

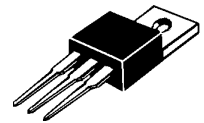
### Switchmode Dual Ultrafast Power Rectifiers

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

- \* High Surge Capacity
- \* Low Power Loss, High efficiency
- \* Glass Passivated chip junctions
- \* 150 °C Operating Junction Temperature
- \* Low Stored Charge Majority Carrier Conduction
- \* Low Forward Voltage, High Current Capability
- \* High-Switching Speed 35 Nanosecong Recovery Time
- \* Plastic Material used Carries Underwriters Laboratory Flammability Classification 94V-O

**ULTRA FAST  
RECTIFIERS**

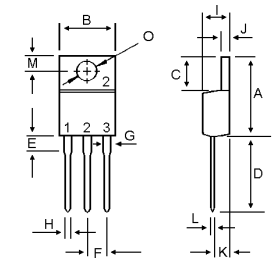
**6 AMPERES  
50-200 VOLTS**



**TO-220AB**

### MAXIMUM RATINGS

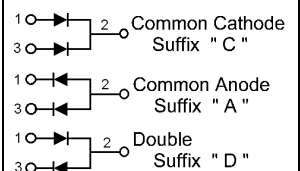
| Characteristic                                                                                               | Symbol                          | U06C05      | U06C10 | U06C15 | U06C20 | Unit |
|--------------------------------------------------------------------------------------------------------------|---------------------------------|-------------|--------|--------|--------|------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage                       | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | 50          | 100    | 150    | 200    | V    |
| RMS Reverse Voltage                                                                                          | $V_{R(RMS)}$                    | 35          | 70     | 105    | 140    | V    |
| Average Rectifier Forward Current<br>Total Device (Rated $V_R$ ), $T_C=100$                                  | $I_{F(AV)}$                     | 3.0<br>6.0  |        |        |        | A    |
| Peak Repetitive Forward Current<br>(Rate $V_R$ , Square Wave, 20kHz)                                         | $I_{FM}$                        | 6.0         |        |        |        | A    |
| Non-Repetitive Peak Surge Current<br>(Surge applied at rate load conditions<br>halfware, single phase, 60Hz) | $I_{FSM}$                       | 75          |        |        |        | A    |
| Operating and Storage Junction<br>Temperature Range                                                          | $T_J$ , $T_{stg}$               | -65 to +150 |        |        |        |      |



| DIM | MILLIMETERS |       |
|-----|-------------|-------|
|     | MIN         | MAX   |
| A   | 14.68       | 15.32 |
| B   | 9.78        | 10.42 |
| C   | 6.02        | 6.52  |
| D   | 13.06       | 14.62 |
| E   | 3.57        | 4.07  |
| F   | 2.42        | 2.66  |
| G   | 1.12        | 1.36  |
| H   | 0.72        | 0.96  |
| I   | 4.22        | 4.98  |
| J   | 1.14        | 1.38  |
| K   | 2.20        | 2.98  |
| L   | 0.33        | 0.55  |
| M   | 2.48        | 2.98  |
| O   | 3.70        | 3.90  |

### ELECTRIAL CHARACTERISTICS

| Characteristic                                                                                                 | Symbol   | U06C05       | U06C10 | U06C15 | U06C20 | Unit |
|----------------------------------------------------------------------------------------------------------------|----------|--------------|--------|--------|--------|------|
| Maximum Instantaneous Forward Voltage<br>( $I_F = 3.0$ Amp $T_C = 25$ )<br>( $I_F = 3.0$ Amp $T_C = 125$ )     | $V_F$    | 0.95<br>0.86 |        |        |        | V    |
| Maximum Instantaneous Reverse Current<br>( Rated DC Voltage, $T_C = 25$ )<br>( Rated DC Voltage, $T_C = 125$ ) | $I_R$    | 5.0<br>200   |        |        |        | uA   |
| Reverse Recovery Time<br>( $I_F = 0.5$ A, $I_R = 1.0$ , $I_{rr} = 0.25$ A )                                    | $T_{rr}$ | 35           |        |        |        | ns   |
| Typical Junction Capacitance<br>(Reverse Voltage of 4 volts & f=1 MHz)                                         | $C_P$    | 55           |        |        |        | pF   |



# U06C05 Thru U06C20

FIG-1 TYPICAL FORWARD CHARACTERISTICS

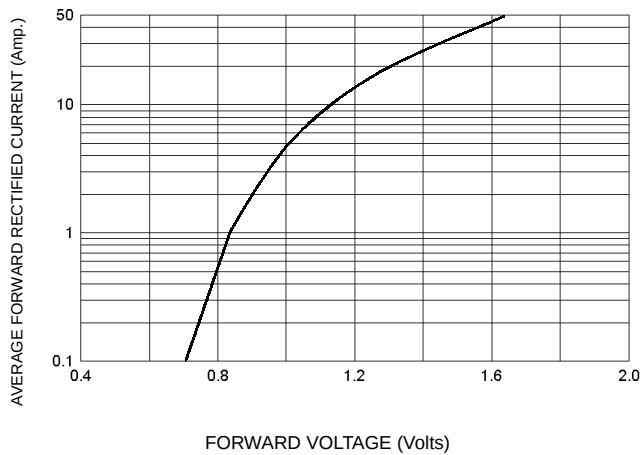


FIG-2 TYPICAL REVERSE CHARACTERISTICS

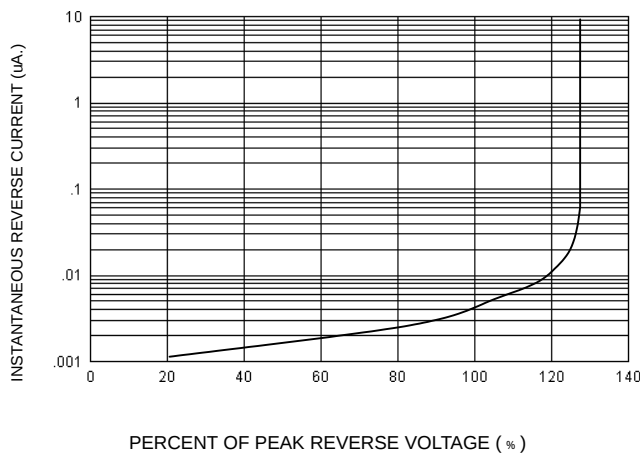


FIG-3 FORWARD CURRENT DERATING CURVE

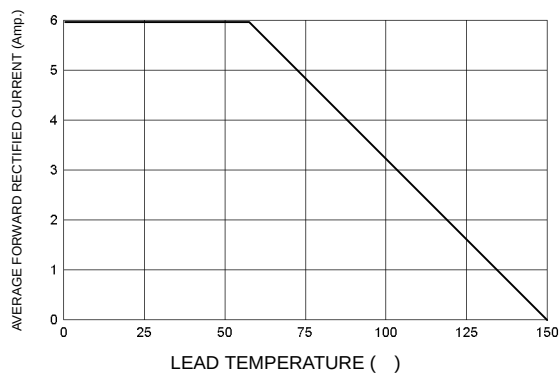


FIG-4 TYPICAL JUNCTION CAPACITANCE

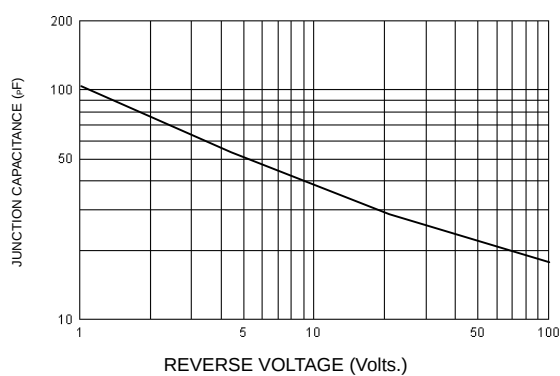
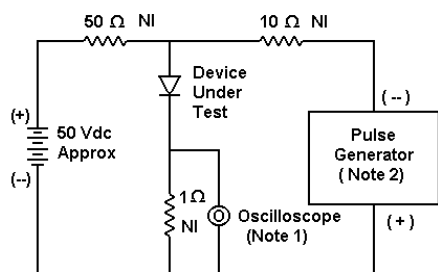
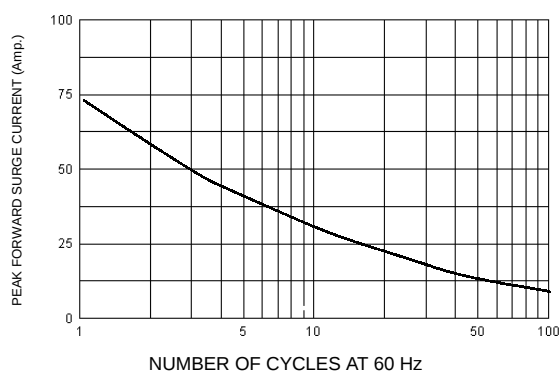
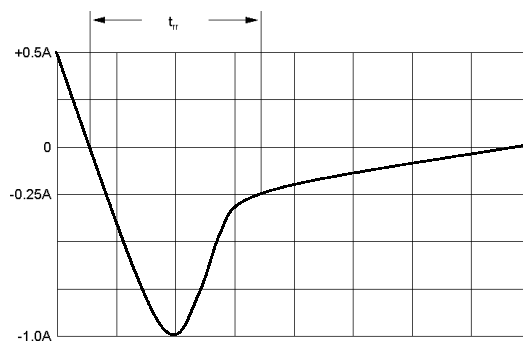


FIG-5 PEAK FORWARD SURGE CURRENT



- 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 10/20 ns/cm

FIG-6 Reverse Recovery Time Characteristic and Test Circuit Diagram