

### Switchmode Full Plastic Dual Fast Recovery 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:

- \* Glass Passivated chip junctions
- \* Low Reverse Leakage Current
- \* Fast Switching for High Efficiency
- \* 150 Operating Junction Temperature
- \* Low Forward Voltage , High Current Capability
- \* Plastic Material used Carries Underwriters Laboratory Flammability Classification 94V-O

Plating pb free is indicated by box

**FAST RECOVERY  
RECTIFIERS**

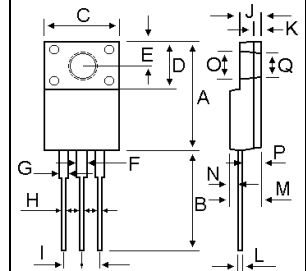
**12 AMPERES  
30-600 VOLTS**



**ITO-220AB**

### MAXIMUM RATINGS

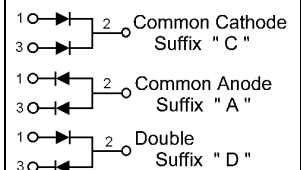
Characteristic	Symbol	FRF12				Unit
		30	40	50	60	
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	300	400	500	600	V
RMS Reverse Voltage	$V_{R(RMS)}$	210	280	350	420	V
Average Rectifier Forward Current Per Leg $T_C=125$ Per Total Device	$I_{F(AV)}$	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
Q	3.35	3.45

### ELECTRIAL CHARACTERISTICS

Characteristic	Symbol	FRF12				Unit
		30	40	50	60	
Maximum Instantaneous Forward Voltage ( $I_F=6.0$ Amp $T_C=25$ )	$V_F$	1.3				V
Maximum Instantaneous Reverse Current (Rated DC Voltage, $T_C=25$ ) (Rated DC Voltage, $T_C=125$ )	$I_R$	5.0 100				$\mu$ A
Reverse Recovery Time ( $I_F=0.5$ A, $I_R=1.0$ , $I_{rr}=0.25$ A)	$T_{rr}$	250				ns
Typical Junction Capacitance (Reverse Voltage of 4 volts & $f=1$ MHz)	$C_P$	90				pF



# FRF1230 Thru FRF1260

FIG-1 TYPICAL FORWARD CHARACTERISTICS

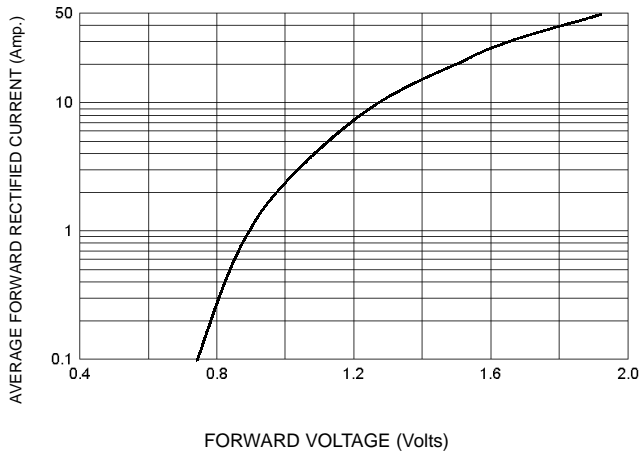


FIG-3 FORWARD CURRENT DERATING CURVE

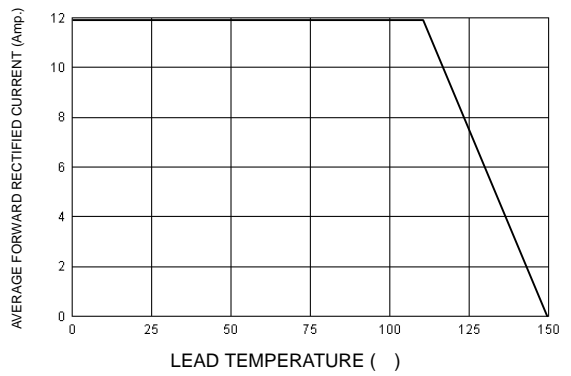


FIG-2 TYPICAL REVERSE CHARACTERISTICS

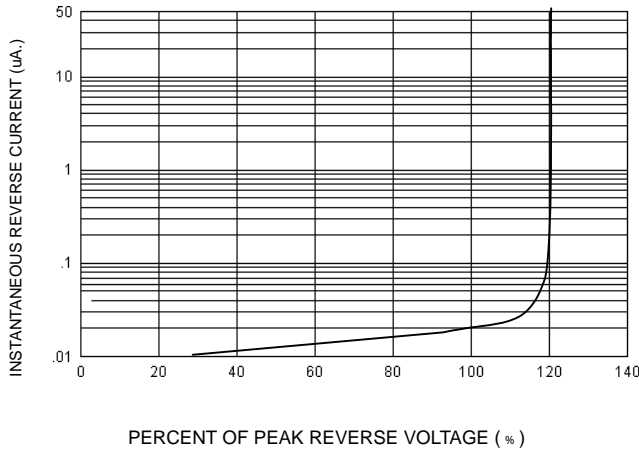


FIG-4 TYPICAL JUNCTION CAPACITANCE

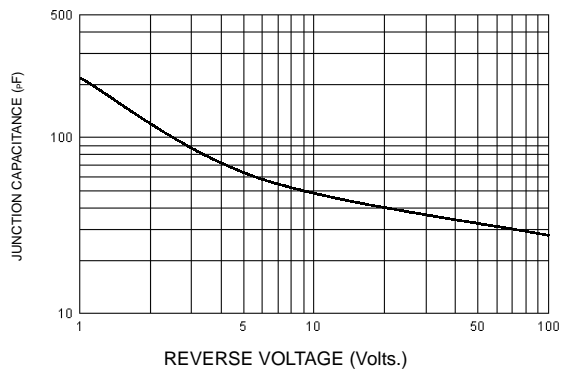
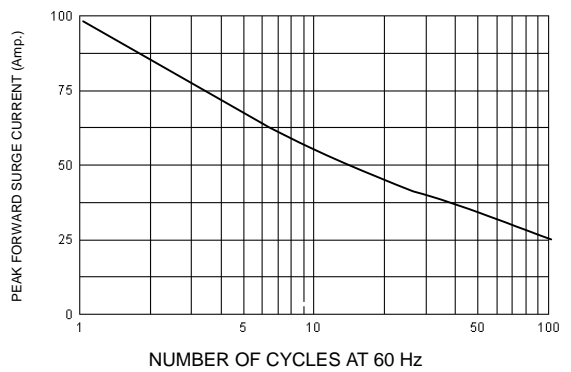


FIG-5 PEAK FORWARD SURGE CURRENT



- 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 20/50 ns/cm

FIG-6 Reverse Recovery Time Characteristic and Test Circuit Diagram