

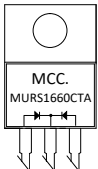
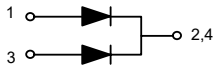
## Features

- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Lead Free Finish/RoHS Compliant(Note 1) ("P" Suffix Designates Compliant. See Ordering Information)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Low Switching Losses and High Efficiency
- Low Reverse Leakage
- Ultrafast Recovery Time
- Planar Structure Die and Soft Recovery Characteristics

## Maximum Ratings @ 25°C (Unless Otherwise Specified)

| Parameter   | Symbol      | Value | Unit             |
|---|-------------|-------|------------------|
| Peak Repetitive Reverse Voltage                         | $V_{RRM}$   | 600   | V                |
| Working Peak Reverse Voltage                            | $V_{RWM}$   |       |                  |
| DC Blocking Voltage                                     | $V_R$       |       |                  |
| RMS Reverse Voltage                                     | $V_{RMS}$   | 420   | V                |
| Average Rectified Forward Current                       | $I_{F(AV)}$ | 8     | A                |
| Per Diode<br>Per Device                                 |             | 16    |                  |
| Non-Repetitive Peak Surge Current @8.3ms Half Sine Wave | $I_{FSM}$   | 100   | A                |
| Current Squared Time @ 1ms≤t≤8.3ms                      | $I^2t$      | 41    | A <sup>2</sup> s |

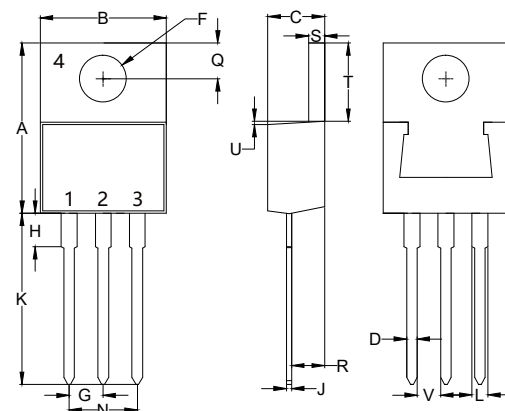
## Internal Structure

| Pin | Description | Simplified Outline  | Graphic Symbol  |
|-----|-------------|---|---|
| 2&4 | Cathode     |  |  |
| 1&3 | Anode       |   |   |

Note :1. High Temperature Solder Exemption Applied, See EU Directive Annex 7a.

# 16 Amp FRED Rectifiers 600 Volts

## TO-220AB



| DIMENSIONS |        |       |       |       |      |
|------------|--------|-------|-------|-------|------|
| DIM        | INCHES |       | MM    |       | NOTE |
|            | MIN    | MAX   | MIN   | MAX   |      |
| A          | 0.560  | 0.625 | 14.22 | 15.88 |      |
| B          | 0.380  | 0.429 | 9.65  | 10.90 |      |
| C          | 0.140  | 0.201 | 3.56  | 5.10  |      |
| D          | 0.020  | 0.045 | 0.51  | 1.14  |      |
| F          | 0.131  | 0.170 | 3.34  | 4.31  | Φ    |
| G          | 0.079  | 0.121 | 2.01  | 3.07  |      |
| H          | -----  | 0.250 | ----- | 6.35  |      |
| J          | 0.011  | 0.025 | 0.28  | 0.64  |      |
| K          | 0.500  | 0.580 | 12.70 | 14.73 |      |
| L          | 0.045  | 0.060 | 1.14  | 1.52  |      |
| N          | 0.158  | 0.242 | 4.02  | 6.14  |      |
| Q          | 0.087  | 0.135 | 2.22  | 3.43  |      |
| R          | 0.080  | 0.126 | 2.04  | 3.19  |      |
| S          | 0.045  | 0.055 | 1.14  | 1.39  |      |
| T          | 0.230  | 0.270 | 5.84  | 6.86  |      |
| U          | -----  | 0.050 | ----- | 1.27  |      |
| V          | 0.045  | ----- | 1.15  | ----- |      |

## Thermal characteristics

| Symbol        | Parameter                                | Conditions | Min | Typ | Max | Unit |
|---------------|--|------------|-----|-----|-----|------|
| $T_J$         | Operating Junction Temperature Range     |            | -55 |     | 175 | °C   |
| $T_{stg}$     | Storage Temperature Range                |            | -55 |     | 175 | °C   |
| $R_{th(J-C)}$ | Thermal Resistance from Junction to Case |            |     | 2   |     | °C/W |

## Electrical Characteristics @ 25°C Unless Otherwise Specified

| Parameter            | Symbol | Test Conditions                   | Min | Typ  | Max  | Unit |
|----------------------|--------|-----------------------------------|-----|------|------|------|
| Forward Voltage      | $V_F$  | $I_F=8A; T_J=25^{\circ}C$         |     | 1.40 | 1.60 | V    |
|                      |        | $I_F=8A; T_J=150^{\circ}C$        |     | 1.20 | 1.30 |      |
| Reverse Current      | $I_R$  | $V_R=600V; T_J=25^{\circ}C$       |     |      | 5    | uA   |
|                      |        | $V_R=600V; T_J=150^{\circ}C$      |     |      | 200  |      |
| Junction Capacitance | $C_J$  | $V_R=4V; f=1MHz; T_J=25^{\circ}C$ |     | 35   |      | pF   |

## Dynamic Recovery Characteristics @ 25°C Unless Otherwise Specified

| Parameter               | Symbol           | Test Conditions  |                       | Min | Typ  | Max | Unit |
|-------------------------|------------------|--|-----------------------|-----|------|-----|------|
| Reverse Recovery Time   | t <sub>rr</sub>  | I <sub>F</sub> =0.5A; I <sub>R</sub> =1.0A; I <sub>RR</sub> =0.25A; T <sub>J</sub> =25°C |                       |     | 20   | 35  | ns   |
|                         |                  |  | T <sub>J</sub> =25°C  |     | 82   |     |      |
|                         |                  |  | T <sub>J</sub> =150°C |     | 125  |     |      |
| Peak Recovery Current   | I <sub>RRM</sub> | I <sub>F</sub> =8A<br>d <sub>I</sub> F/d <sub>t</sub> =-200A/μs<br>V <sub>RM</sub> =400V | T <sub>J</sub> =25°C  |     | 3.45 |     | A    |
|                         |                  |  | T <sub>J</sub> =150°C |     | 6.65 |     |      |
| Reverse Recovery Charge | Q <sub>rr</sub>  |  | T <sub>J</sub> =25°C  |     | 140  |     | nC   |
|                         |                  |  | T <sub>J</sub> =150°C |     | 420  |     |      |

## Curve Characteristics

Fig. 1 - Forward Current Derating Curve

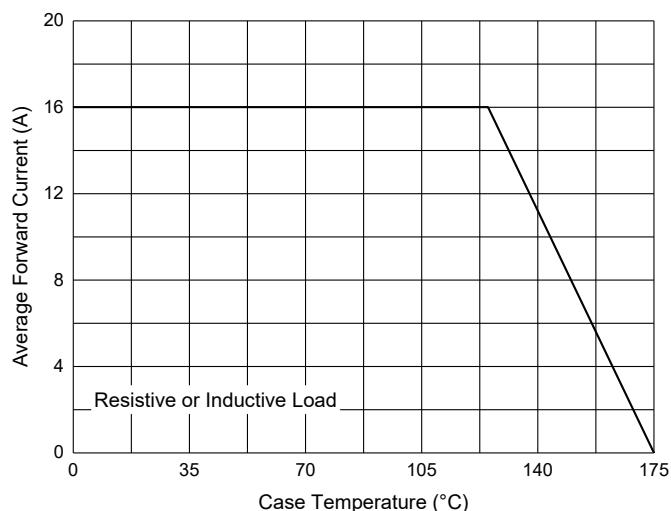


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

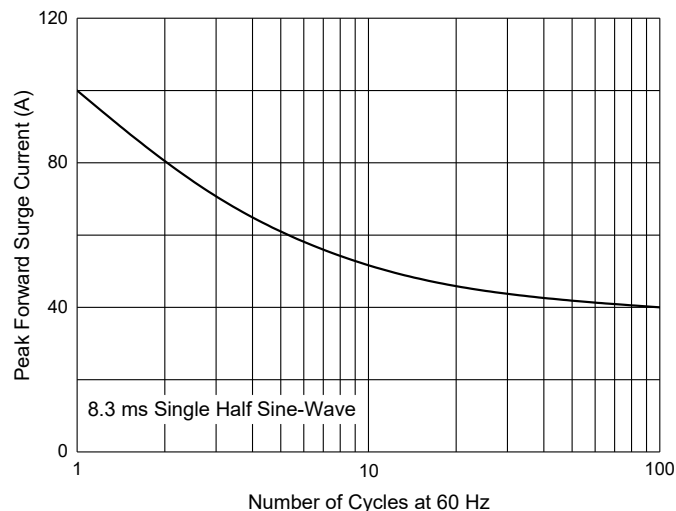


Fig. 3 - Typical Forward Characteristics

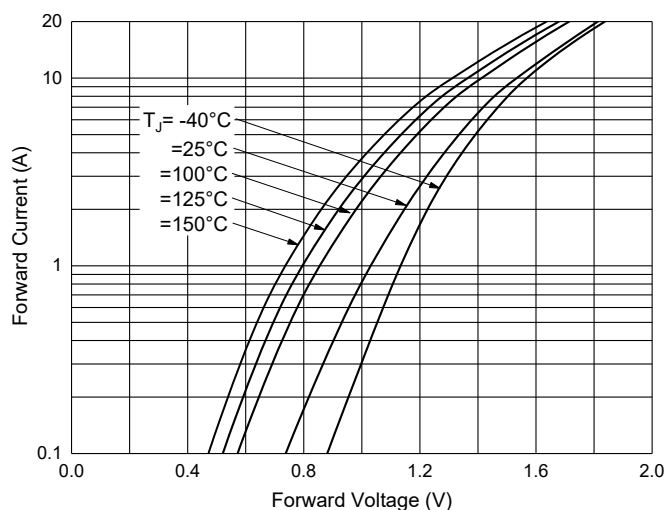


Fig. 4 - Typical Reverse Leakage Characteristics

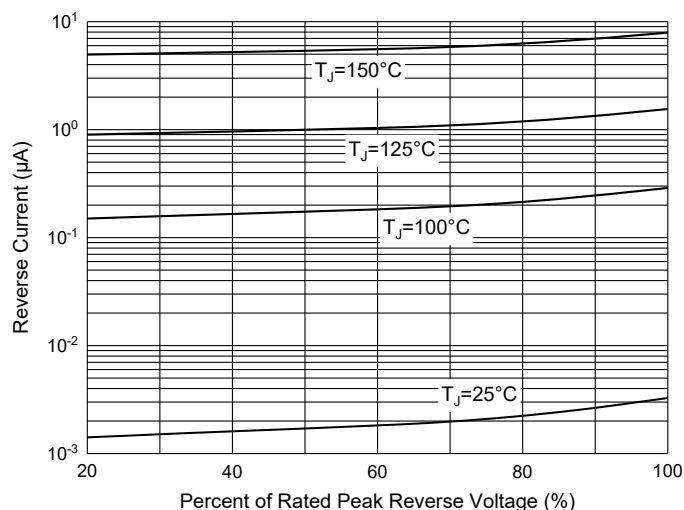


Fig. 5 - Typical Capacitance Characteristics

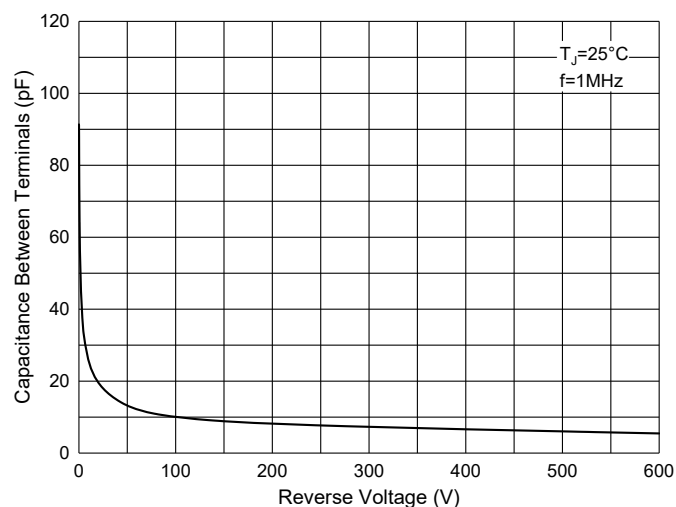
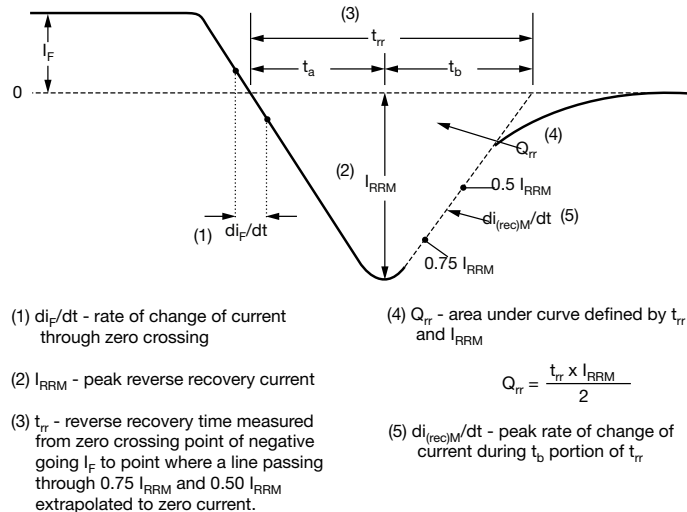


Fig. 6 - Reverse Recovery Waveform and Definitions



## Ordering Information

| Device         | Packing                                  |
|----------------|--|
| Part Number-BP | Bulk:50pcs/Tube, 1Kpcs/Box, 5Kpcs/Carton |

Note : Adding "-HF" Suffix For Halogen Free, eg. Part Number-BP-HF

### \*\*\*IMPORTANT NOTICE\*\*\*

**Micro Commercial Components Corp.** reserves the right to make changes without further notice to any product herein to make corrections, modifications , enhancements , improvements , or other changes . **Micro Commercial Components Corp.** does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights ,nor the rights of others . The user of products in such applications shall assume all risks of such use and will agree to hold **Micro Commercial Components Corp.** and all the companies whose products are represented on our website, harmless against all damages. **Micro Commercial Components Corp.** products are sold subject to the general terms and conditions of commercial sale, as published at <https://www.mccsemi.com/Home/TermsAndConditions>.

### \*\*\*LIFE SUPPORT\*\*\*

MCC's products are not authorized for use as critical components in life support devices or systems without the express written approval of Micro Commercial Components Corporation.

### \*\*\*CUSTOMER AWARENESS\*\*\*

Counterfeiting of semiconductor parts is a growing problem in the industry. Micro Commercial Components (MCC) is taking strong measures to protect ourselves and our customers from the proliferation of counterfeit parts. MCC strongly encourages customers to purchase MCC parts either directly from MCC or from Authorized MCC Distributors who are listed by country on our web page cited below. Products customers buy either from MCC directly or from Authorized MCC Distributors are genuine parts, have full traceability, meet MCC's quality standards for handling and storage. **MCC will not provide any warranty coverage or other assistance for parts bought from Unauthorized Sources.** MCC is committed to combat this global problem and encourage our customers to do their part in stopping this practice by buying direct or from authorized distributors.

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Micro Commercial Components \(MCC\):](#)

[MURS1660CTA-BP](#)