



Micro Commercial Components

Micro Commercial Components  
20736 Marilla Street Chatsworth  
CA 91311  
Phone: (818) 701-4933  
Fax: (818) 701-4939

## Features

- Glass Passivated Die
- Low Forward Voltage Drop
- High Current Capability
- High Surge Current
- Low Leakage
- Anode To Tab Configuration

## Maximum Ratings

- Operating Temperature: -65°C to +150°C
- Storage Temperature: -65°C to +175°C
- Thermal Resistance Junction to Case (Rthjc): 0.8°C/W

| MCC Part Number | Maximum Recurrent Peak Reverse Voltage | Maximum RMS Voltage | Maximum DC Blocking Voltage |
|-----------------|----------------------------------------|---------------------|-----------------------------|
| MR2400FR        | 50V                                    | 35V                 | 50V                         |
| MR2401FR        | 100V                                   | 70V                 | 100V                        |
| MR2402FR        | 200V                                   | 140V                | 200V                        |
| MR2404FR        | 400V                                   | 280V                | 400V                        |
| MR2406FR        | 600V                                   | 420V                | 600V                        |
| MR2408FR        | 800V                                   | 560V                | 800V                        |
| MR2410FR        | 1000V                                  | 700V                | 1000V                       |

## Electrical Characteristics @ 25°C Unless Otherwise Specified

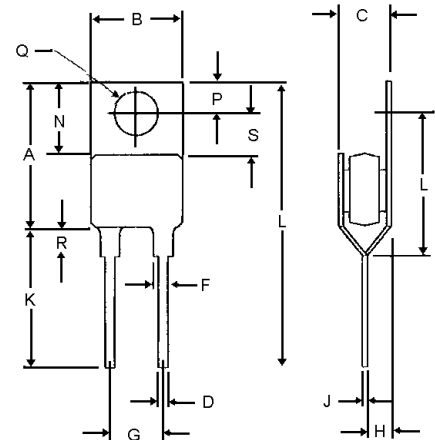
|                                                         |             |                                       |                                                       |
|---------------------------------------------------------|-------------|---------------------------------------|-------------------------------------------------------|
| Average Forward Current                                 | $I_{F(AV)}$ | 24.0A                                 | $T_c = 125^\circ\text{C}$                             |
| Peak Forward Surge Current                              | $I_{FSM}$   | 300A                                  | 8.3ms, half sine                                      |
| Maximum Instantaneous Forward Voltage                   | $V_F$       | 1.15V                                 | $I_{FM} = 24.0A$ ;<br>$T_a = 25^\circ\text{C}^*$      |
| Maximum DC Reverse Current At Rated DC Blocking Voltage | $I_R$       | 25 $\mu\text{A}$<br>1.0 $\mu\text{A}$ | $T_c = 25^\circ\text{C}$<br>$T_c = 100^\circ\text{C}$ |
| Maximum Reverse Recovery Time                           | $T_{rr}$    | 100ns to<br>250ns.                    | $I_F = 0.5A$ ,<br>$I_R = 1.0A$ ,<br>$I_{rr} = 0.25A$  |
| Typical Junction Capacitance                            | $C_J$       | 95pF                                  | Measured at<br>1.0MHz,<br>$V_R = 4.0V$                |

\*Pulse test: Pulse width 300  $\mu\text{sec}$ , Duty cycle 1%

## MR2400FR thru MR2410FR

## 24 Amp Fast Recovery Rectifiers 50-1000 Volt

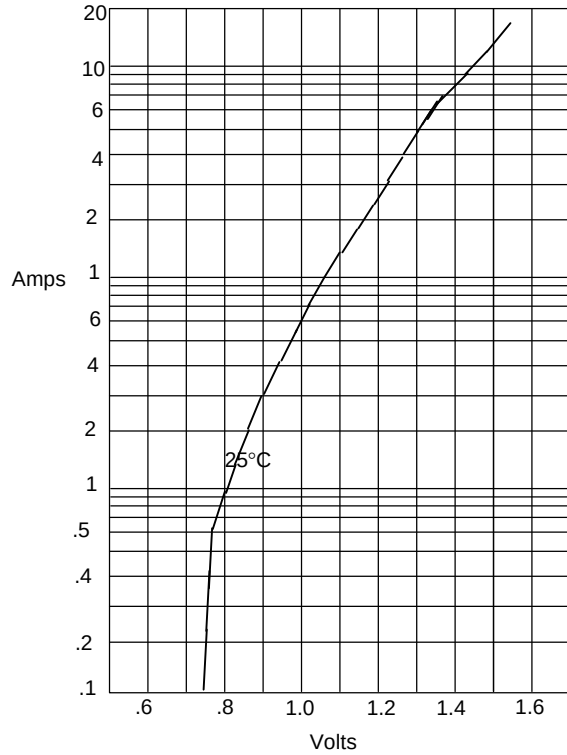
## TO-220



| DIM | INCHES |       | M M   |       | NOTE |
|-----|--------|-------|-------|-------|------|
|     | MIN    | MAX   | MIN   | MAX   |      |
| A   | .560   | .625  | 14.22 | 15.88 |      |
| B   | .380   | .420  | 9.65  | 10.67 |      |
| C   | .284   | .310  | 7.21  | 7.87  |      |
| D   | .025   | .045  | 0.64  | 1.14  |      |
| F   | .060   | .090  | 1.52  | 2.29  |      |
| G   | .170   | .210  | 4.32  | 5.33  |      |
| H   | .080   | .110  | 2.03  | 2.92  |      |
| J   | .023   | .029  | 0.58  | 0.74  |      |
| K   | ---    | .562  | ---   | 14.27 |      |
| L   | ---    | 1.187 | ---   | 30.15 |      |
| N   | .230   | .270  | 5.84  | 6.86  |      |
| P   | .100   | .120  | 2.54  | 3.05  |      |
| Q   | .139   | .147  | 3.53  | 3.73  |      |
| R   | ---    | .200  | ---   | 5.08  |      |
| S   | .140   | .150  | 3.55  | 3.80  |      |
| T   | .670   | .690  | 17.02 | 17.53 |      |

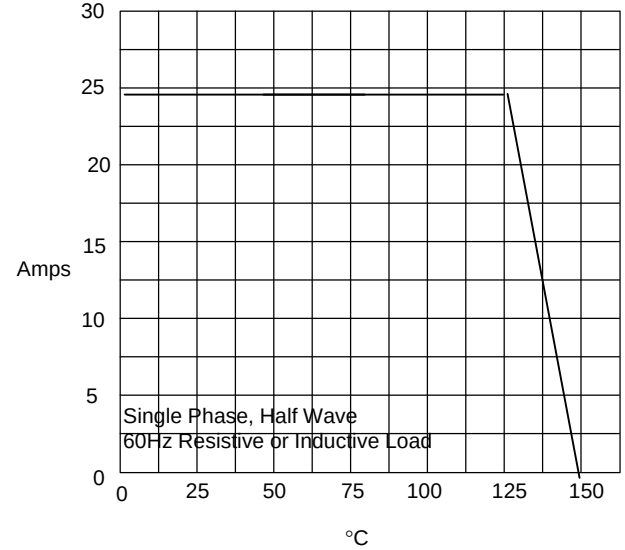
FR2400FR thru FR2410FR

Figure 1  
Typical Forward Characteristics



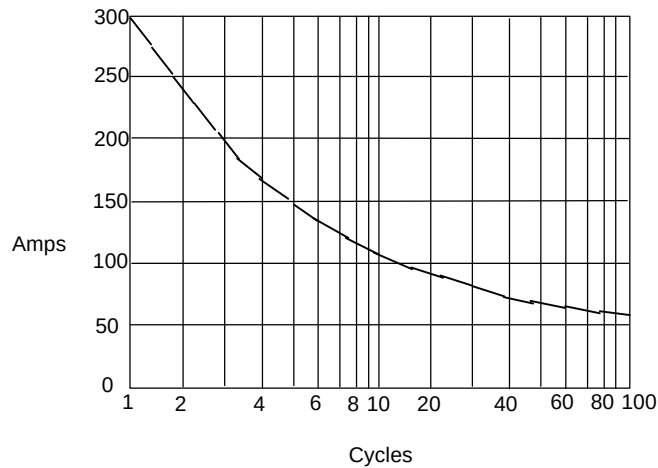
Instantaneous Forward Current - Amperes/versus  
Instantaneous Forward Voltage - Volts

Figure 2  
Forward Derating Curve



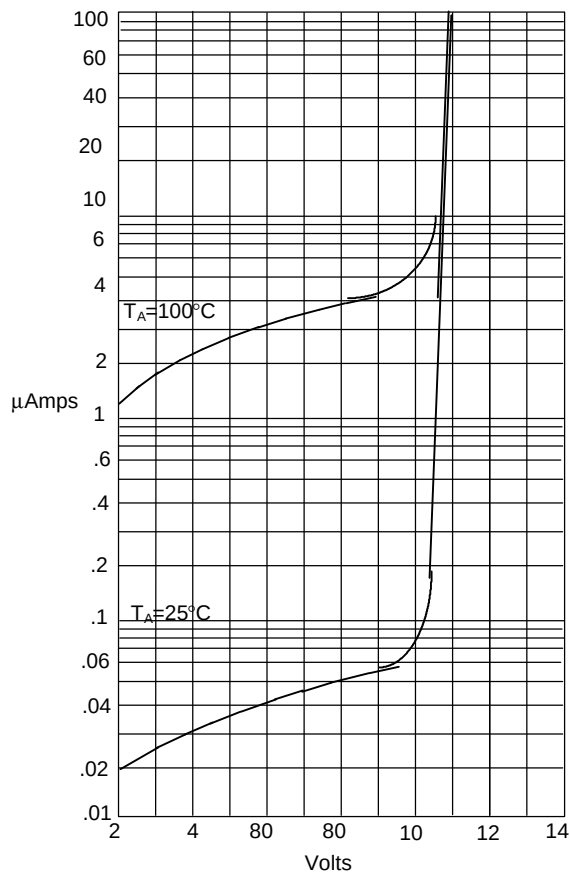
Average Forward Rectified Current - Amperes/versus  
Ambient Temperature - °C

Figure 3  
Maximum Non-Repetitive Forward Surge Current



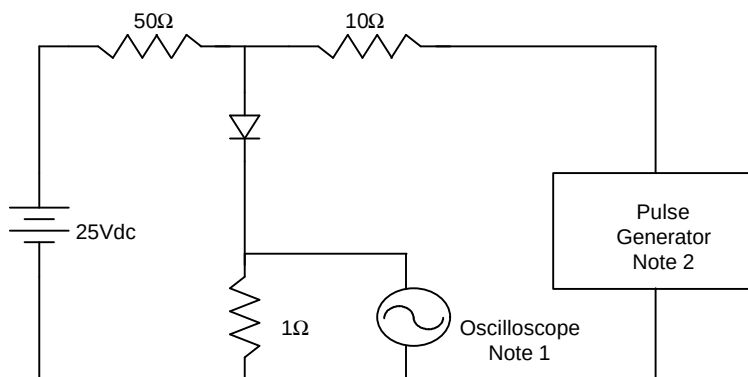
Peak Forward Surge Current - Amperes/versus  
Number Of Cycles At 60Hz - Cycles

Figure 4  
Typical Reverse Characteristics



Instantaneous Reverse Leakage Current - MicroAmperes versus  
Percent Of Rated Peak Reverse Voltage - Volts

Reverse Recovery Time Characteristic And Test Circuit Diagram



- Notes:
1. Rise Time = 7ns max.  
Input impedance = 1 megohm, 22pF
  2. Rise Time = 10ns max.  
Source impedance = 50 ohms
  3. Resistors are non-inductive

