# MOSPEC

# FR101 THRU FR107

**FAST RECOVERY RECTIFIER**
**VOLTAGE RANGE 50 to 1000 Volts**
**CURRENT 1 Ampere**

**FEATURES**

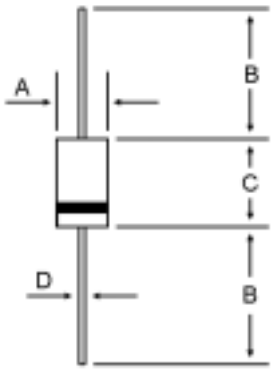
- ＊Low cost construction
- ＊Low reverse leakage
- ＊Fast switching for high efficiency
- ＊High forward surge current Capability
- ＊High Temperature soldering guaranteed: 260°C/10 seconds, 0.375”(9.5 mm) lead length at lbs (2.3kg) tension.

**MECHANICAL DATA**

- ＊Case：Transfer Molded Plastic
- ＊Epoxy: UL94V-O rate flame retardant
- ＊Terminals：Plated axial lead, Solderable Per MIL-STD-202 Method 208
- ＊Polarity：Color band denotes cathode end
- ＊Mounting position: Any
- ＊ Weight：0.012 ounce, 0.33 grams (approx)

Plating pb free
The marking is indicated by part no. add.“M”.
ex:FR101M~FR107M

**DO-41**




| DIM | MILLIMETERS | |
|---|---|---|
| | MIN | MAX |
| A | 2.00 | 2.70 |
| B | 25.40 | --- |
| C | 4.20 | 5.20 |
| D | 0.70 | 0.90 |

## AXIMUM RATINGS AND ELECTRICAL CHARATERISTICS

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

| Characteristic | Symbol | FR101 | FR102 | FR103 | FR104 | FR105 | FR106 | FR107 | Unit |
|---|---|---|---|---|---|---|---|---|---|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| RMS Reverse Voltage | $V_{R(RMS)}$ | 35 | 70 | 140 | 280 | 420 | 560 | 700 | V |
| Average Rectifier Forward Current<br>Per Leg $T_C$=75℃ | $I_{F(AV)}$ | 1.0 | | | | | | | A |
| Non-Repetitive Peak Surge Current (Surge applied at rate load conditions halfware, single phase, 60Hz) | $I_{FSM}$ | 30 | | | | | | | A |
| Maximum Instantaneous Forward Voltage<br>( $I_F$ =1.0 Amp $T_C$ = 25℃) | $V_F$ | 1.3 | | | | | | | V |
| Maximum Instantaneous Reverse Current<br>( Rated DC Voltage, $T_C$ = 25℃)<br>( Rated DC Voltage, $T_C$ = 100℃) | $I_R$ | 5.0<br>100 | | | | | | | uA |
| Reverse Recovery Time (Note 3) | $T_{rr}$ | 150 | | | | 250 | 500 | | ns |
| Typical Junction Capacitance (Note 1) | $C_j$ | 15 | | | | | | | pF |
| Typical Thermal Resistance(Note 2) | $R_{\theta JA}$ | 50 | | | | | | | °C/W |
| Operating Temperature Range | $T_J$ | -65 to +150 | | | | | | | ℃ |
| Storage Temperature Range | $T_{stg}$ | -65 to +150 | | | | | | | ℃ |

NOTES:

1. Measured at 1.0MHz and applied reverse voltage of 4.0 volts
2. Thermal Resistance from Junction to Ambient temperature at .375”(9.5mm) lead length, P.C. board mounted.

3.Test conditions: $I_F$ = 0.5 A, $I_R$ =1.0 , $I_{RR}$=0.25 A

# FR101 Thru FR107

FIG-1 TYPICAL FORWARD CHARACTERISITICS

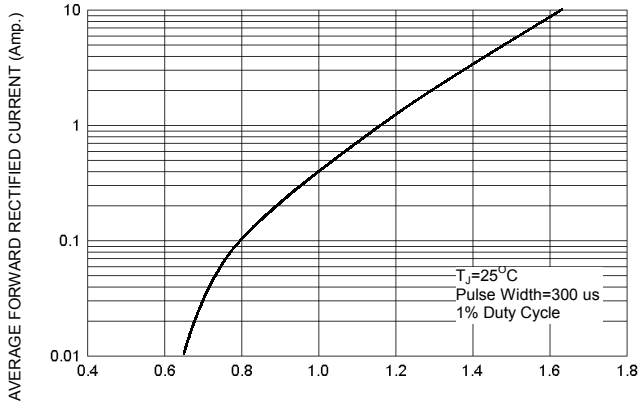



FIG-2 TYPICAL REVERSE CHARACTERISTICS

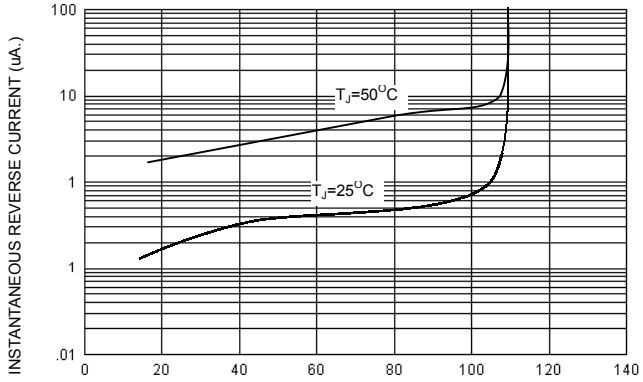



FIG-3 FORWARD CURRENT DERATING CURVE

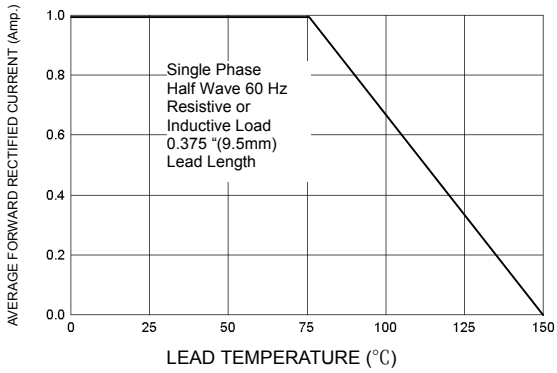



FIG-4TYPICAL JUNCTION CAPACITANCE

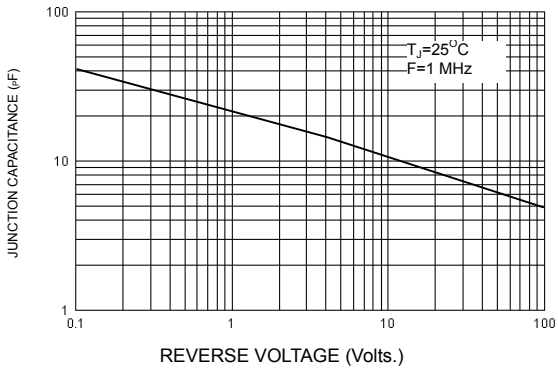
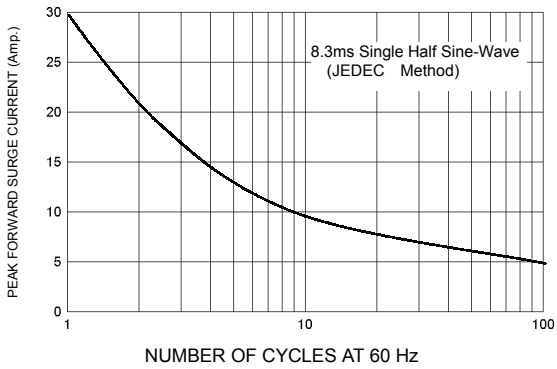
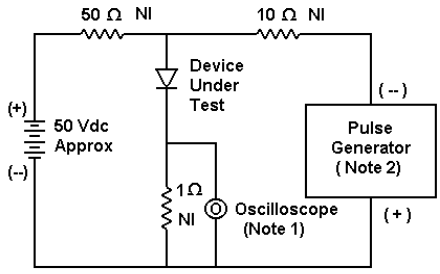
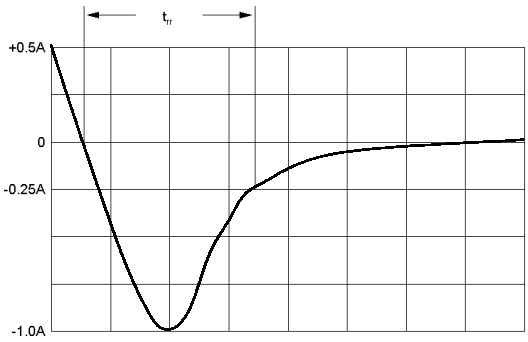



FIG-5PEAK FORWARD SURGE CURRENT




Notes:
1. Rise Time = 7 ns max. Input Impedance =1 M Ω , 22 pF
2. Rise Time = 10 ns max. Input Impedance = 50 Ω




Set time base for 50/100 ns/cm

FIG-6 Reverse Recovery Time Characteristic and Test Circuit Diagram