



DESCRIPTION

The popular 1N5985 thru 1N6031 series of 0.5 watt Zener Voltage Regulators provides a selection from 2.4 to 200 volts in standard 5% or 10% tolerances as well as tighter tolerances identified by different suffix letters on the part number. These glass axial-leaded DO-35 Zeners are also available in various military screening levels by adding a prefix identifier as described in the Features section. Microsemi also offers numerous other Zener products to meet higher and lower power applications.

APPEARANCE

**DO-35
(DO-204AH)**



IMPORTANT: For the most current data, consult MICROSEMI's website: <http://www.microsemi.com>

FEATURES

- JEDEC registered 1N5985 to 1N6031
- Similar to operating current conditions of the BZX55 Pro Electron series of Zener products in Europe
- Internal bonds optionally available with "-1" suffix
- RoHS Compliant devices available by adding "e3" suffix
- Options for screening in accordance with MIL-PRF-19500 for JAN, JANTX, JANTXV, and JANS are available by adding MQ, MX, MV, or MSP prefixes respectively to part numbers with "-1" suffix.
- Surface mount equivalents available as MLL5985 to MLL6031 in the DO-213AA MELF style package including "-1" suffix options (consult factory for others)
- DO-7 glass body axial-leaded Zener equivalents are also available

APPLICATIONS / BENEFITS

- Regulates voltage over a broad operating current and temperature range
- Extensive selection from 2.4 to 200 V
- Standard voltage tolerances are plus/minus 5% with B suffix, 10 % with A suffix identification
- Tight tolerances available in plus or minus 2% or 1% with C or D suffix respectively
- Flexible axial-lead mounting terminals
- Nonsensitive to ESD (MIL-STD-750 Method 1020)
- Minimal capacitance (see Figure 2)
- Inherently radiation hard as described in Microsemi MicroNote 050

MAXIMUM RATINGS

- Power dissipation at 25°C: 0.5 watts (also see derating in Figure 1).
- Operating and Storage temperature: -65°C to +175°C
- Thermal Resistance: 250 °C/W junction to lead at 3/8 (10 mm) lead length from body, or 310°C/W junction to ambient when mounted on FR4 PC board (1 oz Cu) with 4 mm² copper pads and track width 1 mm, length 25 mm
- Steady-State Power: 0.5 watts at $T_L \leq 50^\circ\text{C}$ 3/8 inch (10 mm) from body or 0.48 W at $T_A \leq 25^\circ\text{C}$ when mounted on FR4 PC board as described for thermal resistance above (also see Figure1)
- Forward voltage @200 mA: 1.1 volts (maximum)
- Solder Temperatures: 260 °C for 10 s (max)

MECHANICAL AND PACKAGING

- CASE: Hermetically sealed axial-lead glass DO-35 (DO-204AH) package
- TERMINALS: Tin-lead or RoHS Compliant matte-Tin plating solderable per MIL-STD-750, method 2026
- POLARITY: Cathode indicated by band. Diode to be operated with the banded end positive with respect to the opposite end for Zener regulation
- MARKING: Part number
- TAPE & REEL option: Standard per EIA-296 (add "TR" suffix to part number)
- WEIGHT: 0.2 grams
- See package dimensions on last page

GRAPHS

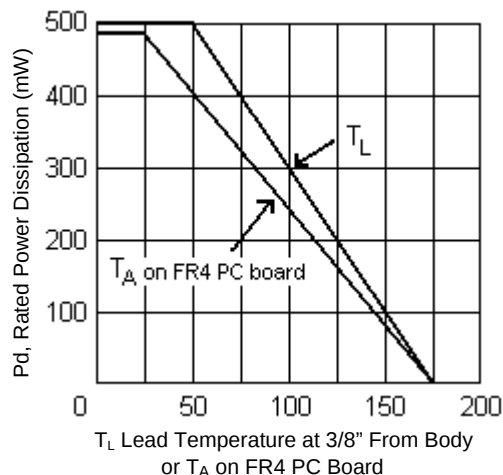


FIGURE 1
POWER DERATING CURVE

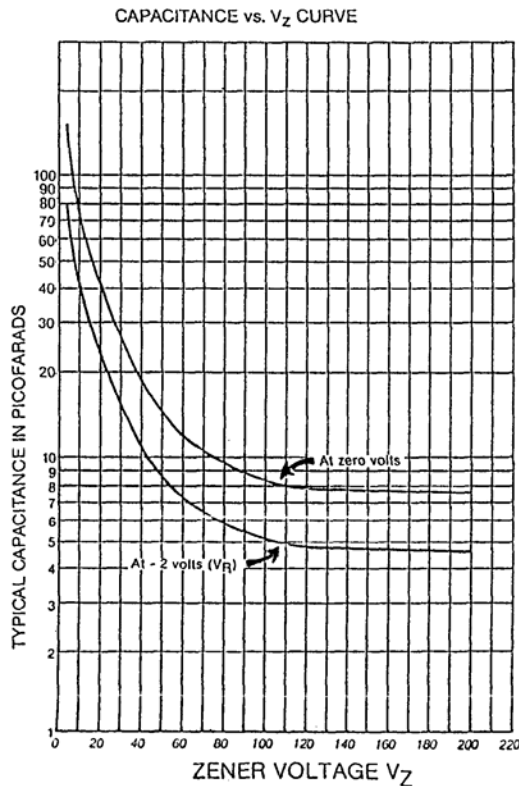
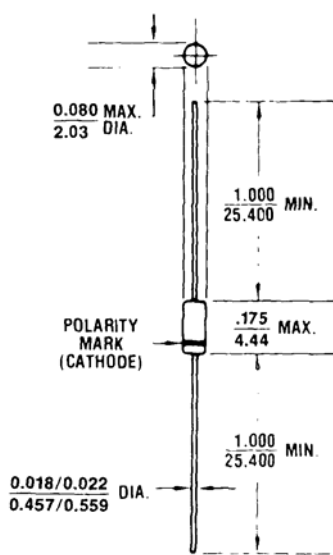


FIGURE 2
CAPACITANCE vs. ZENER VOLTAGE
(TYPICAL)

PACKAGE DIMENSIONS



All dimensions in INCH
mm