



Micro Commercial Components

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**FR3A  
THRU  
FR3M**

## Features

- Lead Free Finish/Rohs Compliant (Note1) ("P" Suffix designates Compliant. See ordering information)
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Easy Pick And Place
- High Temp Soldering: 260°C for 10 Seconds At Terminals
- Fast Recovery Times For High Efficiency
- Halogen free available upon request by adding suffix "-HF"

## Maximum Ratings

- Operating Temperature: -55°C to +150°C
- Storage Temperature: -55°C to +150°C
- Maximum Thermal Resistance; 10°C/W Junction To Lead

| MCC Catalog Number | Device Marking | Maximum Recurrent Peak Reverse Voltage | Maximum RMS Voltage | Maximum DC Blocking Voltage |
|--------------------|----------------|--|---------------------|-----------------------------|
| FR3A               | FR3A           | 50V                                    | 35V                 | 50V                         |
| FR3B               | FR3B           | 100V                                   | 70V                 | 100V                        |
| FR3D               | FR3D           | 200V                                   | 140V                | 200V                        |
| FR3G               | FR3G           | 400V                                   | 280V                | 400V                        |
| FR3J               | FR3J           | 600V                                   | 420V                | 600V                        |
| FR3K               | FR3K           | 800V                                   | 560V                | 800V                        |
| FR3M               | FR3M           | 1000V                                  | 700V                | 1000V                       |

## Electrical Characteristics @ 25°C Unless Otherwise Specified

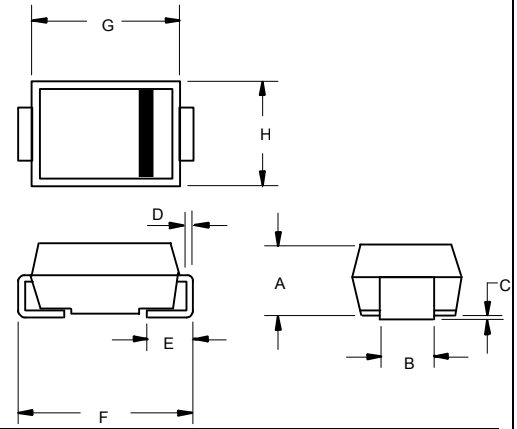
|   |             |                           |   |
|---|-------------|---------------------------|---|
| Average Forward Current                                 | $I_{F(AV)}$ | 3.0A                      | $T_J = 120^\circ\text{C}$                             |
| Peak Forward Surge Current                              | $I_{FSM}$   | 100A                      | 8.3ms, half sine                                      |
| Maximum Instantaneous Forward Voltage                   | $V_F$       | 1.30V                     | $I_{FM} = 3.0A$ ;<br>$T_J = 25^\circ\text{C}^*$       |
| Maximum DC Reverse Current At Rated DC Blocking Voltage | $I_R$       | 10 $\mu$ A<br>250 $\mu$ A | $T_J = 25^\circ\text{C}$<br>$T_J = 100^\circ\text{C}$ |
| Maximum Reverse Recovery Time                           | $T_{rr}$    | 150ns<br>250ns<br>500ns   | $I_F=0.5A$ , $I_R=1.0A$ ,<br>$I_{rr}=0.25A$           |
| Typical Junction Capacitance                            | $C_J$       | 80pF                      | Measured at 1.0MHz, $V_R=4.0V$                        |

\*Pulse test: Pulse width 200  $\mu$ sec, Duty cycle 2%

Note: 1. High Temperature Solder Exemptions Applied, see EU Directive Annex 7.

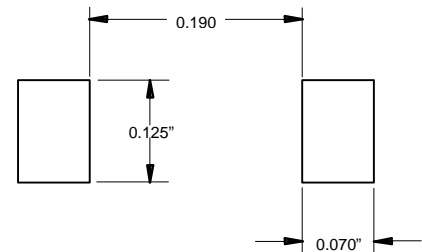
**3 Amp Fast Recovery  
Silicon Rectifier  
50 to 1000 Volts**

**DO-214AB  
(SMC)(LEAD FRAME)**



| DIM | INCHES |      | MM    |       | NOTE |
|-----|--------|------|-------|-------|------|
|     | MIN    | MAX  | MIN   | MAX   |      |
| A   | .079   | .103 | 2.00  | 2.62  |      |
| B   | .108   | .128 | 2.75  | 3.25  |      |
| C   | .002   | .008 | 0.051 | 0.203 |      |
| D   | .006   | .012 | 0.152 | 0.305 |      |
| E   | .030   | .050 | 0.76  | 1.27  |      |
| F   | .305   | .320 | 7.75  | 8.13  |      |
| G   | .260   | .280 | 6.60  | 7.11  |      |
| H   | .220   | .245 | 5.59  | 6.22  |      |

**SUGGESTED SOLDER  
PAD LAYOUT**



# FR3A thru FR3M

Figure 1  
Typical Forward Characteristics

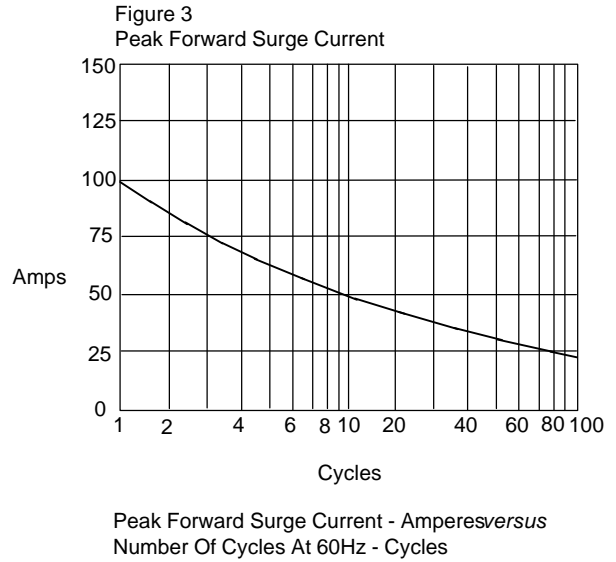
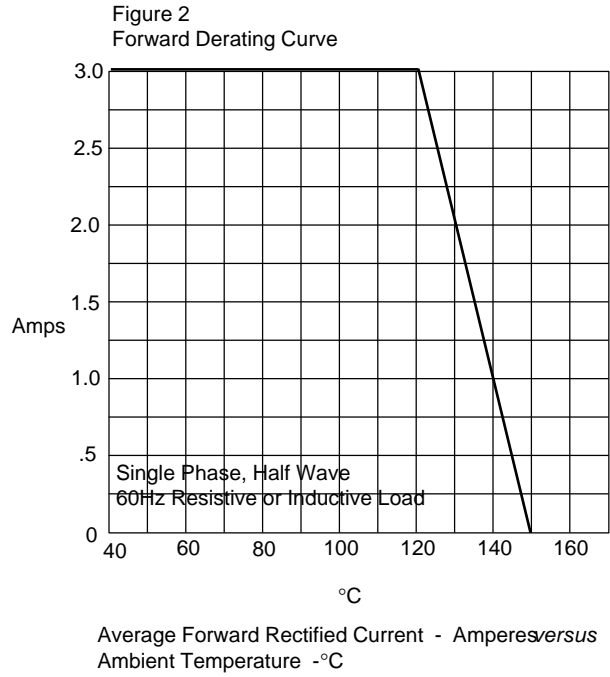
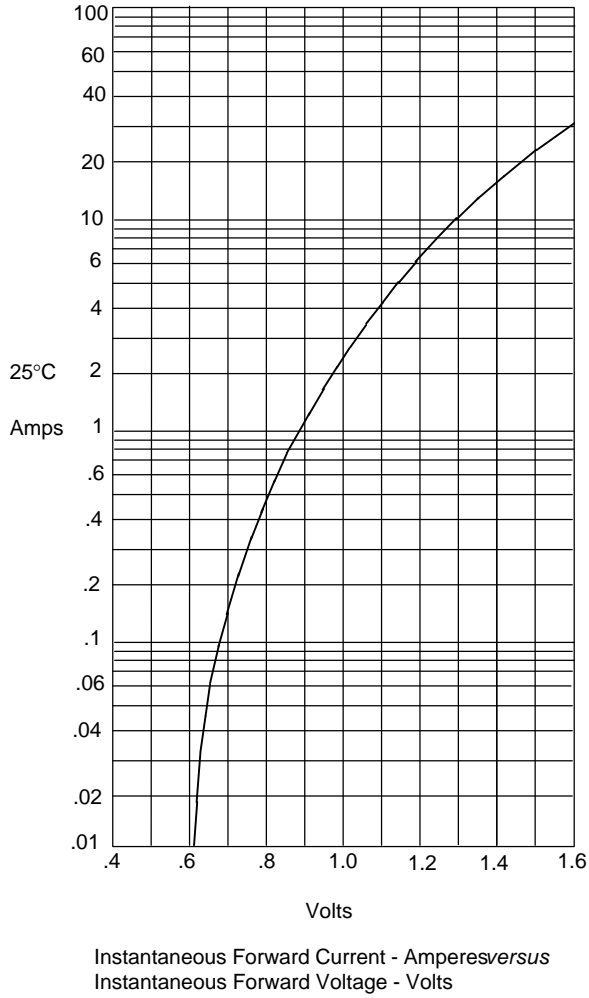
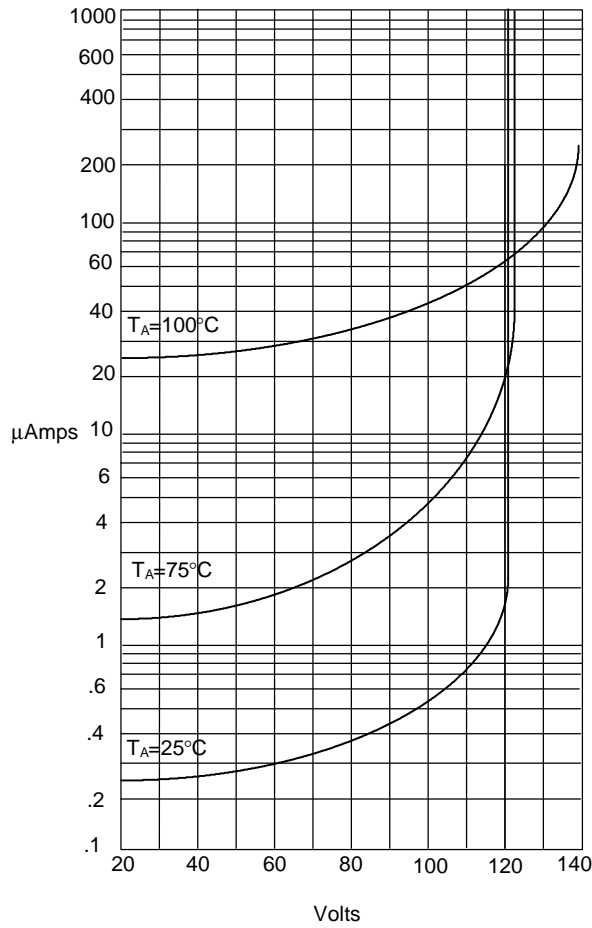
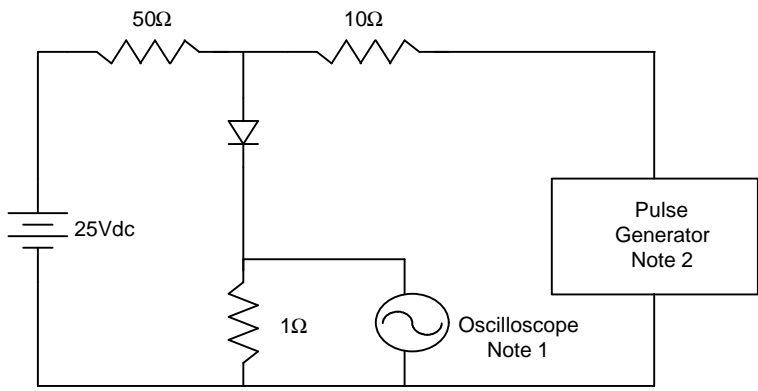


Figure 4  
Typical Reverse Characteristics

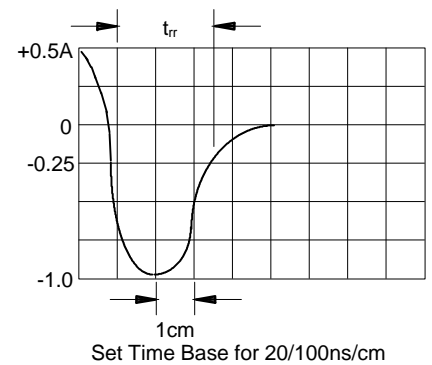


Instantaneous Reverse Leakage Current - MicroAmperes versus  
Percent Of Rated Peak Reverse Voltage - Volts

Figure 5  
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





TM

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### Ordering Information :

| Device         | Packing               |
|----------------|-----------------------|
| Part Number-TP | Tape&Reel: 3Kpcs/Reel |

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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