

FAST RECOVERY RECTIFIER

VOLTAGE RANGE 50 to 1000 Volts CURRENT 2.5 Amperes

FEATURES

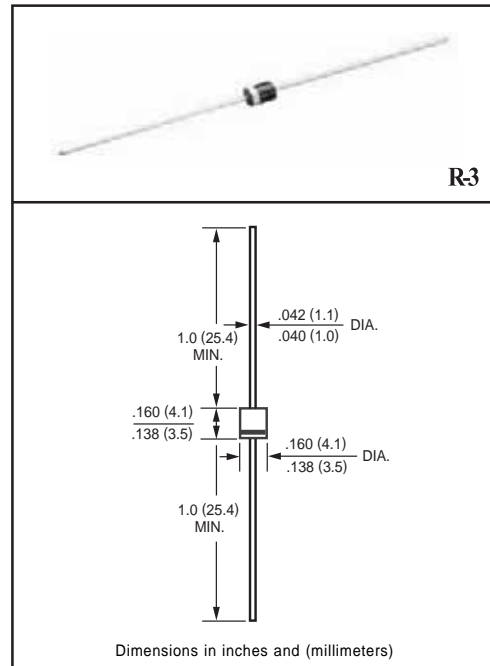
- * Fast switching
- * Low leakage
- * Low forward voltage drop
- * High current capability
- * High current surge
- * High reliability

MECHANICAL DATA

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

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%.



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

| RATINGS | SYMBOL | FR251 | FR252 | FR253 | FR254 | FR255 | FR255P | FR256 | FR257 | FR257P | UNITS |
|---|-----------------------------------|--------------|-------|-------|-------|-------|--------|-------|-------|--------|------------------|
| Maximum Recurrent Peak Reverse Voltage | V _{RRM} | 50 | 100 | 200 | 400 | 600 | 600 | 800 | 1000 | 1000 | Volts |
| Maximum RMS Voltage | V _{RMS} | 35 | 70 | 140 | 280 | 420 | 420 | 560 | 700 | 700 | Volts |
| Maximum DC Blocking Voltage | V _{DC} | 50 | 100 | 200 | 400 | 600 | 600 | 800 | 1000 | 1000 | Volts |
| Maximum Average Forward Rectified Current at TA = 75°C | I _O | 2.5 | | | | | | | | | Amps |
| Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC method) | I _{FSM} | 150 | | | | | | | | | Amps |
| Typical Current Squared Time | I ² t | 93.38 | | | | | | | | | A ² S |
| Typical Junction Capacitance (Note 2) | C _J | 60 | | | | | | | | | pF |
| Operating and Storage Temperature Range | T _J , T _{STG} | -55 to + 150 | | | | | | | | | °C |

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

| CHARACTERISTICS | SYMBOL | FR251 | FR252 | FR253 | FR254 | FR255 | FR255P | FR256 | FR257 | FR257P | UNITS |
|--|-----------------|-------|-------|-------|-------|-------|--------|-------|-------|--------|-------|
| Maximum Instantaneous Forward Voltage at 2.5A DC | V _F | 1.3 | | | | | | | | | Volts |
| Maximum DC Reverse Current at Rated DC Blocking Voltage TA = 25°C | I _R | 5.0 | | | | | | | | | uAmps |
| Maximum Full Load Reverse Current Average, Full Cycle .375" (9.5mm) lead length at TL = 55°C | | 100 | | | | | | | | | uAmps |
| Maximum Reverse Recovery Time (Note 1) | t _{rr} | 150 | | | 250 | | 150 | 500 | | 250 | nSec |

NOTES : 1. Test Conditions: I_F = 0.5A, I_R = -1.0A, I_{RR} = -0.25A
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts

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REV:A

RATING AND CHARACTERISTIC CURVES (FR251 THRU FR257)

FIG. 1 - TYPICAL FORWARD CURRENT DERATING CURVE

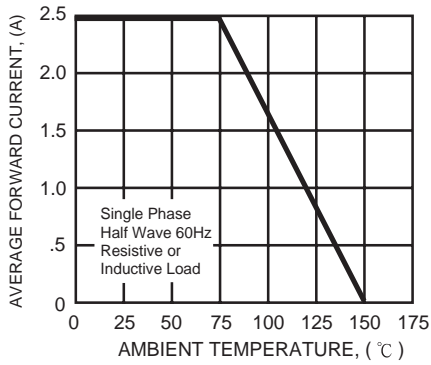


FIG. 3 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

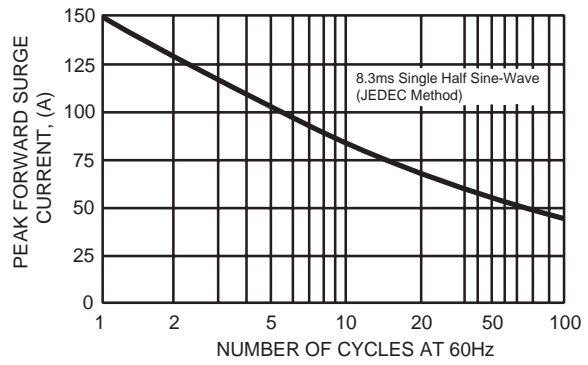


FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

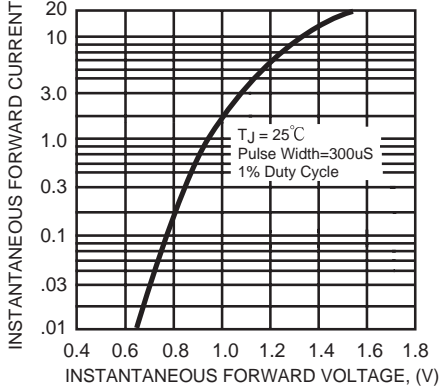


FIG. 4 - TYPICAL JUNCTION CAPACITANCE

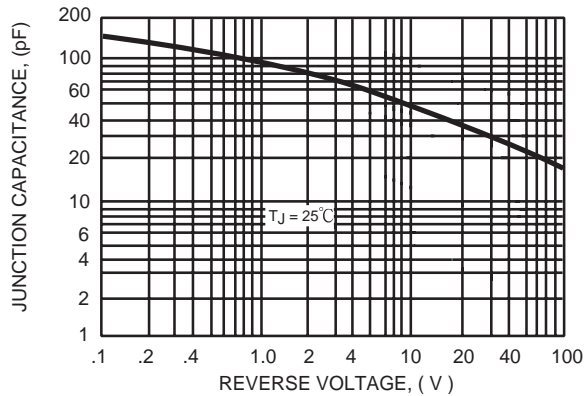
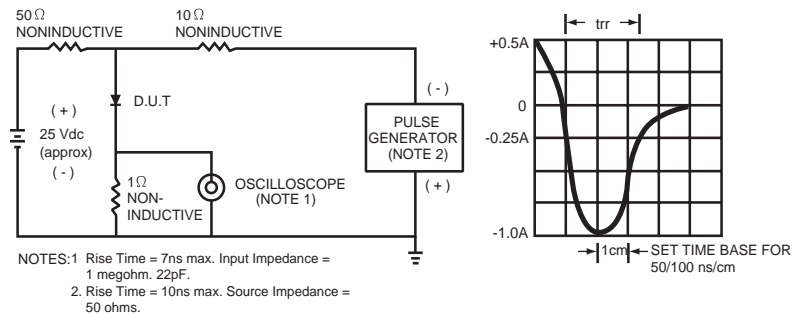


FIG. 5 - TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



PACKAGING OF DIODE AND BRIDGE RECTIFIERS

BULK PACK

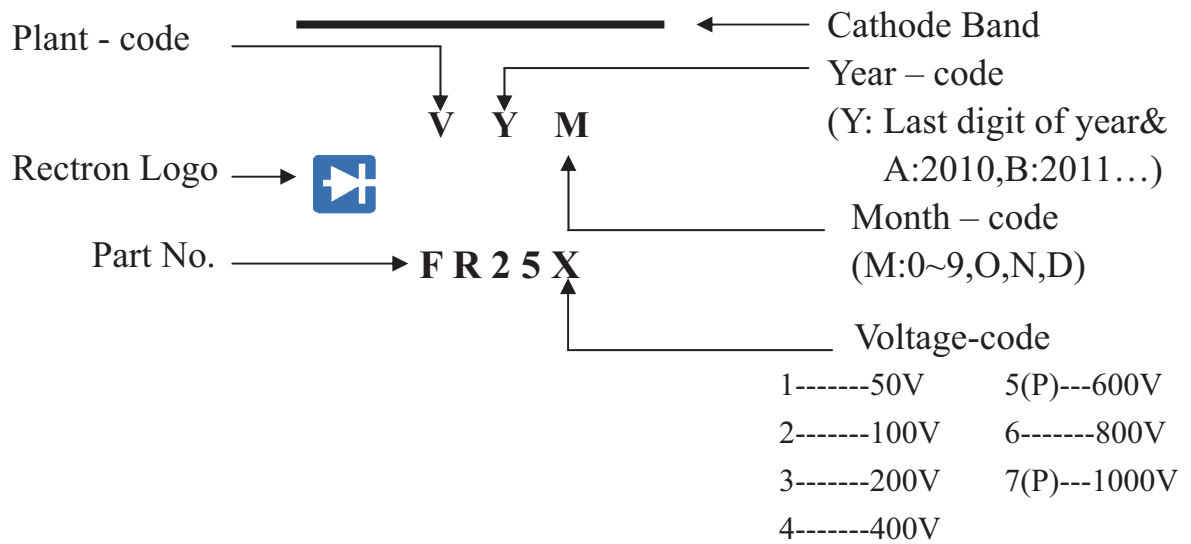
| PACKAGE | PACKING CODE | EA PER BOX | INNER BOX SIZE (mm) | CARTON SIZE (mm) | EA PER CARTON | GROSS WEIGHT(Kg) |
|---------|--------------|------------|------------------------|---------------------|---------------|---------------------|
| R-3 | -B | 500 | 192*75*21 | 415*220*255 | 25,000 | 16.17 |

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-3 | -T | 3,000 | 3,000 | 5.0 | 52 | 330 | 355*350*335 | 12,000 | 10.60 |



Marking Description



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