

**FAST RECOVERY RECTIFIER**

**VOLTAGE RANGE 50 to 1000 Volts CURRENT 2.5 Amperes**

**FEATURES**

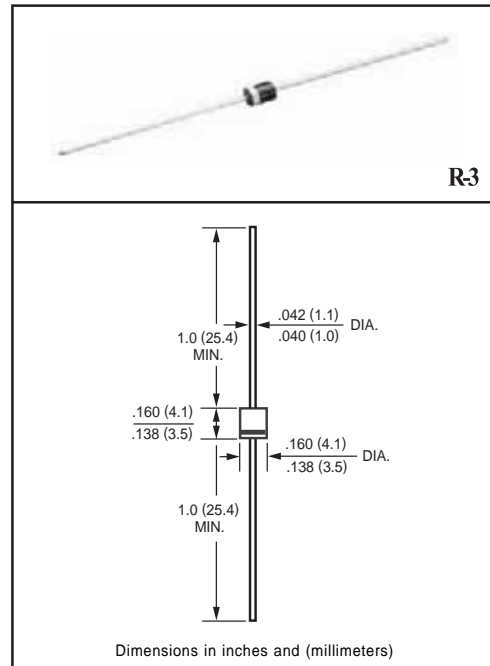
- \* Fast switching
- \* Low leakage
- \* Low forward voltage drop
- \* High current capability
- \* High current surge
- \* High reliability

**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 <sub>RRM</sub>	50	100	200	400	600	600	800	1000	1000	Volts
Maximum RMS Voltage	V <sub>RMS</sub>	35	70	140	280	420	420	560	700	700	Volts
Maximum DC Blocking Voltage	V <sub>DC</sub>	50	100	200	400	600	600	800	1000	1000	Volts
Maximum Average Forward Rectified Current at TA = 75°C	I <sub>O</sub>	2.5									Amps
Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)	I <sub>FSM</sub>	150									Amps
Typical Current Squared Time	I <sup>2</sup> t	93.38									A <sup>2</sup> S
Typical Junction Capacitance (Note 2)	C <sub>J</sub>	60									pF
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-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 <sub>F</sub>	1.3									Volts
Maximum DC Reverse Current at Rated DC Blocking Voltage TA = 25°C	I <sub>R</sub>	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 <sub>rr</sub>	150			250		150	500		250	nSec

NOTES : 1. Test Conditions: I<sub>F</sub> = 0.5A, I<sub>R</sub> = -1.0A, I<sub>RR</sub> = -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

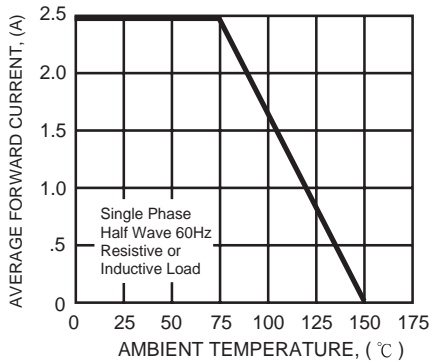


FIG. 3 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

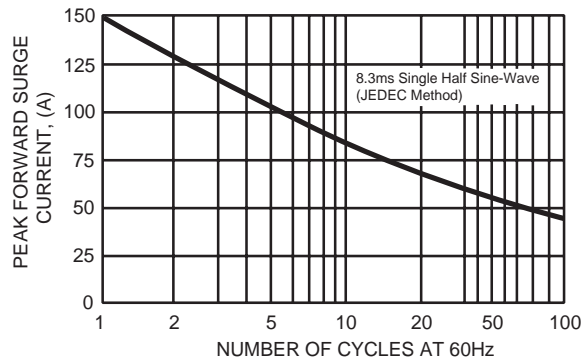


FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

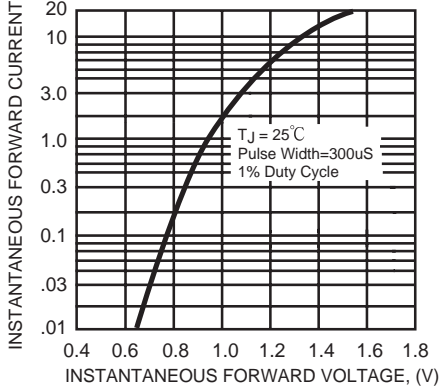


FIG. 4 - TYPICAL JUNCTION CAPACITANCE

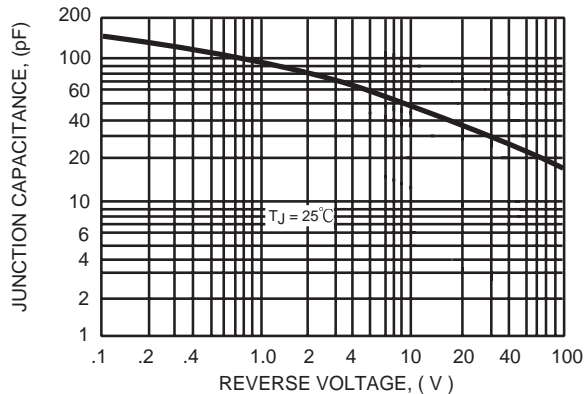
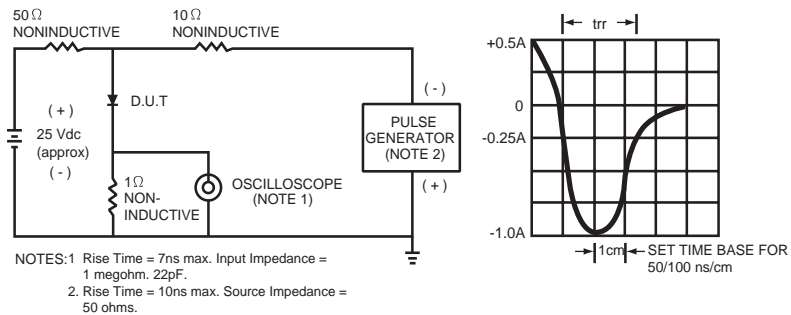


FIG. 5 - TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



## PACKAGING OF DIODE AND BRIDGE RECTIFIERS

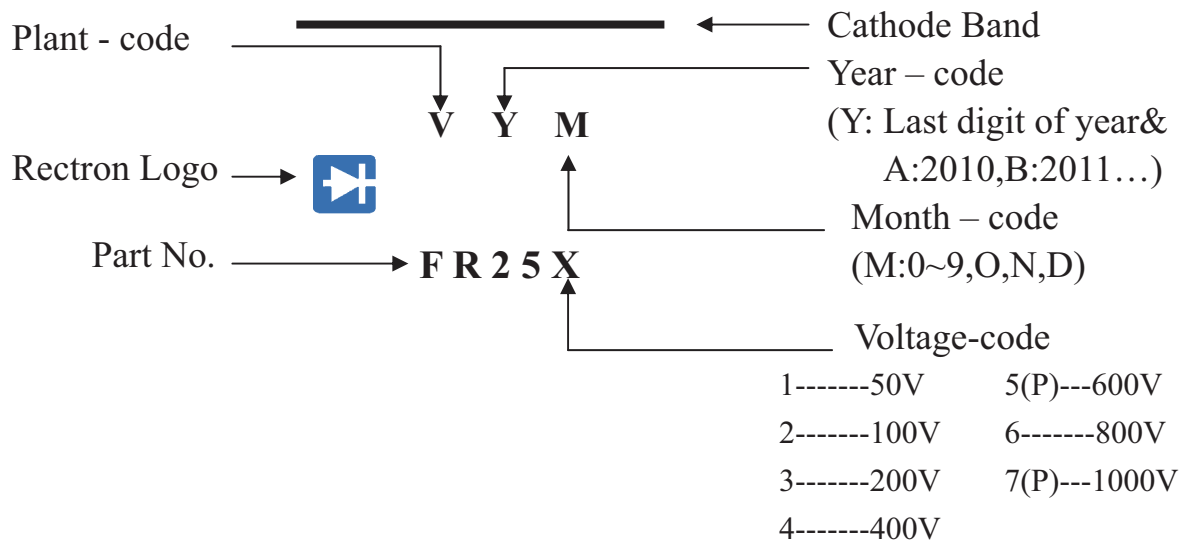
### BULK PACK

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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