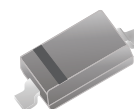


# ACZRV52B-HF Series

RoHS Device

Halogen Free



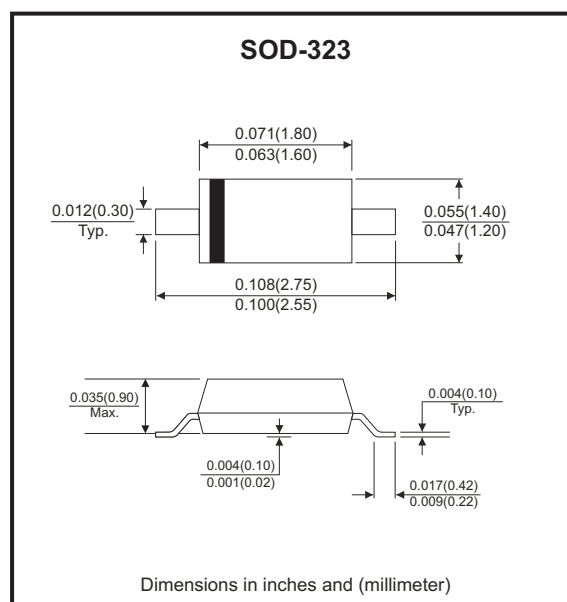
## Features

- Wide zener voltage range selection: 3V to 39V
- V<sub>Z</sub> Tolerance selection of  $\pm 2\%$ .
- Ideally suited for automated assembly processes.
- Comply with AEC-Q101

## Mechanical data

- Case: Molded plastic, SOD-323
- Mounting position: Any

## Circuit diagram



## Maximum Ratings (T<sub>A</sub>=25°C unless otherwise noted)

| Parameter                                   | Symbol           | Value       | Unit |
|---------------------------------------------|------------------|-------------|------|
| Forward voltage @ I <sub>F</sub> =10mA      | V <sub>F</sub>   | 0.9         | V    |
| Power dissipation                           | P <sub>D</sub>   | 200         | mW   |
| Thermal resistance, junction to ambient air | R <sub>θJA</sub> | 625         | °C/W |
| Junction temperature range                  | T <sub>J</sub>   | 150         | °C   |
| Storage temperature range                   | T <sub>STG</sub> | -55 to +150 | °C   |

Note: 1. These ratings are limiting values above which the serviceability of the diodes may be impaired..

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

| Part Number    | Zener Voltage   |        |        |                   | Maximum Zener Impedance           |                 |                   | Maximum Reverse Current         |      | Typ. Temp. Coefficient  |      | Marking Code |
|----------------|-----------------|--------|--------|-------------------|-----------------------------------|-----------------|-------------------|---------------------------------|------|-------------------------|------|--------------|
|                | V <sub>ZT</sub> |        |        | @ I <sub>ZT</sub> | Z <sub>ZT</sub> @ I <sub>ZT</sub> | Z <sub>ZK</sub> | @ I <sub>ZK</sub> | I <sub>R</sub> @ V <sub>R</sub> |      | @ I <sub>ZT</sub> mV/°C |      |              |
|                | Nom(V)          | Min(V) | Max(V) | (mA)              | (Ω)                               | (Ω)             | (mA)              | (μA)                            | (V)  | Min.                    | Max. |              |
| ACZRV52B3V0-HF | 3.0             | 2.94   | 3.06   | 5.0               | 95                                | 600             | 1.0               | 10                              | 1.0  | -3.5                    | 0    | 2Z           |
| ACZRV52B3V3-HF | 3.3             | 3.23   | 3.37   | 5.0               | 95                                | 600             | 1.0               | 5                               | 1.0  | -3.5                    | 0    | 3Z           |
| ACZRV52B3V6-HF | 3.6             | 3.53   | 3.67   | 5.0               | 90                                | 600             | 1.0               | 5                               | 1.0  | -3.5                    | 0    | 4Z           |
| ACZRV52B3V9-HF | 3.9             | 3.82   | 3.98   | 5.0               | 90                                | 600             | 1.0               | 3                               | 1.0  | -3.5                    | 0    | 5Z           |
| ACZRV52B4V3-HF | 4.3             | 4.21   | 4.39   | 5.0               | 90                                | 600             | 1.0               | 3                               | 1.0  | -3.5                    | 0    | 6Z           |
| ACZRV52B4V7-HF | 4.7             | 4.61   | 4.79   | 5.0               | 80                                | 600             | 1.0               | 3                               | 2.0  | -3.5                    | 0.2  | 7Z           |
| ACZRV52B5V1-HF | 5.1             | 5.0    | 5.20   | 5.0               | 60                                | 500             | 1.0               | 2                               | 2.0  | -2.7                    | 1.2  | 8Z           |
| ACZRV52B5V6-HF | 5.6             | 5.49   | 5.71   | 5.0               | 40                                | 480             | 1.0               | 1                               | 2.0  | -2.0                    | 2.5  | 9Z           |
| ACZRV52B6V2-HF | 6.2             | 6.08   | 6.32   | 5.0               | 10                                | 400             | 1.0               | 3                               | 4.0  | 0.4                     | 3.7  | AZ           |
| ACZRV52B6V8-HF | 6.8             | 6.66   | 6.94   | 5.0               | 15                                | 150             | 1.0               | 2                               | 4.0  | 1.2                     | 4.5  | BZ           |
| ACZRV52B7V5-HF | 7.5             | 7.35   | 7.65   | 5.0               | 15                                | 80              | 1.0               | 1                               | 5.0  | 2.5                     | 5.3  | CZ           |
| ACZRV52B8V2-HF | 8.2             | 8.04   | 8.36   | 5.0               | 15                                | 80              | 1.0               | 0.7                             | 5.0  | 3.2                     | 6.2  | DZ           |
| ACZRV52B9V1-HF | 9.1             | 8.92   | 9.28   | 5.0               | 15                                | 100             | 1.0               | 0.5                             | 6.0  | 3.8                     | 7.0  | EZ           |
| ACZRV52B10-HF  | 10              | 9.80   | 10.20  | 5.0               | 20                                | 150             | 1.0               | 0.2                             | 7.0  | 4.5                     | 8.0  | FZ           |
| ACZRV52B11-HF  | 11              | 10.78  | 11.22  | 5.0               | 20                                | 150             | 1.0               | 0.1                             | 8.0  | 5.4                     | 9.0  | GZ           |
| ACZRV52B12-HF  | 12              | 11.76  | 12.24  | 5.0               | 25                                | 150             | 1.0               | 0.1                             | 8.0  | 6.0                     | 10.0 | HZ           |
| ACZRV52B13-HF  | 13              | 12.74  | 13.26  | 5.0               | 30                                | 170             | 1.0               | 0.1                             | 8.0  | 7.0                     | 11.0 | JZ           |
| ACZRV52B15-HF  | 15              | 14.70  | 15.30  | 5.0               | 30                                | 200             | 1.0               | 0.05                            | 10.5 | 9.2                     | 13.0 | KZ           |
| ACZRV52B16-HF  | 16              | 15.68  | 16.32  | 5.0               | 40                                | 200             | 1.0               | 0.05                            | 11.2 | 10.4                    | 14.0 | LZ           |
| ACZRV52B18-HF  | 18              | 17.64  | 18.36  | 5.0               | 45                                | 225             | 1.0               | 0.05                            | 12.6 | 12.4                    | 16.0 | MZ           |
| ACZRV52B20-HF  | 20              | 19.60  | 20.40  | 5.0               | 55                                | 225             | 1.0               | 0.05                            | 14.0 | 14.4                    | 18.0 | NZ           |
| ACZRV52B22-HF  | 22              | 21.56  | 22.44  | 5.0               | 55                                | 250             | 1.0               | 0.05                            | 15.4 | 16.4                    | 20.0 | PZ           |
| ACZRV52B24-HF  | 24              | 23.52  | 24.48  | 5.0               | 70                                | 250             | 1.0               | 0.05                            | 16.8 | 18.4                    | 22.0 | RZ           |
| ACZRV52B27-HF  | 27              | 26.46  | 27.54  | 2.0               | 80                                | 300             | 0.5               | 0.05                            | 18.9 | 21.4                    | 25.3 | SZ           |
| ACZRV52B30-HF  | 30              | 29.40  | 30.60  | 2.0               | 80                                | 300             | 0.5               | 0.05                            | 21.0 | 24.4                    | 29.4 | TZ           |
| ACZRV52B33-HF  | 33              | 32.34  | 33.66  | 2.0               | 80                                | 325             | 0.5               | 0.05                            | 23.0 | 27.4                    | 33.4 | UZ           |
| ACZRV52B36-HF  | 36              | 35.28  | 36.72  | 2.0               | 90                                | 350             | 0.5               | 0.05                            | 25.2 | 30.4                    | 37.4 | VZ           |
| ACZRV52B39-HF  | 39              | 38.22  | 39.78  | 2.0               | 130                               | 350             | 0.5               | 0.05                            | 27.3 | 33.4                    | 41.2 | WZ           |

Company reserves the right to improve product design , functions and reliability without notice.

REV: A

TYPICAL RATING AND CHARACTERISTIC CURVES (ACZRV52B-HF Series)

Fig.1 - Power Derating Curve

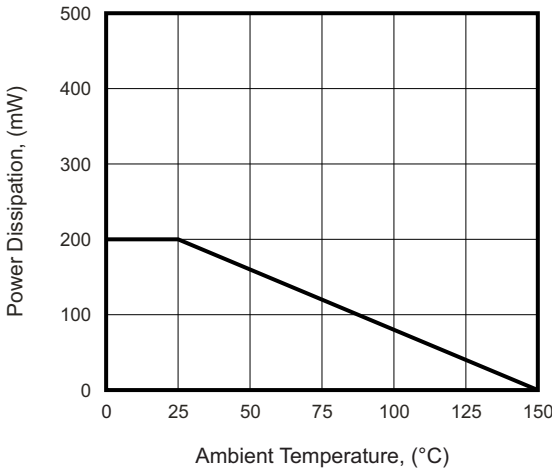


Fig.2 - Zener Breakdown Characteristics

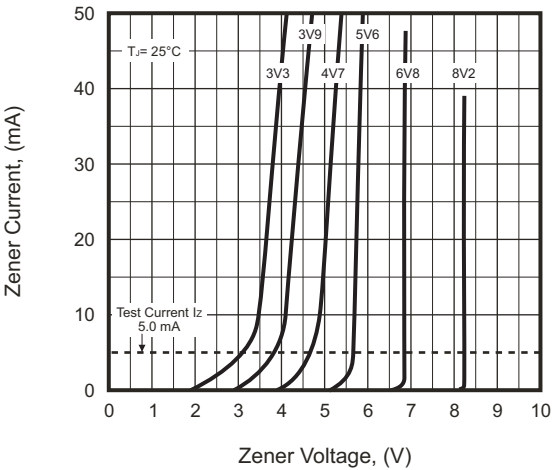


Fig.3 - Zener Breakdown Characteristics

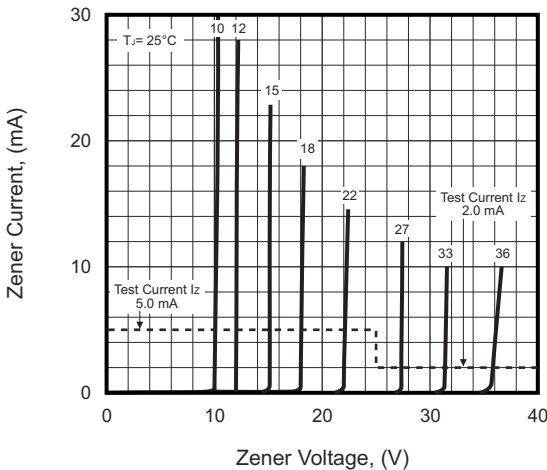
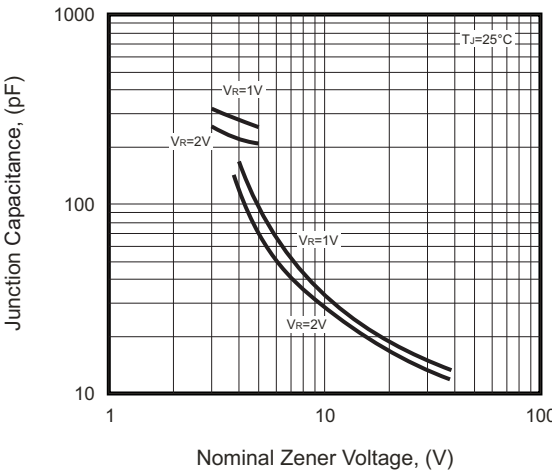
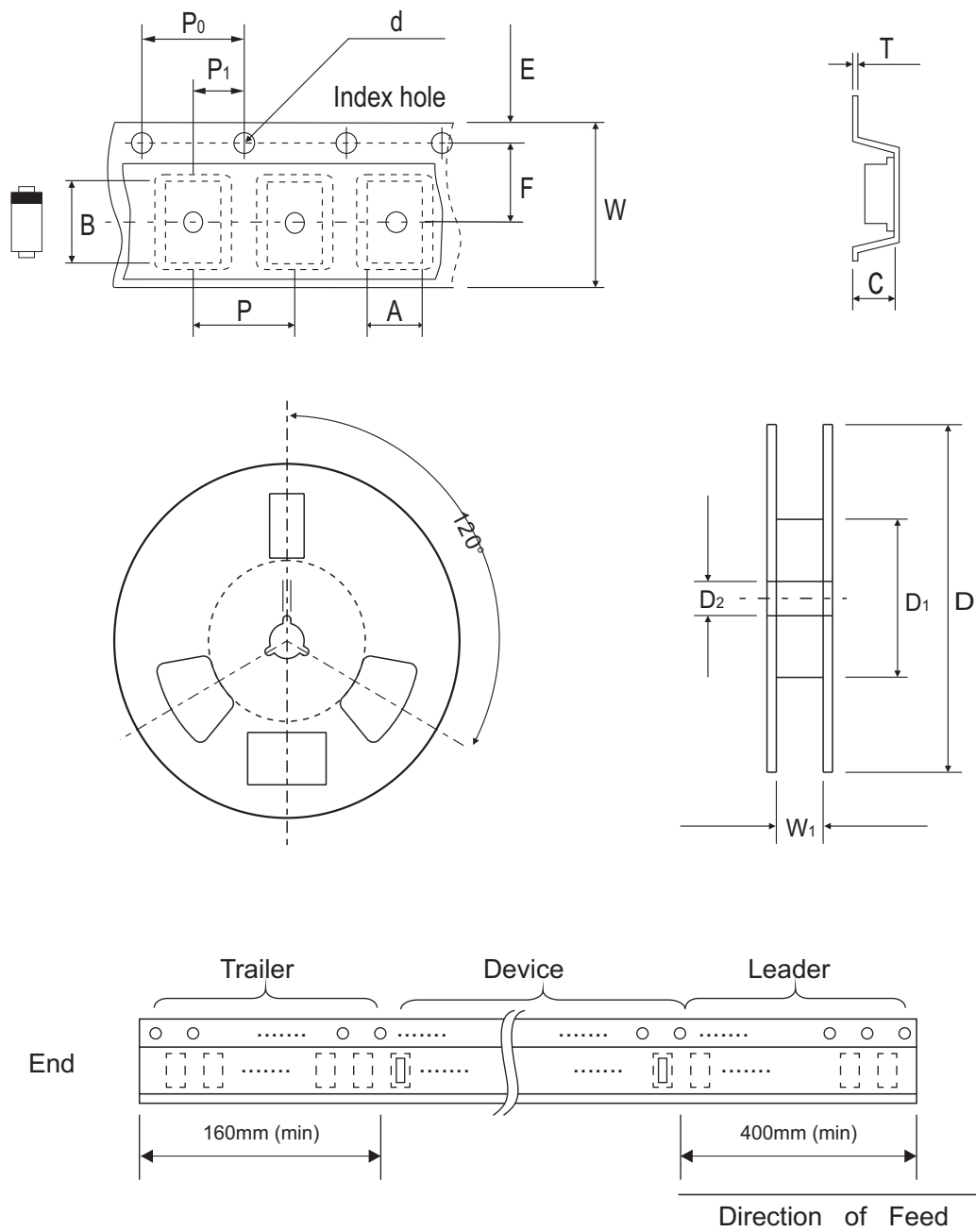


Fig.4 - Junction Capacitance VS. Nominal Zener Voltage



Reel Taping Specification



| SOD-323 | SYMBOL | A             | B             | C             | d             | D             | D1            | D2            |
|---------|--------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|         | (mm)   | 1.46 ± 0.05   | 3.30 ± 0.05   | 1.25 ± 0.05   | 1.50 ± 0.10   | 178.00 ± 1.00 | 54.00 ± 0.50  | 13.00 ± 0.50  |
|         | (inch) | 0.057 ± 0.002 | 0.130 ± 0.002 | 0.049 ± 0.002 | 0.059 ± 0.004 | 7.008 ± 0.039 | 2.126 ± 0.020 | 0.512 ± 0.020 |

| SOD-323 | SYMBOL | E             | F             | P             | P <sub>0</sub> | P <sub>1</sub> | W                       | W <sub>1</sub> |
|---------|--------|---------------|---------------|---------------|----------------|----------------|-------------------------|----------------|
|         | (mm)   | 1.75 ± 0.10   | 3.50 ± 0.05   | 4.00 ± 0.10   | 4.00 ± 0.10    | 2.00 ± 0.05    | 8.00 ± 0.30 / - 0.10    | 9.50 ± 1.00    |
|         | (inch) | 0.069 ± 0.004 | 0.138 ± 0.002 | 0.158 ± 0.004 | 0.158 ± 0.004  | 0.079 ± 0.002  | 0.315 ± 0.012 / - 0.004 | 0.374 ± 0.039  |

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## Marking Code

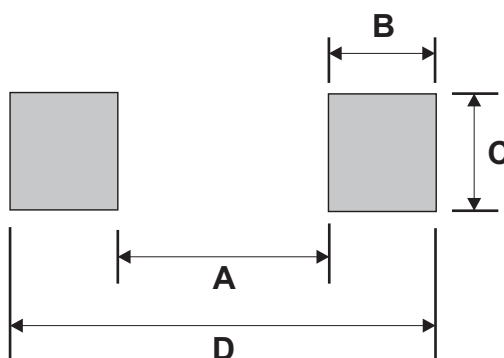
| Part Number        | Marking Code |
|--------------------|--------------|
| ACZRV52B-HF Series | See Page 2   |



XX/XXX = Product type marking code

## Suggested PAD Layout

| SIZE | SOD-323 |        |
|------|---------|--------|
|      | (mm)    | (inch) |
| A    | 1.60    | 0.063  |
| B    | 0.63    | 0.024  |
| C    | 0.83    | 0.033  |
| D    | 2.85    | 0.112  |



Note:

1. The pad layout is for reference purposes only.

## Standard Packaging

| Case Type | REEL PACK       |                     |
|-----------|-----------------|---------------------|
|           | REEL<br>( pcs ) | Reel Size<br>(inch) |
| SOD-323   | 3,000           | 7                   |