

Switchmode Full Plastic 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 Operating Junction Temperature
- * Low Stored Charge Majority Carrier Conduction
- * Low Forward Voltage , High Current Capability
- * High-Switching Speed 50 & 75 Nanosecond Recovery Time
- * Plastic Material used Carries Underwriters Laboratory

**ULTRA FAST
RECTIFIERS**

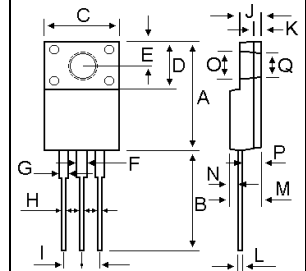
**12 AMPERES
300-600 VOLTS**



ITO-220AB

MAXIMUM RATINGS

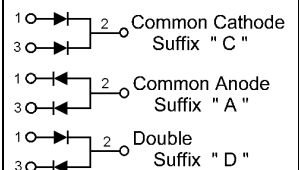
| Characteristic | Symbol | URF12 | | | | Unit |
|--------------------------------------------------------------------------------------------------------------|---------------------------------|-------------|-----|-----|-----|------|
| | | 30 | 40 | 50 | 60 | |
| Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage | V_{RRM} V_{RWM} V_R | 300 | 400 | 500 | 600 | V |
| RMS Reverse Voltage | $V_{R(RMS)}$ | 210 | 280 | 350 | 420 | V |
| Average Rectifier Forward Current Total Device (Rated V_R), $T_C=100$ | $I_{F(AV)}$ | 6.0 12 | | | | A |
| Peak Repetitive Forward Current (Rate V_R , Square Wave, 20kHz, $T_C=125$) | I_{FM} | 12 | | | | A |
| Non-Repetitive Peak Surge Current (Surge applied at rate load conditions halfwave, single phase, 60Hz) | I_{FSM} | 100 | | | | A |
| Operating and Storage Junction Temperature Range | T_J, T_{stg} | -65 to +150 | | | | |



| DIM | MILLIMETERS | |
|-----|-------------|-------|
| | MIN | MAX |
| A | 15.05 | 15.15 |
| B | 13.35 | 13.45 |
| C | 10.00 | 10.10 |
| D | 6.55 | 6.65 |
| E | 2.65 | 2.75 |
| F | 1.55 | 1.65 |
| G | 1.15 | 1.25 |
| H | 0.55 | 0.65 |
| I | 2.50 | 2.60 |
| J | 3.00 | 3.20 |
| K | 1.10 | 1.20 |
| L | 0.55 | 0.65 |
| M | 4.40 | 4.60 |
| N | 1.15 | 1.25 |
| P | 2.65 | 2.75 |
| O | 3.35 | 3.45 |
| Q | 3.15 | 3.25 |

ELECTRIAL CHARACTERISTICS

| Characteristic | Symbol | URF12 | | | | Unit |
|------------------------------------------------------------------------------------------------------------|----------|--------------|------------|--------------|----|---------|
| | | 30 | 40 | 50 | 60 | |
| Maximum Instantaneous Forward Voltage ($I_F=6$ Amp $T_C=25$) ($I_F=6$ Amp $T_C=125$) | V_F | 1.30 1.16 | | 1.50 1.38 | | V |
| Maximum Instantaneous Reverse Current (Rated DC Voltage, $T_C=25$) (Rated DC Voltage, $T_C=125$) | I_R | | 5.0 100 | | | μ A |
| Reverse Recovery Time ($I_F=0.5$ A, $I_R=1.0$, $I_{rr}=0.25$ A) | T_{rr} | | 50 | | | ns |
| Typical Junction Capacitance (Reverse Voltage of 4 volts & $f=1$ MHz) | C_P | 70 | | 60 | | pF |



URF1230 Thru URF1260

FIG-1 TYPICAL FORWARD CHARACTERISTICS

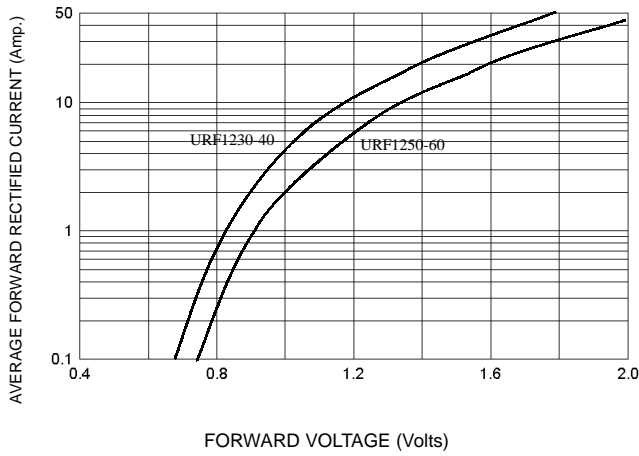


FIG-3 FORWARD CURRENT DERATING CURVE

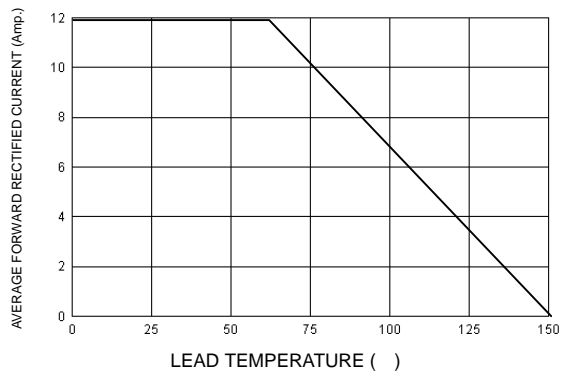


FIG-2 TYPICAL REVERSE CHARACTERISTICS

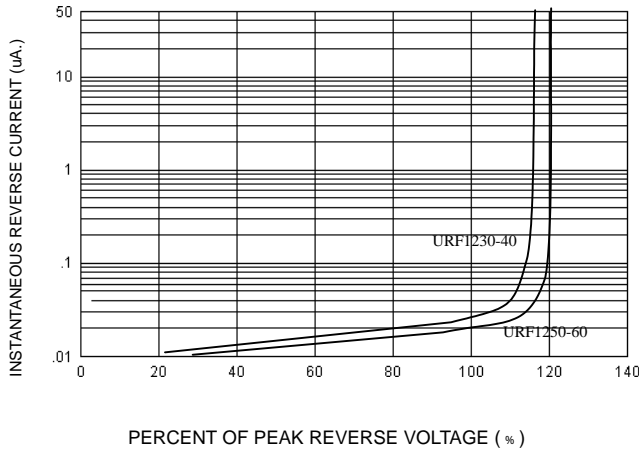


FIG-4 TYPICAL JUNCTION CAPACITANCE

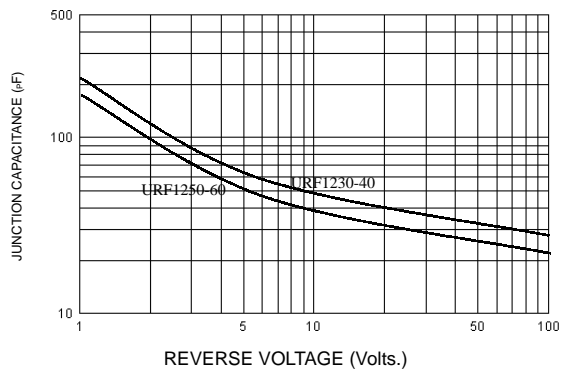
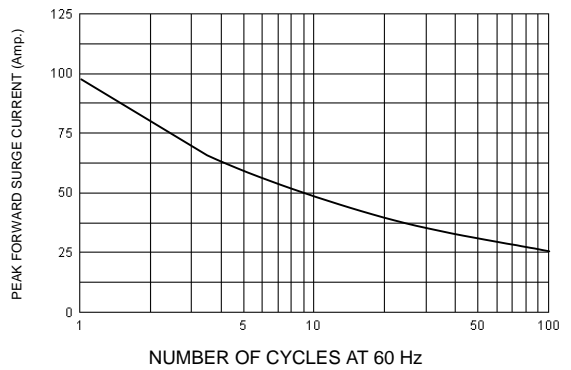
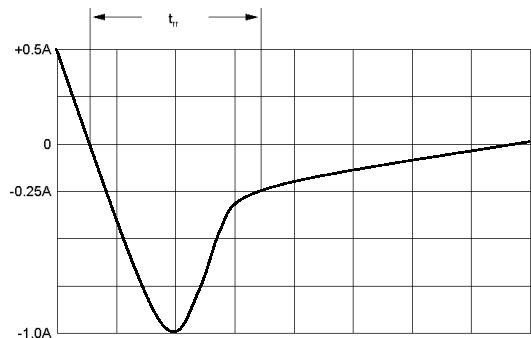


FIG-5 PEAK FORWARD SURGE CURRENT



- 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

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