

**GLASS PASSIVATED JUNCTION PLASTIC RECTIFIER**

**VOLTAGE RANGE 50 to 1000 Volts CURRENT 1.0 Ampere**

**FEATURES**

- \* High reliability
- \* Low leakage
- \* Low forward voltage drop
- \* High current capability
- \* Glass passivated junction
- \* P/N suffix V means AEC-Q101 qualified
- \* P/N suffix V means Halogen-free

**MECHANICAL DATA**

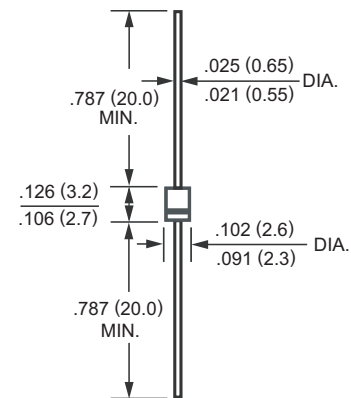
- \* Case: Molded plastic black body
- \* Epoxy: Device has UL flammability classification 94V-O
- \* Lead: MIL-STD-202E method 208C guaranteed
- \* Mounting position: Any
- \* Weight: 0.19 gram

**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**

Ratings at 25 °C ambient temperature unless otherwise specified.  
Single phase, half wave, 60 Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.



**R-1**



**MAXIMUM RATINGS** (At TA = 25°C unless otherwise noted)

| RATINGS                                                                                           | SYMBOL           | 1A1G         | 1A2G | 1A3G | 1A4G | 1A5G | 1A6G | 1A7G | UNITS            |
|---------------------------------------------------------------------------------------------------|------------------|--------------|------|------|------|------|------|------|------------------|
| Maximum Recurrent Peak Reverse Voltage                                                            | VRRM             | 50           | 100  | 200  | 400  | 600  | 800  | 1000 | Volts            |
| Maximum RMS Voltage                                                                               | VRMS             | 35           | 70   | 140  | 280  | 420  | 560  | 700  | Volts            |
| Maximum DC Blocking Voltage                                                                       | VDC              | 50           | 100  | 200  | 400  | 600  | 800  | 1000 | Volts            |
| Maximum Average Forward Rectified Current at TA = 25°C                                            | IO               | 1.0          |      |      |      |      |      |      | Amps             |
| Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC method) | IFSM             | 25           |      |      |      |      |      |      | Amps             |
| Typical Current Squared Time                                                                      | I <sup>2</sup> T | 2.59         |      |      |      |      |      |      | A <sup>2</sup> S |
| Typical Junction Capacitance (Note)                                                               | CJ               | 15           |      |      |      |      |      |      | pF               |
| Typical Thermal Resistance                                                                        | R θ JA           | 60           |      |      |      |      |      |      | °C/W             |
| Operating and Storage Temperature Range                                                           | TJ, TSTG         | -55 to + 150 |      |      |      |      |      |      | °C               |

**ELECTRICAL CHARACTERISTICS** (At TA = 25°C unless otherwise noted)

| CHARACTERISTICS                                                                                |             | SYMBOL | 1A1G | 1A2G | 1A3G | 1A4G | 1A5G | 1A6G | 1A7G | UNITS |
|------------------------------------------------------------------------------------------------|-------------|--------|------|------|------|------|------|------|------|-------|
| Maximum Instantaneous Forward Voltage at 1.0A DC                                               |             | VF     | 1.0  |      |      |      |      |      |      | Volts |
| Maximum DC Reverse Current                                                                     | @TA = 25°C  | IR     | 1.0  |      |      |      |      |      |      | uAmps |
| at Rated DC Blocking Voltage                                                                   | @TA = 150°C |        | 800  |      |      |      |      |      |      |       |
| Maximum Full Load Reverse Current Full Cycle Average<br>.375" (9.5mm) lead length at TL = 75°C |             |        | 100  |      |      |      |      |      |      | uAmps |

NOTES : Measured at 1 MHz and applied reverse voltage of 4.0 volts

2018-01  
REV:C

# RATING AND CHARACTERISTIC CURVES ( 1A1G THRU 1A7G )

FIG. 1 - TYPICAL FORWARD CURRENT DERATING CURVE

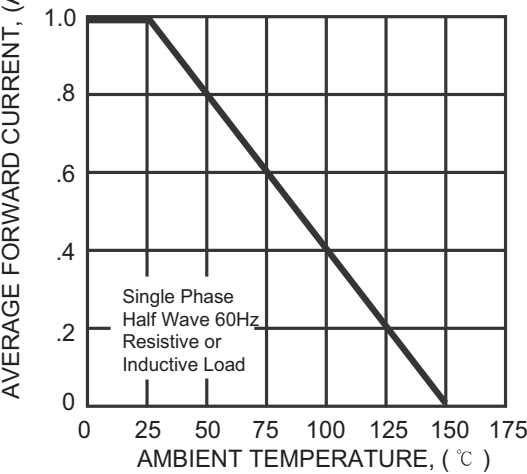


FIG. 2 - MAXIMUM INSTANTANEOUS FORWARD CHARACTERISTICS

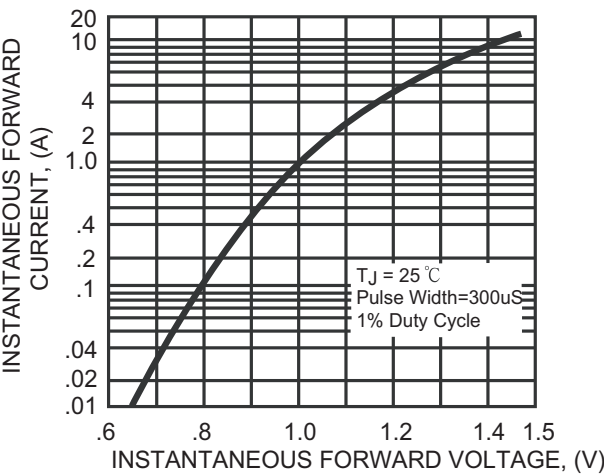


FIG. 3 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

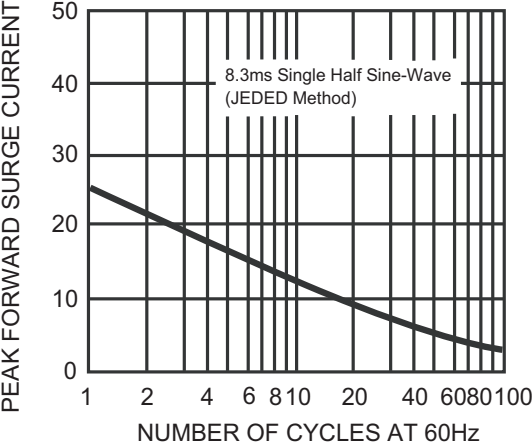


FIG. 4 - MAXIMUM REVERSE CHARACTERISTICS

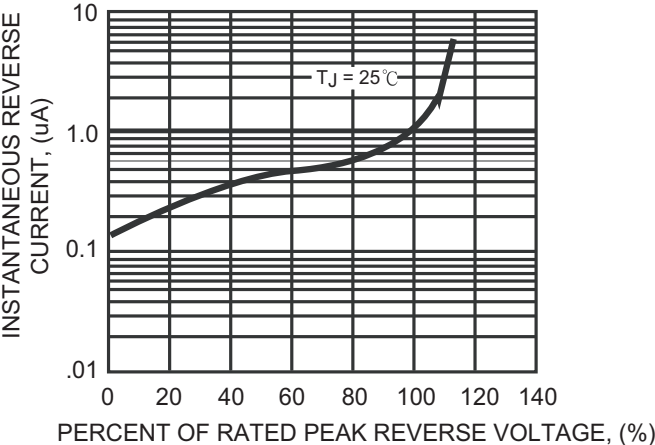
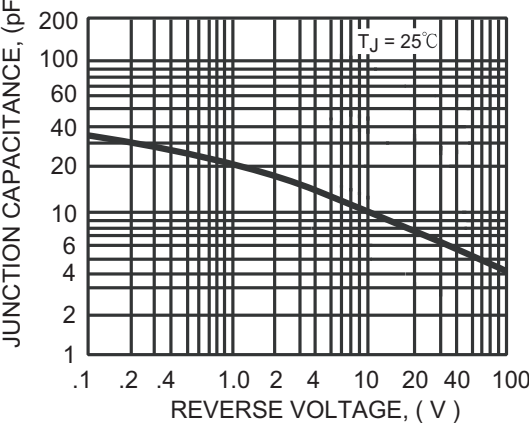


FIG. 5 - TYPICAL JUNCTION CAPACITANCE



# AXIAL LEAD TAPING SPECIFICATIONS FOR RECTIFIERS

Axial lead devices are packed in accordance with EIA standard RS-296-D and specifications given below.

| COMPONENT<br>OUTLINE | COMPONENT<br>PITCH A       | INNER TAPE<br>PITCH B      |                            | CUMULATIVE PITCH<br>TOLERANCE |
|----------------------|----------------------------|----------------------------|----------------------------|-------------------------------|
|                      | $\pm 0.5\text{mm} (.020")$ | $\pm 0.5\text{mm} (.020")$ | $\pm 1.5\text{mm} (.059")$ |                               |
| T-1                  | 5.0mm                      | 26.0mm                     |                            | 2.0mm/20pitch                 |
| R-1                  | 5.0mm                      | 26.0mm                     |                            | 2.0mm/20pitch                 |
| A-405                | 5.0mm                      | 26.0mm                     |                            | 2.0mm/20pitch                 |
| A-405                | 5.0mm                      |                            | 52.4mm                     | 2.0mm/20pitch                 |
| DO-41                | 5.0mm                      | 26.0mm                     |                            | 2.0mm/20pitch                 |
| DO-41                | 5.0mm                      |                            | 52.4mm                     | 2.0mm/10pitch                 |
| DO-15                | 5.0mm                      |                            | 52.4mm                     | 2.0mm/10pitch                 |
| R-3                  | 5.0mm                      |                            | 52.4mm                     | 2.0mm/10pitch                 |
| DO-201AD             | 10.0mm                     |                            | 52.4mm                     | 2.0mm/10pitch                 |
| R-6                  | 10.0mm                     |                            | 52.4mm                     | 2.0mm/10pitch                 |

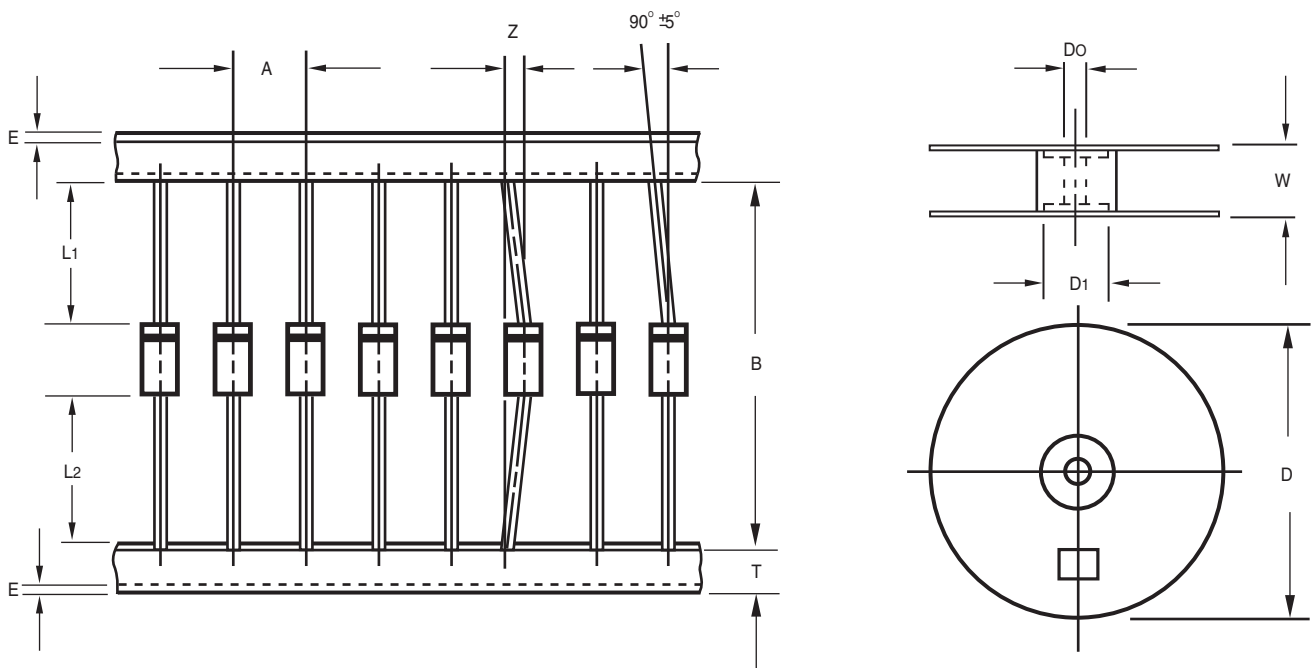


Fig.: Configuration of AXIAL LEAD TAPING

| ITEM                  | SYMBOL    | SPECIFICATIONS (mm) | SPECIFICATIONS (inch) |
|-----------------------|-----------|---------------------|-----------------------|
| Component alignment   | Z         | 1.2 Max.            | 0.047 Max.            |
| Tape width            | T         | $6.0 \pm 0.4$       | $0.236 \pm 0.016$     |
| Exposed adhesive      | E         | 0.8 Max.            | 0.032 Max.            |
| Body eccentricity     | $ L1-L2 $ | 1.0 Max.            | 0.039 Max.            |
| Reel outside diameter | D         | 330.0               | 13.0                  |
| Reel inner diameter   | D1        | $85.7 \pm 0.3$      | $3.374 \pm 0.012$     |
| Feed hole diameter    | Do        | $30.5 \pm 0.4$      | $1.201 \pm 0.016$     |
| Reel width            | W         | $79.0 \pm 1.0$      | $3.110 \pm 0.039$     |

Notes : 1. Each component lead shall be sandwiched between tapes for a minimum of 3.2mm (0.126").  
2. The reel width "W" for 26mm taping is  $50.0 \pm 1.0\text{mm} (1.97" \pm 0.040")$ .

# RADIAL-TAPING SPECIFICATIONS FOR RECTIFIERS-I TAPING

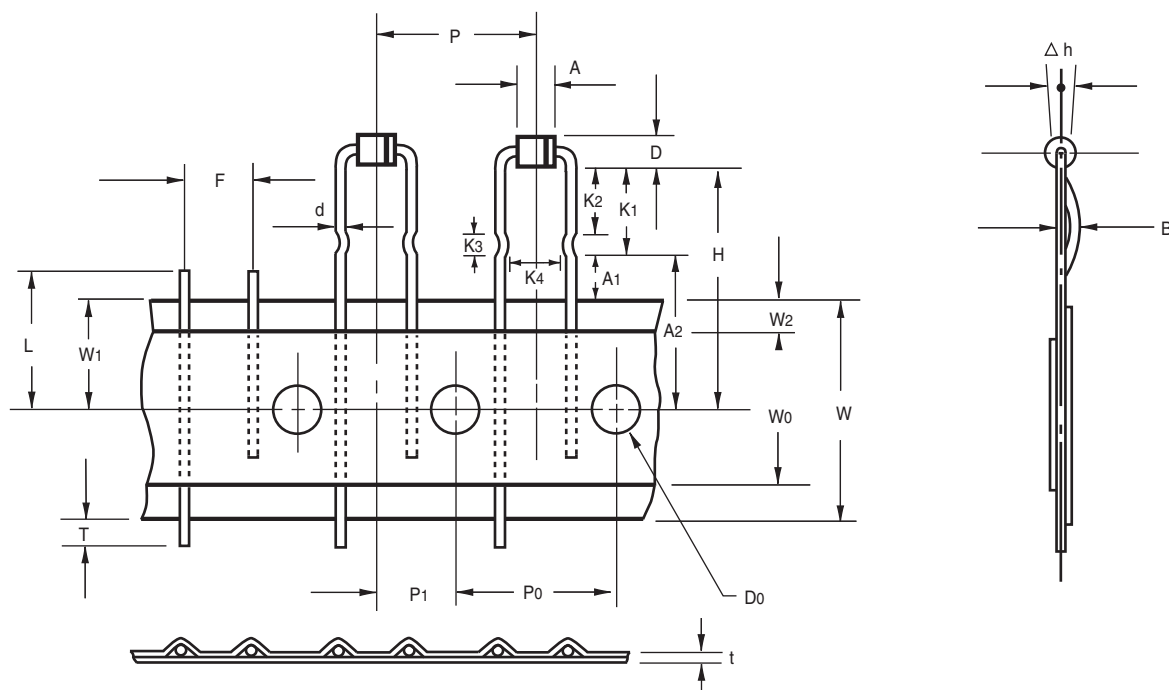


Fig.: Configuration of I-TAPING

| ITEM                             | SYMBOL | SPECIFICATIONS(mm) | SPECIFICATIONS(inch) |
|----------------------------------|--------|--------------------|----------------------|
| Lead-wire clinch height          | A2     | 15.5± 0.2          | 0.610± 0.008         |
| Kinker height                    | K1     | 5.0± 1.0           | 0.197± 0.039         |
| Kinker position                  | K2     | 3.0± 1.0           | 0.118± 0.039         |
| Lead kinker length               | K3     | 3.0± 1.0           | 0.118± 0.039         |
| Component kinker spacing         | K4     | 2.5± 1.0           | 0.098± 0.039         |
| Adhesive tape position           | A1     | 6.0 Min.           | 0.236 Min.           |
| Body diameter                    | D      | 2.5± 0.2           | 0.098± 0.008         |
| Body length                      | A      | 3.1± 0.3           | 0.122± 0.012         |
| Lead-wire diameter               | d      | 0.6± 0.1           | 0.024± 0.004         |
| Component pitch                  | P      | 12.7± 1.0          | 0.500± 0.039         |
| Feed hole pitch                  | P0     | 12.7± 1.0          | 0.500± 0.039         |
| Component lead spacing           | F      | 5.0± 0.8           | 0.197± 0.031         |
| Deflection                       | Δh     | 0.0± 2.0           | 0.0± 0.079           |
| Tape width                       | W      | 18.0+1.0/-0.5      | 0.709+0.039/-0.020   |
| Hole-down tape width             | W0     | 12.5 Min.          | 0.492 Min.           |
| Hole position                    | W1     | 9.0+0.7/-0.5       | 0.354+0.028/-0.020   |
| Length from seating plane        | H      | 20.0± 0.5          | 0.787± 0.020         |
| Feed hole diameter               | D0     | 4.0± 0.3           | 0.157± 0.012         |
| Total tape thickness             | t      | 0.7± 0.2           | 0.028± 0.008         |
| Cut out length                   | L      | 11.0 Max.          | 0.433 Max.           |
| Lead protrusion                  | T      | 2.0 Max.           | 0.079 Max.           |
| Center of seating plane location | P1     | 6.35± 0.7          | 0.250± 0.028         |
| Adhesive tape position           | W2     | 3.0 Max.           | 0.118 Max.           |
| Lead bend                        | B      | 1.0 Max.           | 0.039 Max.           |

Notes : 1.Devices are pecked in accordance with EIA standard RS-468 and specifications listed above. Available only for R-1 product utilizing 0.6mm diameter leads.  
2.Maximum cumulative pitch tolerance : 1.0mm/20pitch.  
3.Standard packing code is "I"

# RADIAL-TAPING SPECIFICATIONS FOR RECTIFIERS-J TAPING

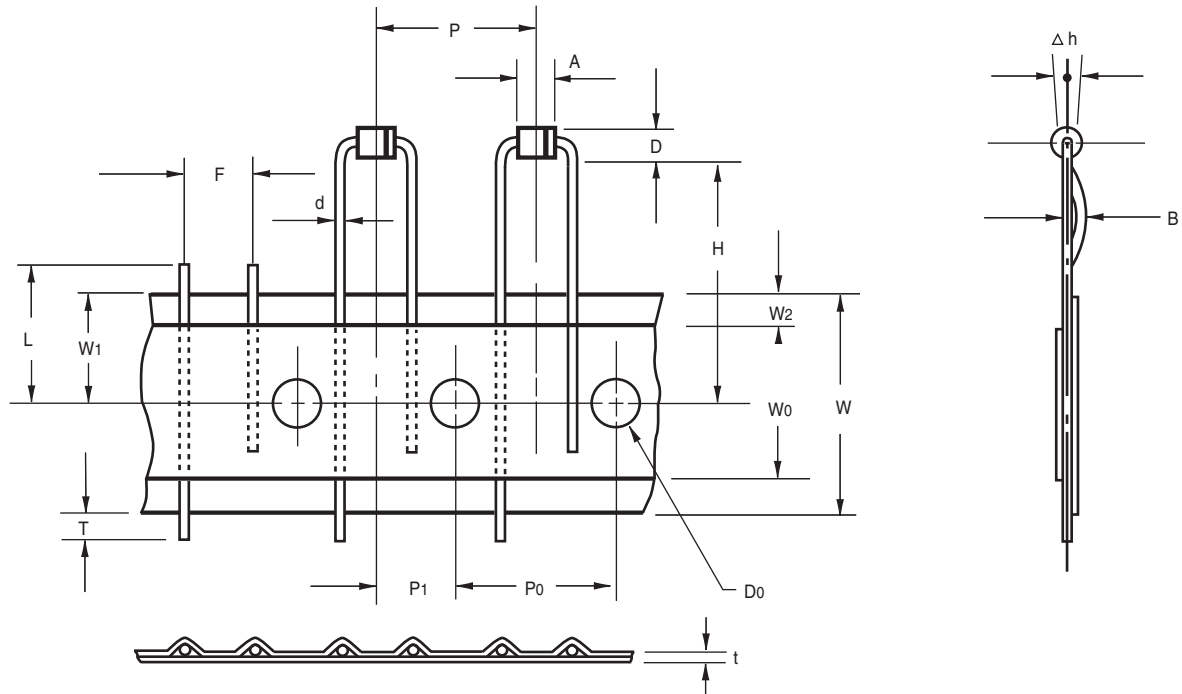


Fig.: Configuration of J-TAPING

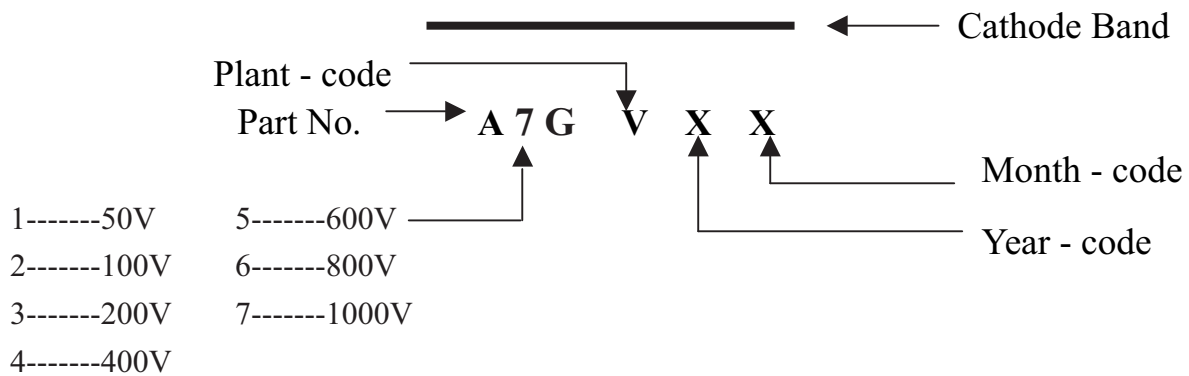
| ITEM                             | SYMBOL | SPECIFICATIONS(mm) | SPECIFICATIONS(inch) |
|----------------------------------|--------|--------------------|----------------------|
| Body diameter                    | D      | 2.5± 0.2           | 0.098± 0.008         |
| Body height                      | A      | 3.1± 0.3           | 0.122± 0.012         |
| Lead-wire diameter               | d      | 0.6± 0.1           | 0.024± 0.004         |
| Component pitch                  | P      | 12.7± 1.0          | 0.500± 0.039         |
| Feed hole pitch                  | P0     | 12.7± 1.0          | 0.500± 0.039         |
| Component lead spacing           | F      | 5.0± 0.8           | 0.197± 0.032         |
| Deflection                       | Δ h    | 0.0± 2.0           | 0.000± 0.079         |
| Tape width                       | W      | 18.0+1.0/-0.5      | 0.709+0.039/-0.020   |
| Hold-down tape width             | W0     | 12.5 Min.          | 0.492 Min.           |
| Hold-position                    | W1     | 9.0+0.7/-0.50      | 0.354+0.028/-0.020   |
| Length from seating plane        | H      | 20.0± 0.5          | 0.787± 0.020         |
| Feed hole diameter               | Do     | 4.0± 0.3           | 0.157± 0.012         |
| Overall tape thickness           | t      | 0.7± 0.2           | 0.028± 0.008         |
| Cut out length                   | L      | 11.0 Max.          | 0.433 Max.           |
| Lead protrusion                  | T      | 1.0 Max.           | 0.039 Max.           |
| Center of seating plane location | P1     | 6.35± 0.7          | 0.250± 0.028         |
| Adhesive tape border             | W2     | 30 Max.            | 1.181 Max.           |
| Lead bend                        | B      | 1.0 Max.           | 0.039 Max.           |

Notes : 1.Devices are packed in accordance with EIA standard RS-468 and specification given above. Available only for R-1 product utilizing 0.6mm diameter leads.  
2.Maximum cumulative pitch tolerance:1.0mm/20pitch.  
3.Standard packing code is "J".

## 1. Internal Circuit



## 2. Marking on the body



## PACKAGING OF DIODE AND BRIDGE RECTIFIERS

### REEL PACK

| PACKAGE | PACKING CODE | EA PER REEL | EA PER INNER BOX | COMPONENT SPACE (mm) | TAPE SPACE (mm) | REEL DIA (mm) | CARTON SIZE (mm) | EA PER CARTON | GROSS WEIGHT(Kg) |
|---------|--------------|-------------|------------------|----------------------|-----------------|---------------|------------------|---------------|------------------|
| R-1     | -T           | 5,000       | 5,000            | 5.0                  | 52              | 330           | 355*350*335      | 20,000        | 7.37             |

### AMMO PACK

| PACKAGE | PACKING CODE | REEL ( EA ) | COMPONENT SPACE(mm) | TAPE SPACE (mm) | BOX SIZE (mm) | CARTON SIZE(mm) | CARTON ( EA ) | GROSS WEIGHT (Kg) |
|---------|--------------|-------------|---------------------|-----------------|---------------|-----------------|---------------|-------------------|
| R-1     | -F           | 3,000       | 5.0                 | 52              | 255*73*100    | 400*268*225     | 30,000        | 8.5               |
| R-1     | -E           | 3,000       | 5.0                 | 26              | 256*48*94     | 365*270*217     | 42,000        | 8.35              |
| R-1     | -J           | 3,000       | 12.7                | ---             | 325*170*40    | 355*350*335     | 42,000        | 13.93             |
| R-1     | -I           | 2,000       | 12.7                | ---             | 325*170*40    | 355*350*335     | 28,000        | 9.69              |

### BULK PACK

| PACKAGE | PACKING CODE | EA PER BOX | INNER BOX SIZE (mm) | CARTON SIZE (mm) | EA PER CARTON | GROSS WEIGHT(Kg) |
|---------|--------------|------------|---------------------|------------------|---------------|------------------|
| R-1     | -B           | 1000       | 192*75*21           | 415*220*255      | 50,000        | 11.74            |

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