7 | 1.2 | 5 | W9• |
| ABZT52B5V6-HF | 5.6 | 5.49 | 5.71 | 5.0 | 40 | 400 | 1.0 | 0.9 | 2.0 | -2 | 2.5 | 5 | WA• |
| ABZT52B6V2-HF | 6.2 | 6.08 | 6.32 | 5.0 | 10 | 200 | 1.0 | 2.7 | 4.0 | 0.4 | 3.7 | 5 | WB• |
| ABZT52B6V8-HF | 6.8 | 6.66 | 6.94 | 5.0 | 8 | 150 | 1.0 | 1.8 | 4.0 | 1.2 | 4.5 | 5 | WC• |
| ABZT52B7V5-HF | 7.5 | 7.35 | 7.65 | 5.0 | 7 | 50 | 1.0 | 0.9 | 5.0 | 2.5 | 5.3 | 5 | WD• |
| ABZT52B8V2-HF | 8.2 | 8.04 | 8.36 | 5.0 | 7 | 50 | 1.0 | 0.63 | 5.0 | 3.2 | 6.2 | 5 | WE• |
| ABZT52B9V1-HF | 9.1 | 8.92 | 9.28 | 5.0 | 10 | 50 | 1.0 | 0.45 | 6.0 | 3.8 | 7.0 | 5 | WF• |
| ABZT52B10-HF | 10 | 9.80 | 10.20 | 5.0 | 15 | 70 | 1.0 | 0.18 | 7.0 | 4.5 | 8.0 | 5 | WG• |
| ABZT52B11-HF | 11 | 10.78 | 11.22 | 5.0 | 20 | 70 | 1.0 | 0.09 | 8.0 | 5.4 | 9.0 | 5 | WH• |
| ABZT52B12-HF | 12 | 11.76 | 12.24 | 5.0 | 20 | 90 | 1.0 | 0.09 | 8.0 | 6.0 | 10.0 | 5 | WI• |
| ABZT52B13-HF | 13 | 12.74 | 13.26 | 5.0 | 25 | 110 | 1.0 | 0.09 | 8.0 | 7.0 | 11.0 | 5 | WJ• |
| ABZT52B15-HF | 15 | 14.70 | 15.30 | 5.0 | 30 | 110 | 1.0 | 0.045 | 10.5 | 9.2 | 13.0 | 5 | WK• |
| ABZT52B16-HF | 16 | 15.68 | 16.32 | 5.0 | 40 | 170 | 1.0 | 0.045 | 11.2 | 10.4 | 14.0 | 5 | WL• |
| ABZT52B18-HF | 18 | 17.64 | 18.36 | 5.0 | 50 | 170 | 1.0 | 0.045 | 12.6 | 12.4 | 16.0 | 5 | WM• |
| ABZT52B20-HF | 20 | 19.60 | 20.40 | 5.0 | 50 | 220 | 1.0 | 0.045 | 14.0 | 14.4 | 18.0 | 5 | WN• |
| ABZT52B22-HF | 22 | 21.56 | 22.44 | 5.0 | 55 | 220 | 1.0 | 0.045 | 15.4 | 16.4 | 20.0 | 5 | WO• |
| ABZT52B24-HF | 24 | 23.52 | 24.48 | 5.0 | 80 | 220 | 1.0 | 0.045 | 16.8 | 18.4 | 22.0 | 5 | WP• |
| ABZT52B27-HF | 27 | 26.46 | 27.54 | 2.0 | 80 | 250 | 1.0 | 0.045 | 18.9 | 21.4 | 25.3 | 2 | WQ• |
| ABZT52B30-HF | 30 | 29.40 | 30.60 | 2.0 | 80 | 250 | 1.0 | 0.045 | 21.0 | 24.4 | 29.4 | 2 | WR• |
| ABZT52B33-HF | 33 | 32.34 | 33.66 | 2.0 | 80 | 250 | 1.0 | 0.045 | 23.0 | 27.4 | 33.4 | 2 | WS• |

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REV:A

Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

| Part Number | Zener Voltage | | | Maximum Zener Impedance | | | Maximum Reverse Current | | Typical Temperature Coefficient @ I_{ZTC} mV/ $^{\circ}\text{C}$ | | Test current I_{ZTC} (mA) | Marking Code | |
|--------------|---------------------|--------|----------|-------------------------|-----------------|--------------|-------------------------|-------------------|--------------------------------------------------------------------|------|-----------------------------|--------------|-----|
| | V_{ZT} @ I_{ZT} | | I_{ZT} | $Z_{ZT}@I_{ZT}$ | $Z_{ZK}@I_{ZK}$ | I_{ZK} | I_R @ V_R | | Min. | Max. | | | |
| | Nom(V) | Min(V) | Max(V) | (mA) | (Ω) | (Ω) | (mA) | (μA) | (V) | | | | |
| ABZT52B36-HF | 36 | 35.28 | 36.72 | 2.0 | 90 | 250 | 1.0 | 0.045 | 25.2 | 30.4 | 37.4 | 2 | WT• |
| ABZT52B39-HF | 39 | 38.22 | 39.78 | 2.0 | 90 | 300 | 1.0 | 0.045 | 27.3 | 33.4 | 41.2 | 2 | WU• |
| ABZT52B43-HF | 43 | 42.14 | 43.86 | 2.0 | 100 | 700 | 1.0 | 0.045 | 30.1 | 10.0 | 12.0 | 5 | WV• |
| ABZT52B47-HF | 47 | 46.06 | 47.94 | 2.0 | 100 | 750 | 1.0 | 0.045 | 33.0 | 10.0 | 12.0 | 5 | WW• |
| ABZT52B51-HF | 51 | 49.98 | 52.02 | 2.0 | 100 | 750 | 1.0 | 0.045 | 35.7 | 10.0 | 12.0 | 5 | X1• |
| ABZT52B56-HF | 56 | 54.88 | 57.12 | 2.0 | 200 | 400 | 0.5 | 0.045 | 39.2 | 10.0 | 12.0 | 5 | X2• |
| ABZT52B62-HF | 62 | 60.76 | 63.24 | 2.0 | 215 | 423 | 0.5 | 0.045 | 43.4 | 10.0 | 12.0 | 5 | X3• |
| ABZT52B68-HF | 68 | 66.64 | 69.36 | 2.0 | 240 | 447 | 0.5 | 0.045 | 47.6 | 10.0 | 12.0 | 5 | X4• |
| ABZT52B75-HF | 75 | 73.50 | 76.50 | 2.0 | 255 | 470 | 0.5 | 0.045 | 52.5 | 10.0 | 12.0 | 5 | X5• |

Rating and Characteristic Curves (ABZT52B2V0-HF Thru. ABZT52B75-HF)

Fig.1 - Power Dissipation vs Ambient Temperature

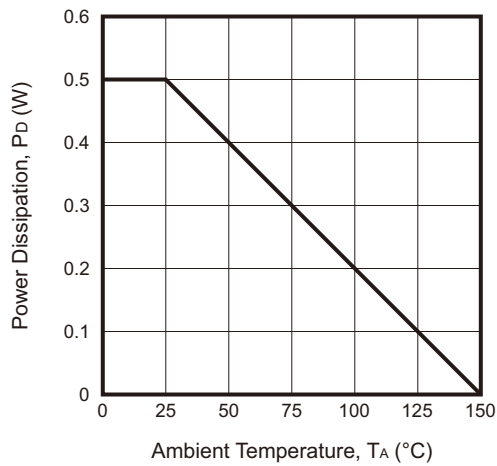
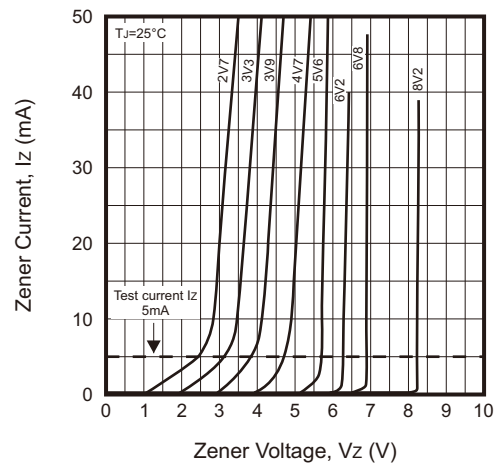


Fig.2 - Zener Breakdown Characteristics



Rating and Characteristic Curves (ABZT52B2V0-HF Thru. ABZT52B75-HF)

Fig.3 - Zener Breakdown Characteristics

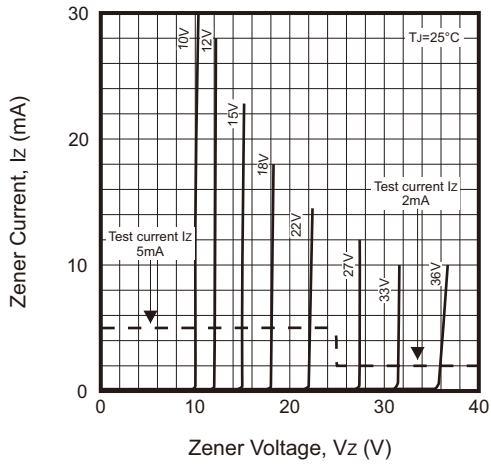


Fig.4 - Zener Breakdown Characteristics

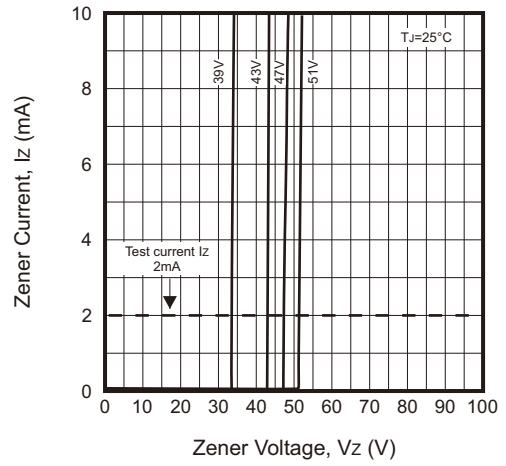


Fig.5 - Junction Capacitance vs Nominal Zener Voltage

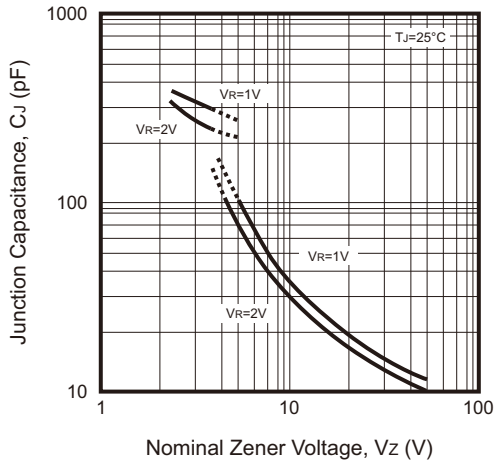


Fig.6 - Typical Temperature Coefficient of Zener Voltage

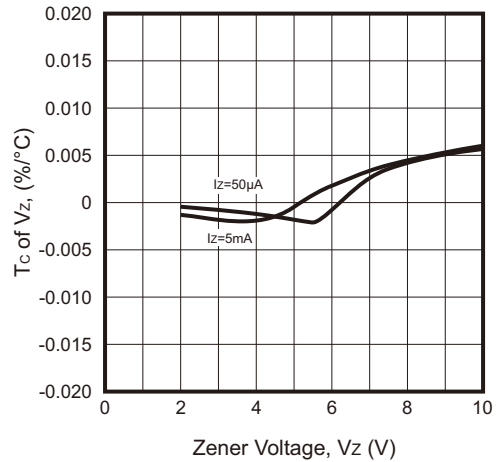
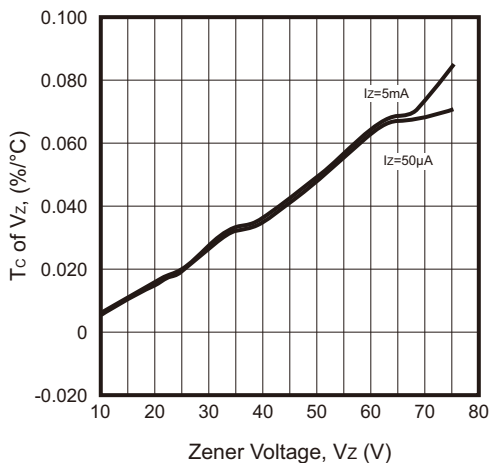
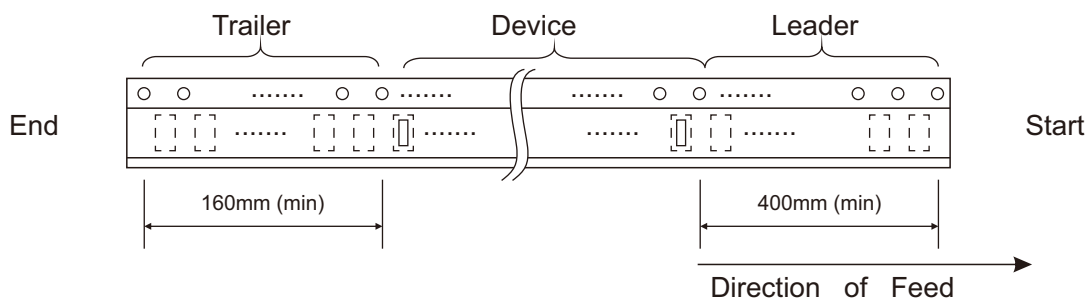
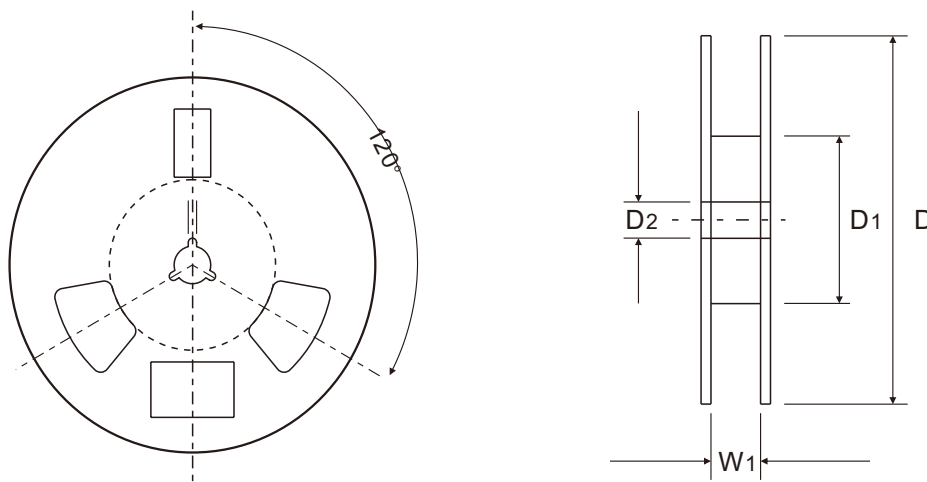
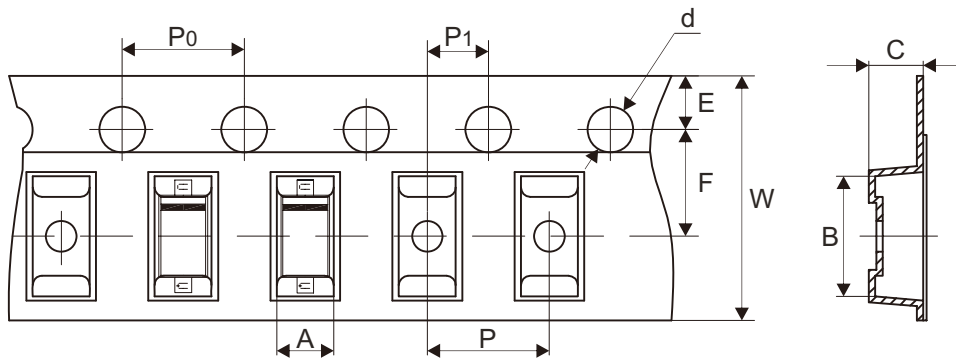


Fig.7 - Typical Temperature Coefficient of Zener Voltage



Reel Taping Specification



| SOD-123 | SYMBOL | A | B | C | d | D | D1 | D2 |
|---------|--------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| | (mm) | 1.85 ± 0.10 | 3.94 ± 0.10 | 1.57 ± 0.10 | 1.55 ± 0.05 | 178.00 ± 1.00 | 54.00 ± 0.50 | 13.00 ± 0.50 |
| | (inch) | 0.073 ± 0.004 | 0.155 ± 0.004 | 0.062 ± 0.004 | 0.061 ± 0.002 | 7.008 ± 0.039 | 2.126 ± 0.020 | 0.512 ± 0.020 |

| SOD-123 | SYMBOL | E | F | P | P1 | P0 | W | W1 |
|---------|--------|---------------|---------------|---------------|---------------|---------------|--------------------------|---------------|
| | (mm) | 1.75 ± 0.10 | 3.50 ± 0.05 | 4.00 ± 0.10 | 2.00 ± 0.05 | 4.00 ± 0.10 | 8.00 + 0.30 - 0.10 | 9.50 ± 1.00 |
| | (inch) | 0.069 ± 0.004 | 0.138 ± 0.002 | 0.157 ± 0.004 | 0.079 ± 0.002 | 0.157 ± 0.004 | 0.315 + 0.012 - 0.004 | 0.374 ± 0.039 |

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