

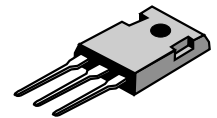
Switchmode Dual Ultrafast Power Rectifiers

... 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 50 Nanosecond Recovery Time
- * Plastic Material used Carries Underwriters Laboratory

**ULTRA FAST
RECTIFIERS**

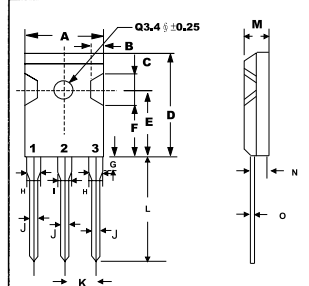
**20 AMPERES
300 -- 600 VOLTS**



TO-247 (3P)

MAXIMUM RATINGS

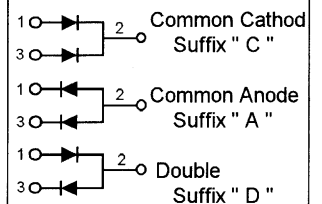
Characteristic	Symbol	U20D				Unit
		30	40	50	60	
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	300	400	500	600	V
RMS Reverse Voltage	$V_{R(RMS)}$	210	280	350	420	V
Average Rectifier Forward Current Per Leg Per Total Device	$I_{F(AV)}$ $T_c=125^\circ\text{C}$	10 20				A
Peak Repetitive Forward Current (Rate V_R , Square Wave, 20kHz, $T_c=125^\circ\text{C}$)	I_{FM}	20				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	U20D				Unit
		30	40	50	60	
Maximum Instantaneous Forward Voltage ($I_F=10$ Amp, $T_c = 25^\circ\text{C}$) ($I_F=10$ Amp, $T_c = 100^\circ\text{C}$)	V_F	1.30 1.15		1.50 1.36		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	10 500				uA
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				pF



U20D30 Thru U20D60

FIG-1 TYPICAL FORWARD CHARACTERISTICS

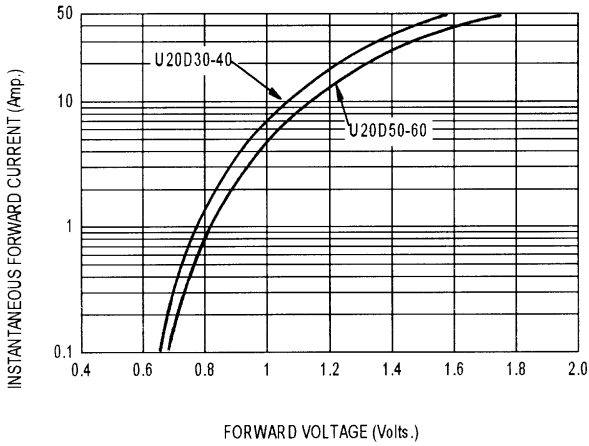


FIG-2 TYPICAL REVERSE CHARACTERISTICS

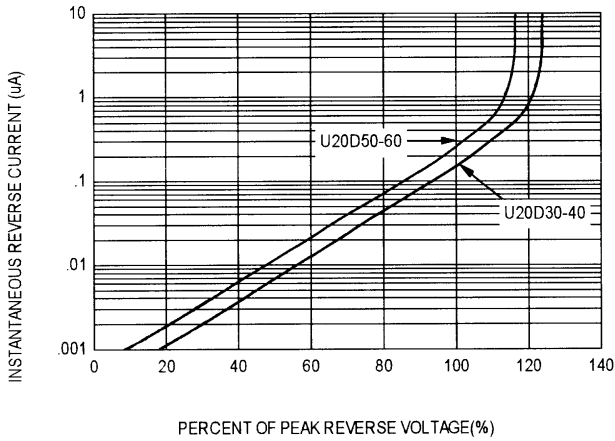


FIG-3 FORWARD CURRENT DERATING CURVE

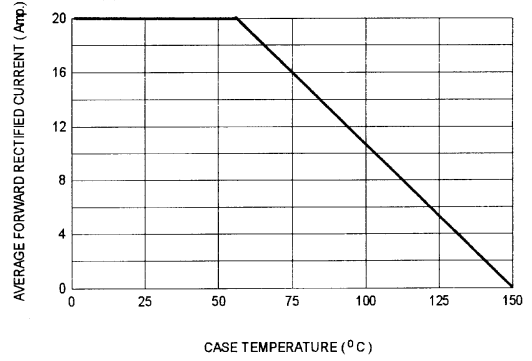


FIG-4 TYPICAL JUNCTION CAPACITANCE

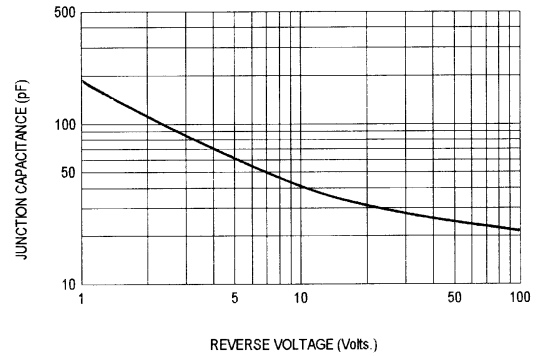
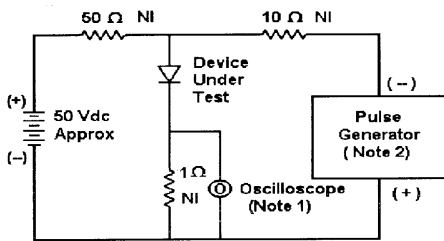
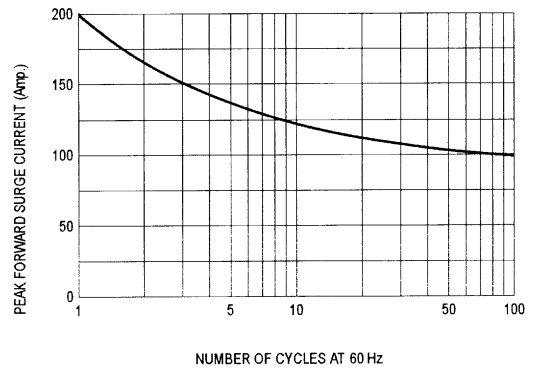
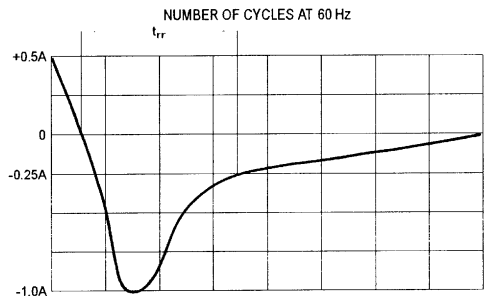


FIG-5 PEAK FORWARD SURGE CURRENT



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/div

Fig-6 Reverse Recovery Time Characteristic and Test Circuit Diagram