

MOSPEC

F30D05 thru F30D20

Switchmode

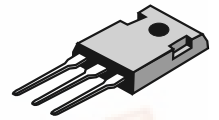
Dual Fast Recovery Power Rectifiers

... 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 °C Operating Junction Temperature
- * Low Forward Voltage , High Current Capability
- * Plastic Material used Carries Underwriters Laboratory Flammability Classification 94V-O

**FAST RECOVERY
RECTIFIERS**

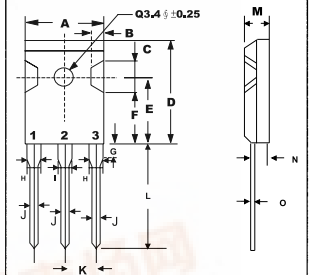
**30 AMPERES
50 -- 200 VOLTS**



TO-247 (3P)

MAXIMUM RATINGS

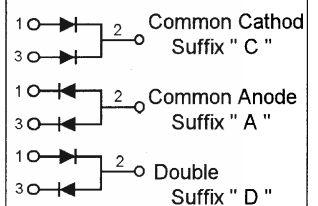
Characteristic	Symbol	F30D				Unit
		05	10	15	20	
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	50	100	150	200	V
RMS Reverse Voltage	$V_{R(RMS)}$	35	70	105	140	V
Average Rectifier Forward Current Per Leg Per Total Device $T_c=125^\circ\text{C}$	$I_{F(AV)}$	15 30				A
Peak Repetitive Forward Current (Rate V_R , Square Wave, 20kHz, $T_c=125^\circ\text{C}$)	I_{FM}	30				A
Non-Repetitive Peak Surge Current (Surge applied at rate load conditions halfwave, single phase, 60Hz)	I_{FSM}	200				A
Operating and Storage Junction Temperature Range	T_J, T_{stg}	- 65 to + 150				°C



DIM	MILLIMETERS	
	MIN	MAX
A	--	16.2
B	1.7	2.7
C	5.0	6.0
D	--	23.0
E	14.8	15.2
F	11.7	12.7
G	--	4.5
H	--	2.5
I	--	3.5
J	1.1	1.4
K	5.25	5.65
L	19	--
M	4.7	5.3
N	2.8	3.2
O	0.45	0.85

ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	F30D				Unit
		05	10	15	20	
Maximum Instantaneous Forward Voltage ($I_F=15$ Amp, $T_c=25^\circ\text{C}$)	V_F	1.30				V
Maximum Instantaneous Reverse Current (Rated DC Voltage, $T_c=25^\circ\text{C}$) (Rated DC Voltage, $T_c=125^\circ\text{C}$)	I_R	10 700				uA
Reverse Recovery Time ($I_F=0.5$ A, $I_R=1.0$, $I_{rr}=0.25$ A)	T_{rr}	150				ns
Typical Junction Capacitance (Reverse Voltage of 4 volts & $f=1$ MHz)	C_p	250				pF



F30D05 Thru F30D20

FIG-1 TYPICAL FORWARD CHARACTERISTICS

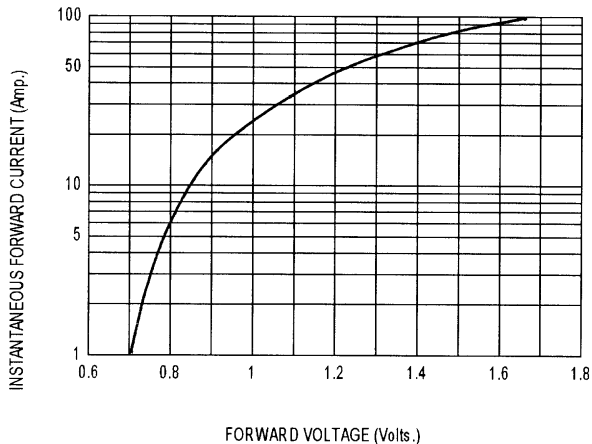


FIG-2 TYPICAL REVERSE CHARACTERISTICS

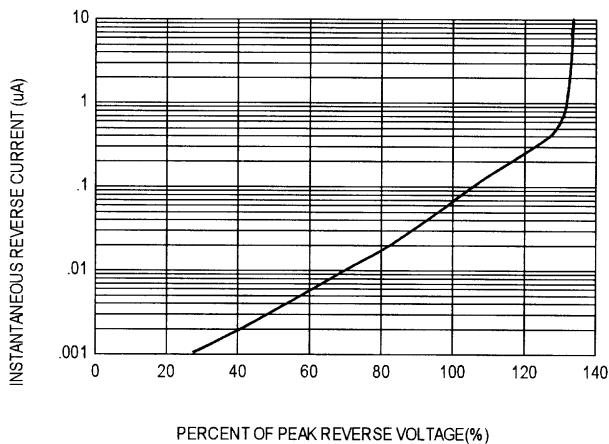


FIG-3 FORWARD CURRENT DERATING CURVE

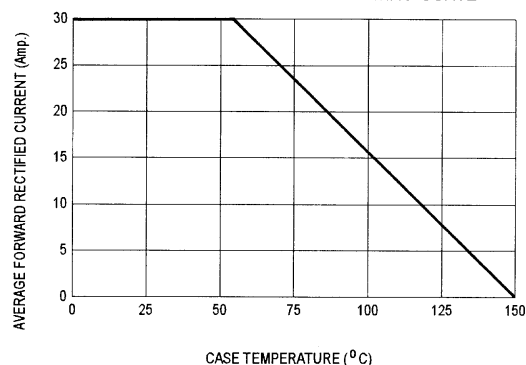


FIG-4 TYPICAL JUNCTION CAPACITANCE

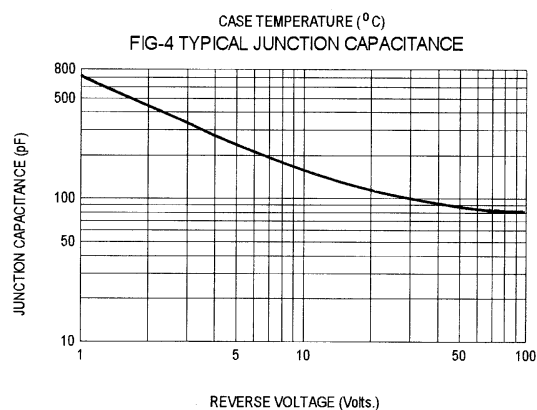
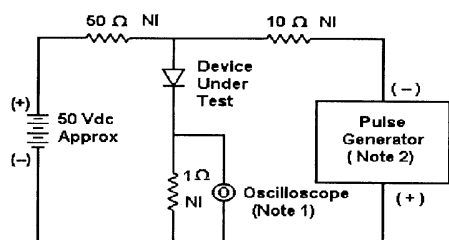
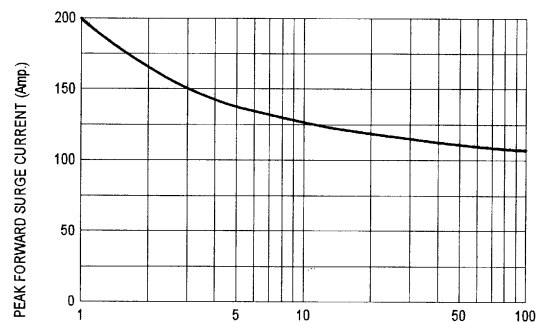
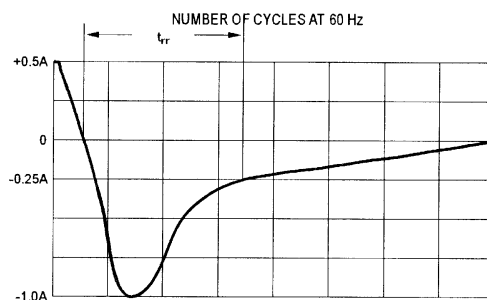


FIG-5 PEAK FORWARD SURGE CURRENT



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 50 ns/div

Fig-6 Reverse Recovery Time Characteristic and Test Circuit Diagram