MOSPEC

U30D05 thru U30D20

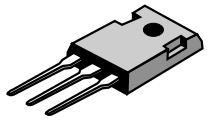
Switchmode
Dual Ultrafast Power Rectifiers

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

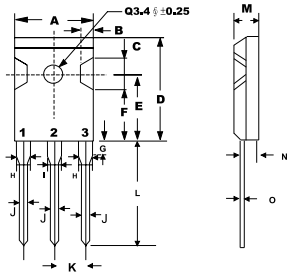
* High Surge Capacity
* Low Power Loss, High efficiency
* Glass Passivated chip junctions
* 150 °C Operating Junction Temperature
* Low Stored Charge Majority Carrier Conduction
* Low Forward Voltage , High Current Capability
* High-Switching Speed 35 Nanosecond Recovery Time
* Plastic Material used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

ULTRA FAST RECTIFIERS

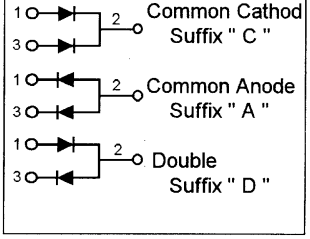
30 AMPERES
50 -- 200 VOLTS



TO-247 (3P)



DIM	MILLMETERS	
	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



MAXIMUM RATINGS

Characteristic	Symbol	U30D				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 T_C=125°C Per Total Device	$I_{F(AV)}$	15 30				A
Peak Repetitive Forward Current (Rate V_R ,Square Wave,20kHz,T_C=125°C)	I_{FM}	30				A
Non-Repetitive Peak Surge Current (Surge applied at rate load conditions halfware,single phase,60Hz)	I_{FSM}	300				A
Operating and Storage Junction Temperature Range	T_J , T_{stg}	- 65 to + 150				°C

ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	U30D				Unit
		05	10	15	20	
Maximum Instantaneous Forward Voltage (I_F=15 Amp, T_C = 25 °C) (I_F=15 Amp, T_C = 100 °C)	V_F	0.975 0.870				V
Maximum Instantaneous Reverse Current (Rated DC Voltage, T_C = 25 °C) (Rated DC Voltage, T_C = 125 °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}	35				ns
Typical Junction Capacitance (Reverse Voltage of 4 volts & f=1 MHz)	C_P	250				pF

U30D05 Thru U30D20

FIG-1 TYPICAL FORWARD CHARACTERISTICS

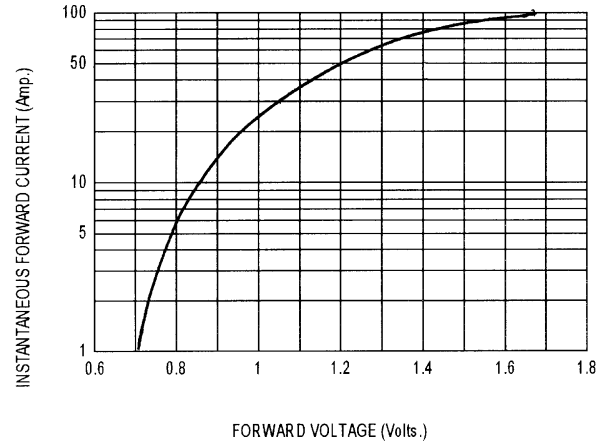
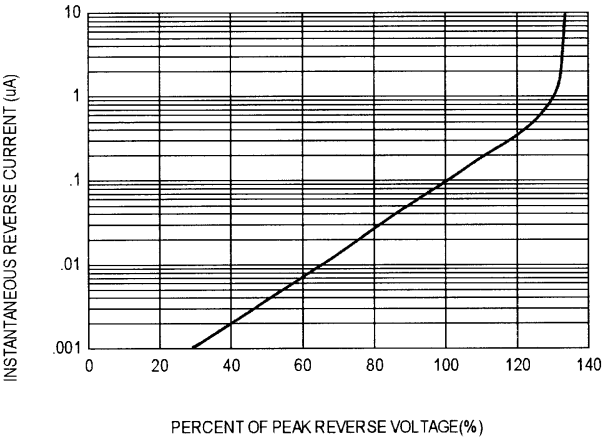
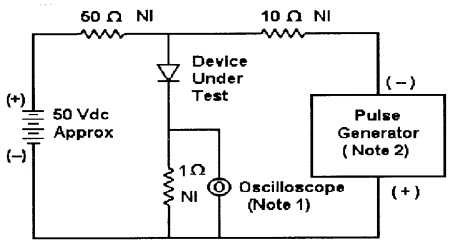


FIG-2 TYPICAL REVERSE CHARACTERISTICS





Notes:
1. Rise Time = 7 ns max. Input Impedance =1 M Ω , 22 pF
2. Rise Time = 10 ns max. Input Impedance = 50 Ω

FIG-3 FORWARD CURRENT DERATING CURVE

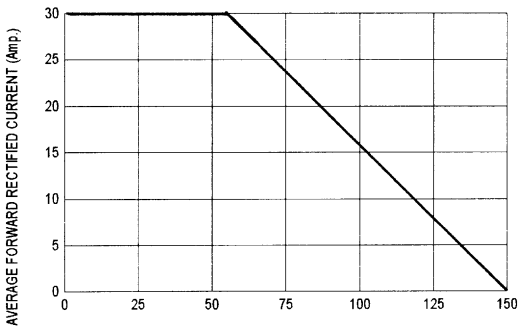


FIG-4 TYPICAL JUNCTION CAPACITANCE

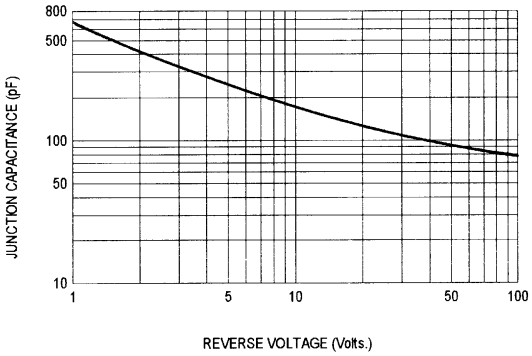
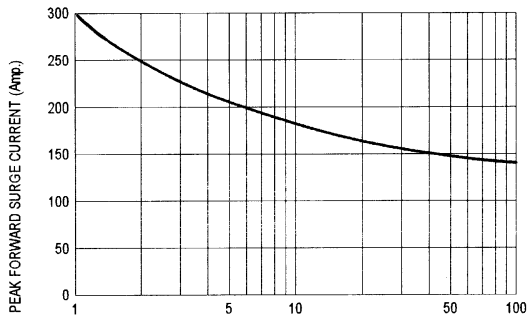


FIG-5 PEAK FORWARD SURGE CURRENT



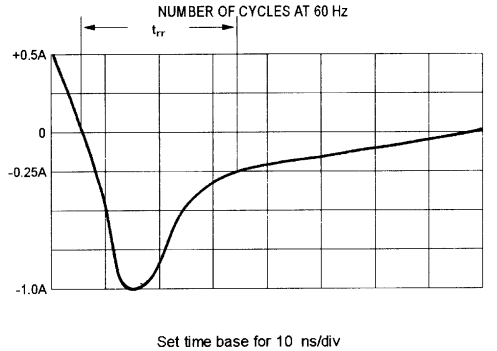


Fig-6 Reverse Recovery Time Characteristic and Test Circuit Diagram

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