

# **FAST RECOVERY RECTIFIER**

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

## **FEATURES**

- \* Fast switching
- \* Low leakage
- \* Low forward voltage drop
- \* High current capability
- \* High current surge
- \* High reliability

## **MECHANICAL DATA**

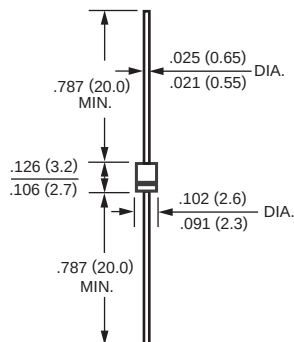
- \* Case: Molded plastic
- \* Epoxy: Device has UL flammability classification 94V-O
- \* Lead: MIL-STD-202E method 208C guaranteed
- \* Mounting position: Any
- \* Weight: 0.19 gram

## **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   | 1F1          | 1F2 | 1F3 | 1F4 | 1F5 | 1F6 | 1F7  | 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 Junction Capacitance (Note 2)                                                             | Cj       | 15           |     |     |     |     |     |      | pF    |
| Operating and Storage Temperature Range                                                           | TJ, TSTG | -55 to + 150 |     |     |     |     |     |      | °C    |

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

| CHARACTERISTICS                                                                              | SYMBOL | 1F1 | 1F2 | 1F3 | 1F4 | 1F5 | 1F6 | 1F7 | UNITS |
|----------------------------------------------------------------------------------------------|--------|-----|-----|-----|-----|-----|-----|-----|-------|
| Maximum Instantaneous Forward Voltage at 1.0A DC                                             | VF     | 1.3 |     |     |     |     |     |     | Volts |
| Maximum DC Reverse Current at Rated DC Blocking Voltage TA = 25°C                            | IR     | 5.0 |     |     |     |     |     |     | uAmps |
| Maximum Full Load Reverse Current Full Cycle Average, .375" (9.5mm) lead length at TL = 55°C |        | 100 |     |     |     |     |     |     | uAmps |
| Maximum Reverse Recovery Time (Note 1)                                                       | trr    | 150 |     |     |     | 250 | 500 |     | nSec  |

NOTES : 1. Reverse Recovery Test Conditions: IF = 0.5A, IR = -1.0A, IRR = -0.25A  
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts

## RATING AND CHARACTERISTIC CURVES ( 1F1 THRU 1F7 )

FIG. 1 - TYPICAL FORWARD CURRENT DERATING CURVE

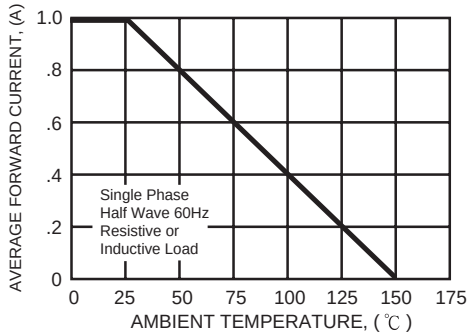


FIG. 2 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

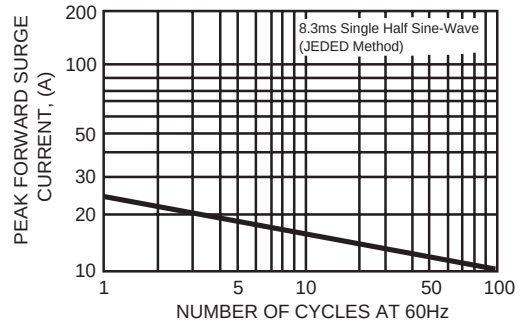


FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

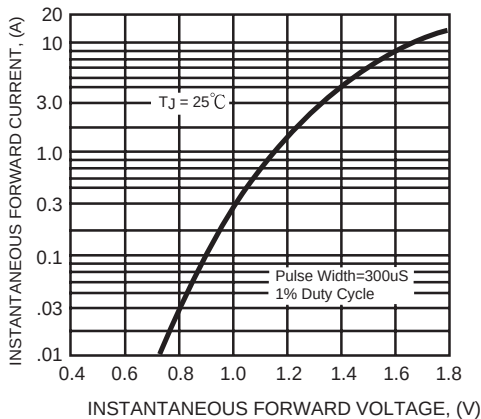


FIG. 4 - TYPICAL REVERSE CHARACTERISTICS

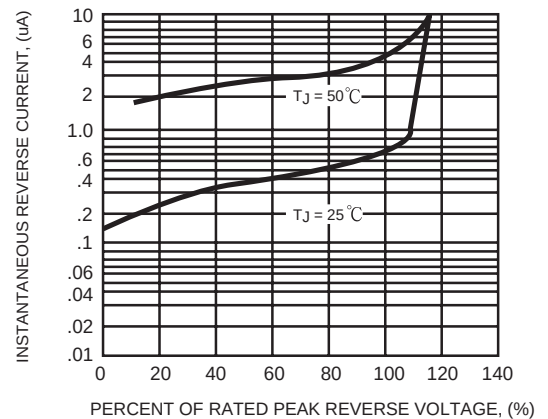


FIG. 5 - TYPICAL JUNCTION CAPACITANCE

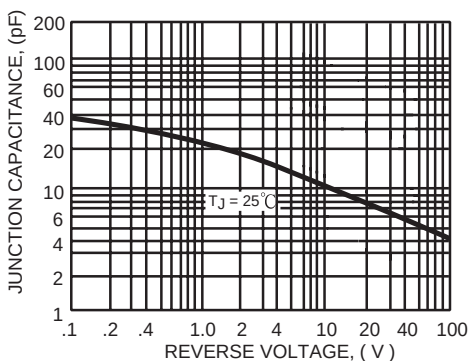
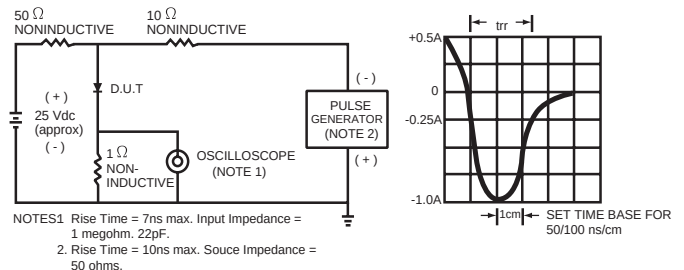


FIG. 6 - TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



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