

T-11-13

Z0/Z4 SERIES

Hermetically Sealed Package ■ Voltage Regulator Diode
Released to BS 9305-F078 (3 – 200 Volts) ■ Voltage Range 3V0 to 400 Volts
1 Watt Steady State ■ 400 Watt Peak Power

APPLICATIONS

- A range of medium power zener and avalanche diodes to BS 9305-F078 in a hermetically sealed DO29 glass package in both unipolar and bipolar configurations.

FEATURES

- All glass construction DO29 package
- 400 Watt surge capability at 1 mS
- Excellent clamping capability
- Typical I_R less than $10 \mu A$ above 10V
- Fast response time: typically less than 1.0pS from 0 volts to BV min.
- High temperature soldering guaranteed 300°C/10-seconds
 .375" (9.5mm) lead length/5lb (2.3Kg) tension
- T operating $-55^\circ C$ to $+175^\circ C$

MECHANICAL CHARACTERISTICS

- Case: Hermetically sealed DO29 outline
- Finish: All external surfaces are corrosion resistant and leads solderable
- Identification: Body marked with Type No. and logo
- Weight: 0.47 grammes approximately

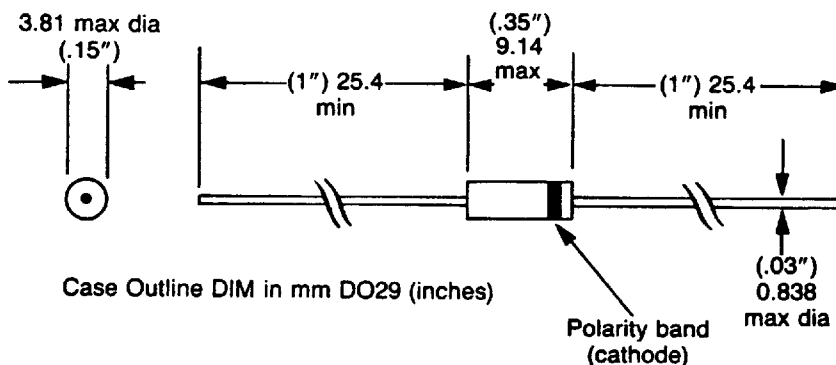
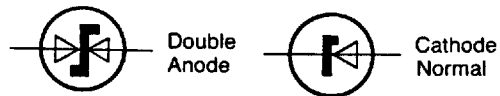
ELECTRICAL CHARACTERISTICS

- Forward Voltage V_f 1.1v max. @ $I_f = 1A$
 - V_z measured with pulse $\leq 20mS$
 - R_z determined with DC plus 10% superimposed AC @ 1KHz
- All electrical characteristics $25^\circ C$ unless otherwise stated

OTHER TYPES AVAILABLE

- | | |
|--------------------|--------------------|
| IN1875 Thru IN1888 | IN4323 Thru IN4358 |
| IN3016 Thru IN3051 | IN4400 Thru IN4435 |
| IN3537 | IN4628 Thru IN4677 |
| IN3675 Thru IN3710 | IN4728 Thru IN4764 |
| IN3821 Thru IN3830 | IN4831 Thru IN4860 |
| IN4158 Thru IN4193 | |

AVAILABLE IN THE FOLLOWING CONFIGURATIONS



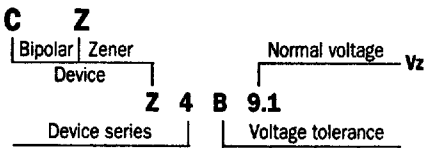


Z0 - Electrical Characteristics @ 25°C

| Type | + 5% Voltage* Tolerance | | Rz ohms* Max | Max Ir at Vr | | Temp Coef %/°C |
|--------|-------------------------|------|--------------|--------------|-------|----------------|
| | | | | µA | Volts | |
| Z0B0.7 | 0.6 | 0.7 | 10 | 10 | 0.25 | -0.20 |
| Z0B1.4 | 1.3 | 1.5 | 20 | 10 | 0.50 | -0.09 |
| Z0B2.0 | 1.9 | 2.1 | 70 | 10 | 0.50 | -0.09 |
| Z0B2.2 | 2.1 | 2.3 | 70 | 10 | 0.50 | -0.09 |
| Z0B2.4 | 2.2 | 2.6 | 75 | 10 | 0.50 | -0.08 |
| Z0B2.7 | 2.5 | 2.8 | 75 | 10 | 1.0 | -0.08 |
| Z0B3.0 | 2.8 | 3.2 | 75 | 10 | 1.0 | -0.08 |
| Z0B3.3 | 3.1 | 3.5 | 80 | 10 | 1.0 | -0.07 |
| Z0B3.6 | 3.4 | 3.8 | 80 | 10 | 1.0 | -0.06 |
| Z0B3.9 | 3.7 | 4.1 | 80 | 10 | 1.0 | -0.05 |
| Z0B4.3 | 4.0 | 4.6 | 75 | 10 | 1.0 | -0.04 |
| Z0B4.7 | 4.4 | 5.0 | 65 | 10 | 1.0 | -0.02 |
| Z0B5.1 | 4.8 | 5.4 | 60 | 10 | 1.5 | +0.02 |
| Z0B5.8 | 5.2 | 6.0 | 10 | 10 | 1.5 | +0.02 |
| Z0B6.2 | 5.8 | 6.6 | 10 | 10 | 4.3 | +0.02 |
| Z0B6.8 | 6.4 | 7.2 | 10 | 10 | 4.7 | +0.03 |
| Z0B7.5 | 7.0 | 7.9 | 10 | 10 | 5.1 | +0.04 |
| Z0B8.2 | 7.7 | 8.7 | 10 | 10 | 5.6 | +0.05 |
| Z0B9.1 | 7.7 | 8.7 | 12 | 10 | 6.2 | +0.06 |
| Z0B10 | 9.4 | 10.6 | 15 | 10 | 7.5 | +0.07 |
| Z0B11 | 10.4 | 11.6 | 18 | 10 | 8.2 | +0.07 |
| Z0B12 | 11.4 | 12.7 | 20 | 10 | 9.1 | +0.07 |
| Z0B13 | 12.4 | 14.1 | 23 | 10 | 10 | +0.07 |
| Z0B15 | 13.8 | 15.6 | 25 | 10 | 11 | +0.08 |
| Z0B16 | 15.3 | 17.1 | 30 | 10 | 12 | +0.08 |
| Z0B18 | 16.8 | 19.1 | 35 | 10 | 13 | +0.08 |
| Z0B20 | 18.8 | 21.2 | 40 | 10 | 15 | +0.08 |
| Z0B22 | 20.8 | 23.3 | 50 | 10 | 16 | +0.09 |
| Z0B24 | 22.7 | 25.9 | 60 | 10 | 18 | +0.09 |
| Z0B27 | 25.1 | 28.9 | 65 | 10 | 20 | +0.09 |
| Z0B30 | 28.0 | 32.0 | 70 | 10 | 22 | +0.09 |
| Z0B33 | 31.0 | 35.0 | 70 | 10 | 24 | +0.10 |
| Z0B36 | 34.0 | 38.0 | 70 | 10 | 27 | +0.10 |
| Z0B39 | 37.0 | 41.0 | 75 | 10 | 30 | +0.10 |

*Iz = 5mA

Code Interpretation



A = ±1% H = ±2% B = ±5% C = ±10% D = ±15%

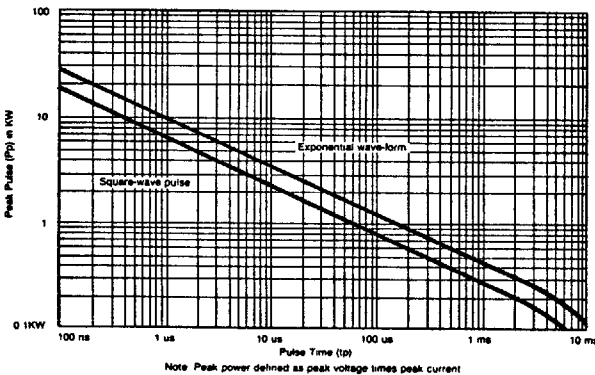
For BS device specify conforming to BS 9300 or BS 9305-F-078 Issue 2. Full specification available on request.

Z4 - Electrical Characteristics @ 25°C

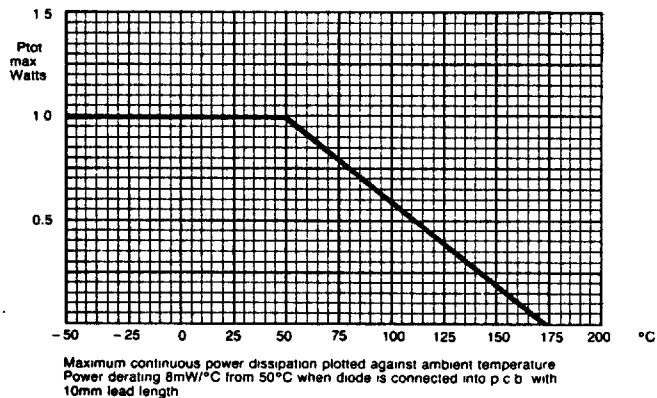
| Type | + 5% Voltage Tolerance | | Iz mA | Rz ohms | | Max IR at VR | | Izsm Amps | Temp Coef %/°C |
|--------|------------------------|------|-------|---------|------|--------------|-------|-----------|----------------|
| | | | | Typ. | Max. | µA | Volts | | |
| Z4B3.0 | 2.8 | 3.2 | 100 | 2 | 14 | 300 | 1.0 | 83 | -0.08 |
| Z4B3.3 | 3.1 | 3.5 | 100 | 2 | 13 | 300 | 1.0 | 78 | -0.07 |
| Z4B3.6 | 3.4 | 3.8 | 100 | 2 | 12 | 250 | 1.0 | 69 | -0.06 |
| Z4B3.9 | 3.7 | 4.1 | 100 | 2 | 11 | 150 | 1.5 | 64 | -0.05 |
| Z4B4.3 | 4.0 | 4.6 | 100 | 2 | 10 | 100 | 1.5 | 58 | -0.04 |
| Z4B4.7 | 4.4 | 5.0 | 100 | 2 | 9 | 100 | 1.5 | 53 | -0.03 |
| Z4B5.1 | 4.8 | 5.4 | 100 | 2 | 8 | 50 | 1.5 | 49 | +0.02 |
| Z4B5.6 | 5.2 | 6.0 | 50 | 1.5 | 7 | 50 | 1.5 | 45 | +0.02 |
| Z4B6.2 | 5.8 | 6.6 | 50 | 1.0 | 7 | 50 | 4.3 | 40 | +0.03 |
| Z4B6.6 | 6.4 | 7.2 | 50 | 0.3 | 6 | 30 | 4.7 | 37 | +0.04 |
| Z4B7.5 | 7.0 | 7.9 | 50 | 0.5 | 6 | 30 | 5.1 | 33 | +0.05 |
| Z4B8.2 | 7.7 | 8.7 | 50 | 1.0 | 7 | 10 | 5.6 | 30.5 | +0.06 |
| Z4B9.1 | 8.5 | 9.6 | 50 | 2 | 8 | 10 | 6.2 | 27.5 | +0.065 |
| Z4B10 | 9.4 | 10.6 | 50 | 2 | 8 | 10 | 6.8 | 25.0 | +0.07 |
| Z4B11 | 10.4 | 11.6 | 25 | 4 | 9 | 10 | 7.5 | 22.7 | +0.07 |
| Z4B12 | 11.4 | 12.7 | 25 | 5 | 9 | 10 | 8.2 | 20.8 | +0.075 |
| Z4B13 | 12.4 | 14.1 | 25 | 6 | 10 | 10 | 9.1 | 19.2 | +0.075 |
| Z4B15 | 13.8 | 15.6 | 25 | 8 | 10 | 10 | 10 | 16.7 | +0.08 |
| Z4B16 | 15.3 | 17.1 | 25 | 10 | 12 | 10 | 11 | 15.6 | +0.08 |
| Z4B18 | 16.8 | 19.1 | 25 | 12 | 15 | 10 | 12 | 13.9 | +0.08 |
| Z4B20 | 18.8 | 21.2 | 25 | 12 | 15 | 10 | 12 | 12.5 | +0.085 |
| Z4B22 | 20.0 | 23.3 | 10 | 20 | 27 | 10 | 15 | 11.4 | +0.09 |
| Z4B24 | 22.7 | 25.9 | 10 | 21 | 30 | 10 | 16 | 10.4 | +0.09 |
| Z4B27 | 25.1 | 28.9 | 10 | 23 | 32 | 10 | 18 | 9.3 | +0.095 |
| Z4B30 | 28 | 32 | 10 | 25 | 34 | 10 | 20 | 8.3 | +0.095 |
| Z4B33 | 31 | 35 | 10 | 27 | 6 | 10 | 22 | 7.58 | +0.10 |
| Z4B36 | 34 | 38 | 10 | 30 | 3 | 10 | 24 | 6.94 | +0.10 |
| Z4B39 | 37 | 41 | 10 | 34 | 45 | 10 | 27 | 6.41 | +0.10 |
| Z4B43 | 40 | 46 | 10 | 45 | 60 | 10 | 30 | 5.81 | +0.105 |
| Z4B47 | 44 | 50 | 10 | 50 | 70 | 10 | 33 | 5.32 | +0.105 |
| Z4B51 | 48 | 54 | 5 | 68 | 90 | 10 | 36 | 4.90 | +0.105 |
| Z4B56 | 52 | 60 | 5 | 75 | 100 | 10 | 39 | 4.46 | +0.105 |
| Z4B62 | 58 | 66 | 5 | 83 | 110 | 10 | 43 | 4.03 | +0.11 |
| Z4B68 | 64 | 72 | 5 | 90 | 120 | 10 | 47 | 3.68 | +0.11 |
| Z4B75 | 70 | 79 | 5 | 98 | 130 | 10 | 51 | 3.33 | +0.11 |
| Z4B82 | 77 | 87 | 5 | 130 | 175 | 10 | 56 | 3.05 | +0.11 |
| Z4B91 | 85 | 96 | 5 | 150 | 200 | 10 | 62 | 2.75 | +0.11 |
| Z4B100 | 94 | 106 | 2.5 | 270 | 350 | 10 | 68 | 2.50 | +0.11 |
| Z4B110 | 104 | 116 | 2.5 | 340 | 450 | 10 | 75 | 2.27 | +0.11 |
| Z4B120 | 114 | 127 | 2.5 | 420 | 550 | 10 | 82 | 2.08 | +0.11 |
| Z4B130 | 124 | 141 | 2.5 | 490 | 650 | 10 | 91 | 1.92 | +0.11 |
| Z4B150 | 138 | 156 | 2.5 | 600 | 800 | 10 | 100 | 1.67 | +0.11 |
| Z4B160 | 153 | 171 | 2.5 | 750 | 1K | 10 | 110 | 1.56 | +0.11 |
| Z4B180 | 168 | 191 | 2.5 | 900 | 1.2K | 10 | 120 | 1.39 | +0.11 |
| Z4B200 | 188 | 212 | 2.5 | 1K | 1.4K | 10 | 130 | 1.25 | +0.11 |
| Z4B400 | 380 | 420 | 1.0 | 2.5K | 5.0K | 10 | 260 | 0.63 | +0.11 |

For bidirectional devices prefix C i.e. C4B130, for devices below 10V IR doubles.

NON-REPETITIVE PEAK PULSE POWER RATING CURVE



POWER DERATING CURVE

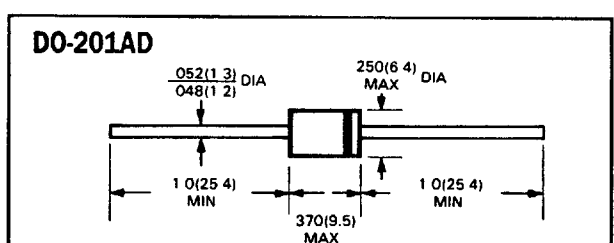
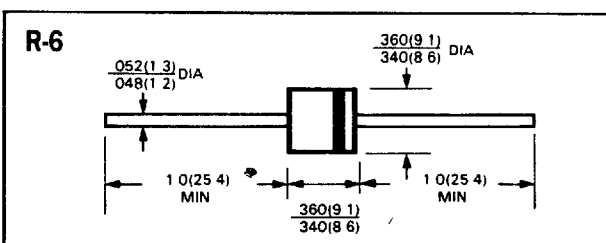
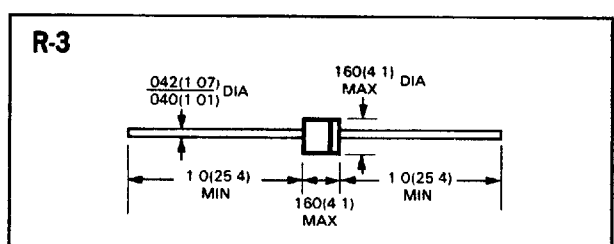
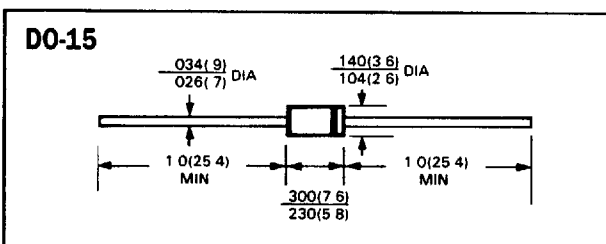
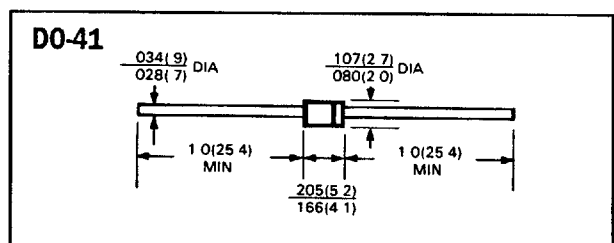
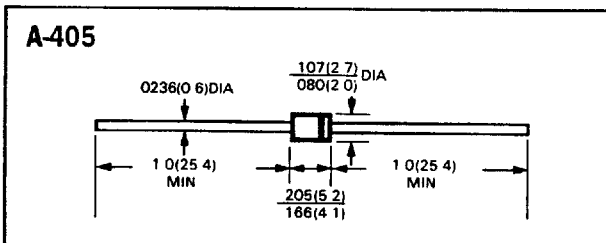
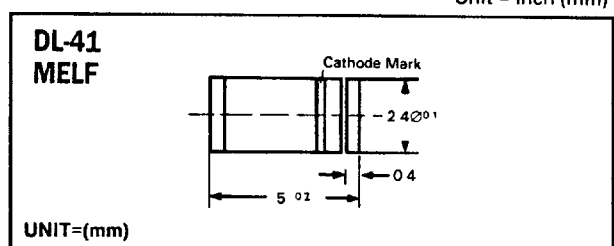
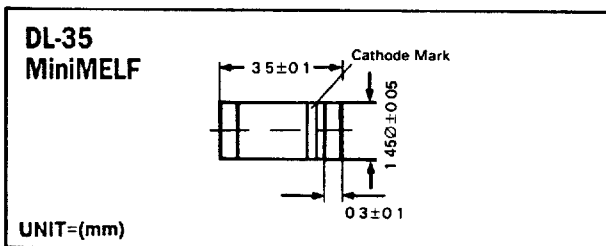


ZENERS, REFERENCE AND LIMITS



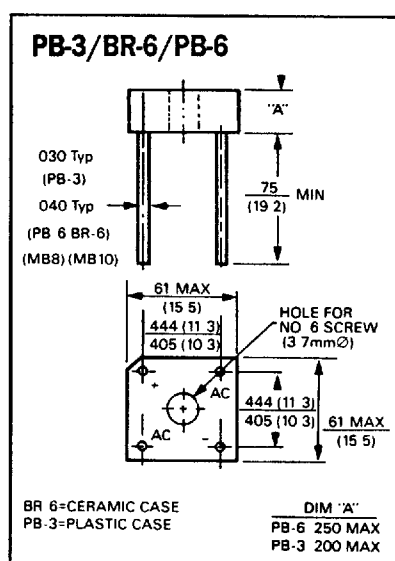
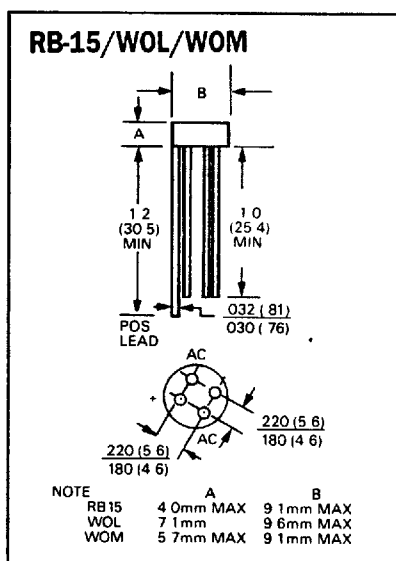
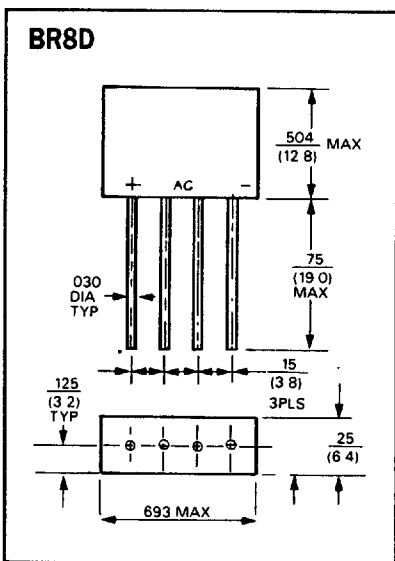
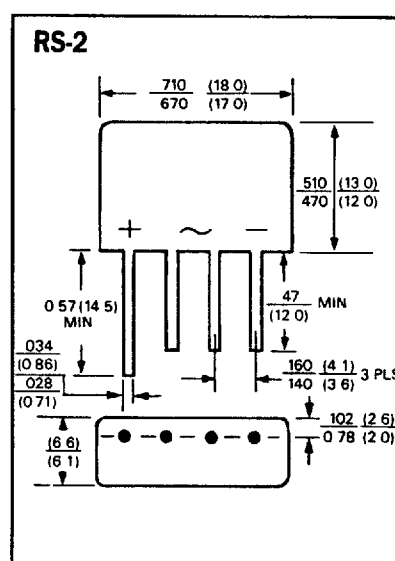
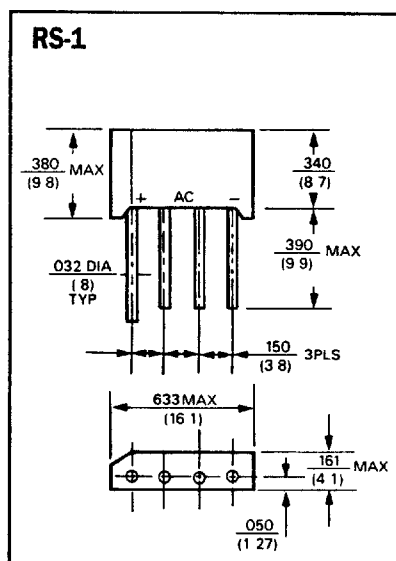
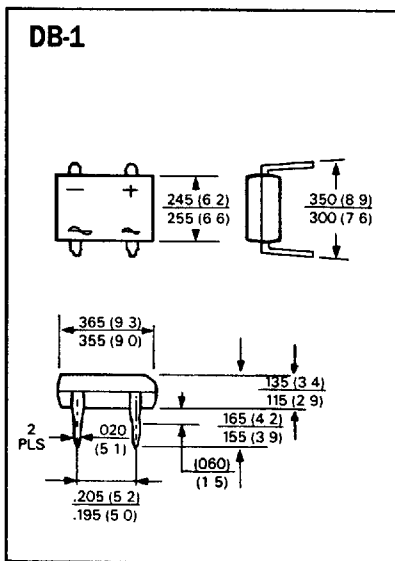
OUTLINE DRAWINGS

Unit = inch (mm)





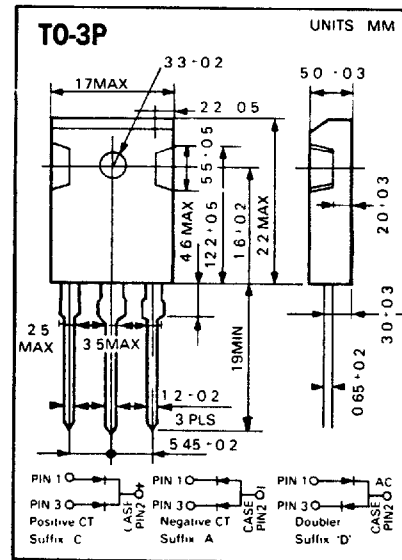
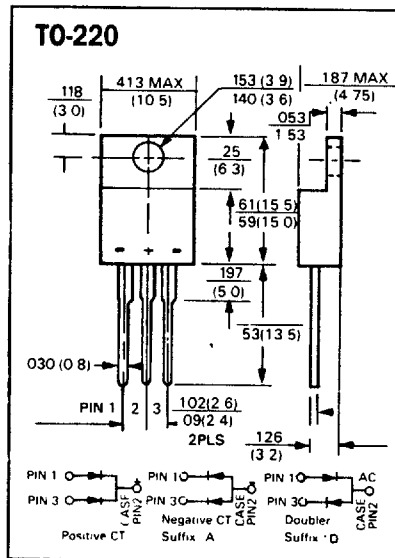
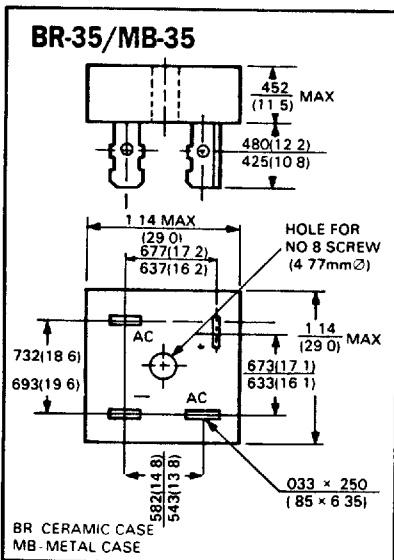
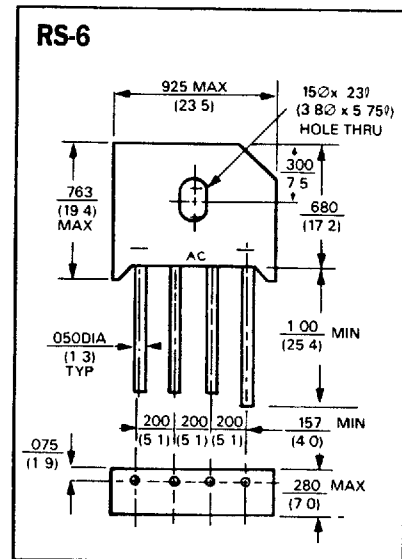
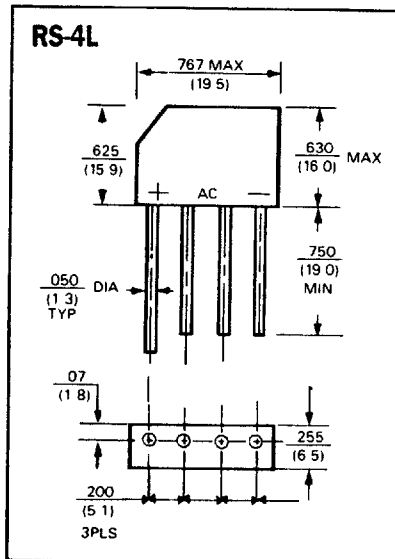
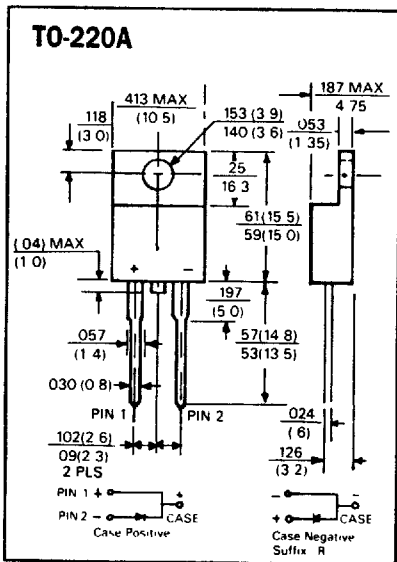
OUTLINE DRAWINGS



RECTIFIER DIODES AND BRIDGE RECTIFIERS

4

OUTLINE DRAWINGS



RECTIFIERS

SEMITRON INDUSTRIES LTD

Product Packaging Specifications

PACKAGING OF AXIAL LEAD DIODES, MELF AND MINI-MELF SURFACE MOUNT DEVICES AND TRANSISTORS

REEL PACK

| OUTLINE | COMPONENT SPACE (mm) | TAPE SPACE (mm) | REEL DIA. (m/m) | QTY./REEL (each) |
|-------------------|-----------------------------------|-----------------|-----------------|-------------------|
| DO-7 | 5.0 | 52.4 | 330 | 10,000 |
| DO-35 | 5.0 | 53 | 355 | 10,000 |
| DO-35 (ZENER) | [RADIAL TAPING SEE FIG. 1, 2 & 3] | | 355 | 5,000 |
| DL-35 (MINI MELF) | See Pg. 37 | | 250/330 | 5,000/10,000 |
| DL-41 (MELF) | See Pg. 37 | | 330 | 5,000 |
| A-405 | 5.0 | 52.4 | 330 | 5,000 |
| A-500 | 5.0 | 52.4 | 203/254/304 | 1,000/2,000/3,000 |
| DO-41 | 5.0 | 52.4 | 330 | 5,000 |
| DO-41 (ZENER) | 5.0 | 53 | 355 | 5,000 |
| DO-15 | 5.0 | 52.4 | 330 | 4,000 |
| R-3 | 5.0 | 52.4 | 330 | 3,000 |
| DO-201AD | 10.0 | 52.4 | 330 | 1,200 |
| R-6 | 10.0 | 52.4 | 330 | 500 |
| TO-92 | [RADIAL TAPING SEE FIG. 4, 5 & 6] | | 355 | 2,000 |
| TO-236/SOT-23 | [SEE SPECIFICATIONS ON PG.38] | | 178 | 3,000 |

PACKAGING OF AXIAL LEAD DIODES AND LEADED TRANSISTORS

AMMO PACK

| OUTLINE | COMPONENT SPACE (mm) | TAPE SPACE (mm) | BOX SIZE (m/m) | QTY./BOX (each) |
|--------------------|-----------------------------|-----------------|----------------|-----------------|
| DO-35 (SW. DIODES) | 5.0 | 53 | 338/147/77 | 15,000 |
| DO-35 | 5.0 | 53 | 255/95/85 | 6,000 |
| DO-35 | 5.0 | 26 | 255/95/51 | 6,000 |
| A-405 | 5.0 | 52.4 | 255/95/78 | 3,000 |
| DO-41 | 5.0 | 52.4 | 255/95/78 | 3,000 |
| DO-41 | 5.0 | 26 | 255/51/95 | 3,000 |
| DO-41 (ZENER) | 5.0 | 53 | 255/95/85 | 3,000 |
| DO-41 (ZENER) | 5.0 | 26 | 255/95/51 | 3,000 |
| DO-15 | 5.0 | 52.4 | 255/95/78 | 2,200 |
| R-3 | 5.0 | 52.4 | 255/95/78 | 2,000 |
| DO-201AD | 10.0 | 52.4 | 255/95/78 | 800 |
| R-6 | 10.0 | 52.4 | 255/95/78 | 300 |
| TO-92 | [RADIAL TAPING, SEE FIG. 4] | | 340/340/45 | 4,000 |

RECTIFIER DIODES AND
BRIDGE RECTIFIERS

4

