

## Switchmode Full Plastic Ultra-Fast Power Rectifiers

Designed for use in switching power supplies, inverters and as free wheeling diodes. These state-of-the-art devices have the following

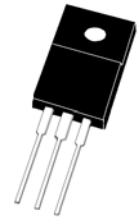
### Features

- \* Low  $T_{RR}$
- \* High Surge Capacity
- \* Low Power Loss, High efficiency
- \* 175°C Operating Junction Temperature
- \* Low Forward Voltage, High Frequency
- \* High-Switching Speed Recovery Time
- \* Plastic Material used Carries Underwriters Laboratory Flammability Classification 94V-0
- \* *Pb free*
- \* *In compliance with EU RoHs directives*



**ULTRA FAST  
RECTIFIERS**

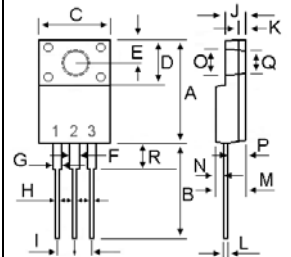
**16 AMPERES  
600 VOLTS**



**ITO-220AB**

### MAXIMUM RATINGS

| Characteristic  | Symbol                          | UFEF16C60C  | Unit |
|---|---------------------------------|-------------|------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage                  | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | 600         | V    |
| RMS Reverse Voltage   | $V_{R(RMS)}$                    | 420         | V    |
| Average Rectifier Forward Current ( per diode )<br>Total Device (Rated $V_R$ ), $T_C=125^\circ\text{C}$ | $I_{F(AV)}$                     | 8<br>16     | A    |
| Peak Repetitive Forward Current<br>(Rate $V_R$ , Square Wave, 20kHz)                                    | $I_{FM}$                        | 16          | A    |
| Non-Repetitive Peak Surge Current (Surge applied at rate load conditions half-wave, single phase, 60Hz) | $I_{FSM}$                       | 150         | A    |
| Operating and Storage Junction Temperature Range  | $T_J, T_{stg}$                  | -65 to +175 | °C   |



| DIM | MILLIMETERS |       |
|-----|-------------|-------|
|     | MIN         | MAX   |
| A   | 14.80       | 16.10 |
| B   | 12.65       | 13.80 |
| C   | 9.85        | 10.36 |
| D   | 4.60        | 6.80  |
| E   | 2.50        | 3.50  |
| F   | 1.00        | 1.45  |
| G   | 1.00        | 1.45  |
| H   | 0.30        | 0.90  |
| I   | 2.40        | 2.70  |
| J   | 2.34        | 3.30  |
| K   | 0.55        | 1.30  |
| L   | 0.36        | 0.80  |
| M   | 4.20        | 4.90  |
| N   | 1.10        | 1.80  |
| O   | 2.90        | 3.50  |
| P   | 2.50        | 3.15  |
| Q   | 2.90        | 3.50  |
| R   | 3.10        | 4.85  |

### THERMAL RESISTANCES

|   |                 |     |      |
|---|-----------------|-----|------|
| Typical Thermal Resistance junction to case | $R_{\theta jc}$ | 4.2 | °C/w |
|---|-----------------|-----|------|

### ELECTRICAL CHARACTERISTICS

| Characteristic   | Symbol   | Min. | Typ.         | Max.       | Unit |
|--|----------|------|--------------|------------|------|
| Maximum Instantaneous Forward Voltage<br>( $I_F=8$ Amp $T_C=25^\circ\text{C}$ )<br>( $I_F=8$ Amp $T_C=125^\circ\text{C}$ )             | $V_F$    | ---  | 1.85<br>1.50 | 2.2<br>--- | V    |
| Maximum Instantaneous Reverse Current<br>( Rated DC Voltage, $T_C=25^\circ\text{C}$ )<br>( Rated DC Voltage, $T_C=125^\circ\text{C}$ ) | $I_R$    | ---  | 0.02<br>5    | 25<br>---  | uA   |
| Reverse Recovery Time<br>( $I_F=0.5$ A, $I_R=1.0$ , $I_{rr}=0.25$ A )  | $T_{rr}$ | ---  | 22           | 25         | ns   |

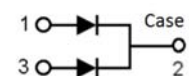


FIG-1 TYPICAL FORWARD CHARACTERISTICS

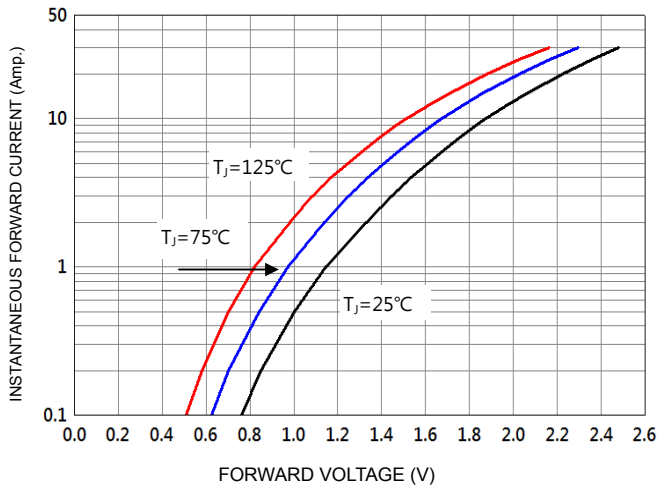


FIG-2 FORWARD CURRENT DERATING CURVE

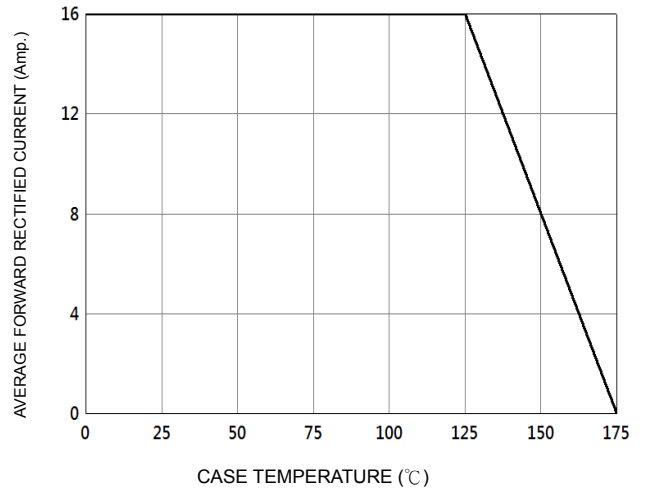


FIG-3 TYPICAL REVERSE CHARACTERISTICS

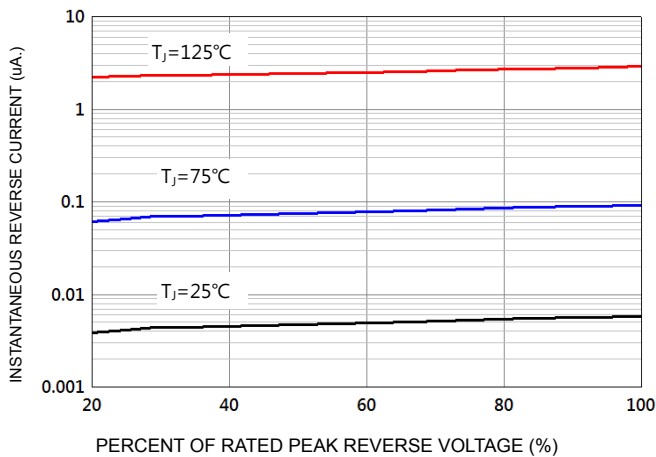
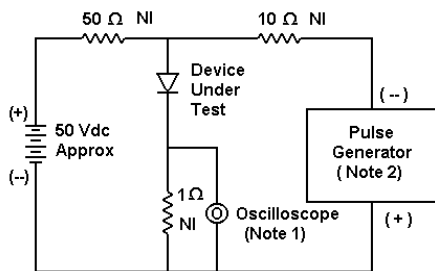
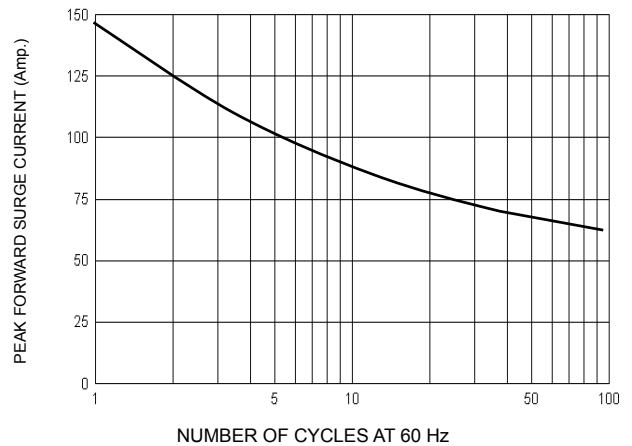
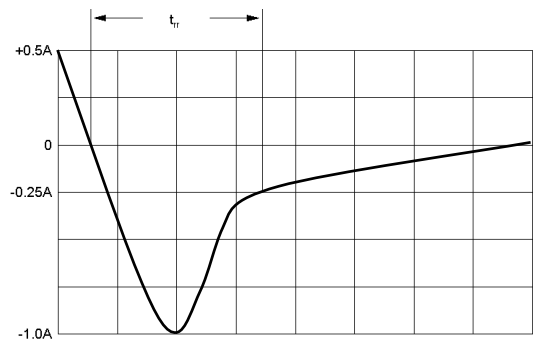


FIG-4 PEAK FORWARD SURGE CURRENT



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



Set time base for 10/20 ns/cm

FIG-5 Reverse Recovery Time Characteristic and Test Circuit Diagram

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