MOSPEC

U30D05 Thru U30D20

Switchmode
Dual Ultrafast Power Rectifiers

ULTRA FAST RECTIFIERS

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30 AMPERES
50-200 VOLTS

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

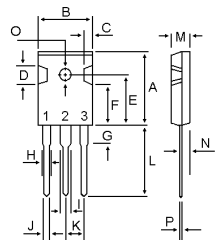
- ＊Glass Passivated chip junctions
- ＊Low Reverse Leakage Current
- ＊Fast Switching for High Efficiency
- ＊150℃ Operating Junction Temperature
- ＊Low Stored Charge Majority Carrier Conduction
- ＊Low Forward Voltage , High Current Capability
- ＊Plastic Material used Carries Underwriters Laboratory Flammability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

TO-3P

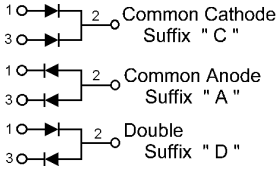
Plating pb free is indicated by box

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 Per Total Device	$I_{F(AV)}$	15 30				A
Peak Repetitive Forward Current (Rate V_R, Square Wave, 20kHz)	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				℃



DIM	MILLIMETERS	
	MIN	MAX
A	20.63	22.38
B	15.38	16.20
C	1.90	2.70
D	5.10	6.10
E	14.81	15.22
F	11.72	12.84
G	4.20	4.50
H	1.82	2.46
I	2.92	3.23
J	0.89	1.53
K	5.26	5.66
L	18.50	21.50
M	4.68	5.36
N	2.40	2.80
O	3.25	3.65
P	0.55	0.70



ELECTRIAL CHARACTERISTICS

Characteristic	Symbol	U30D				Unit
		05	10	15	20	
Maximum Instantaneous Forward Voltage (I_F =15 Amp T_C = 25℃) (I_F =15 Amp T_C =125℃)	V_F	0.975 0.880				V
Maximum Instantaneous Reverse Current (Rated DC Voltage, T_C = 25℃) (Rated DC Voltage, T_C = 150℃)	I_R	10 500				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 CHARACTERISITICS

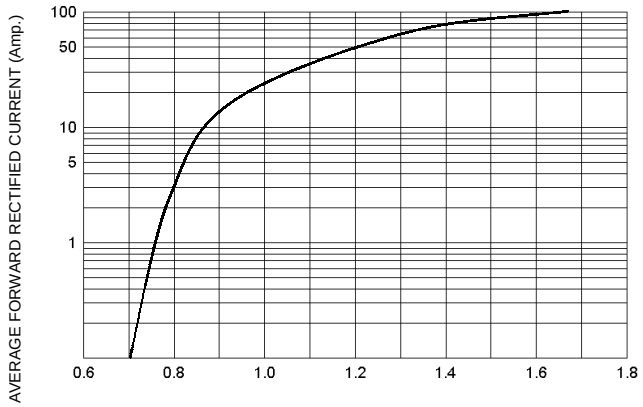


FIG-2 TYPICAL REVERSE CHARACTERISTICS

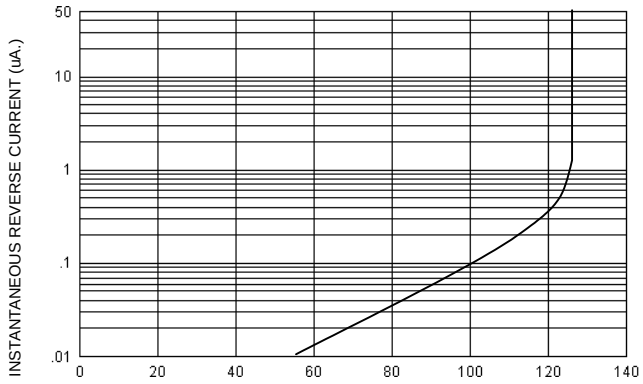


FIG-3 FORWARD CURRENT DERATING CURVE

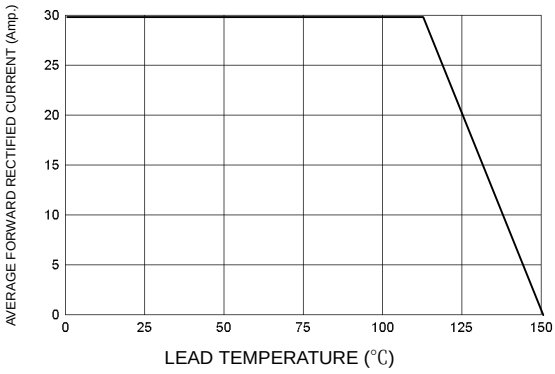


FIG-4TYPICAL JUNCTION CAPACITANCE

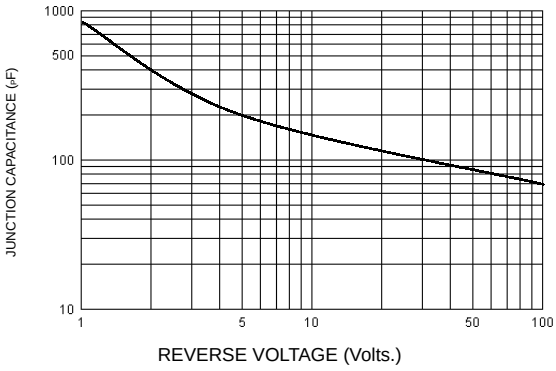
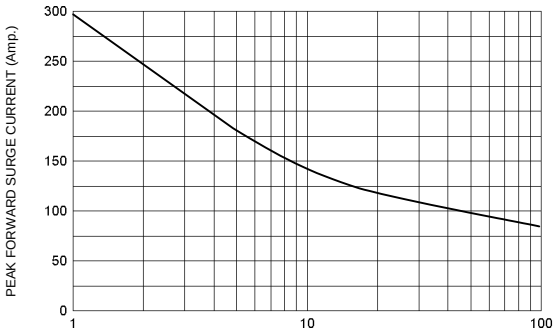
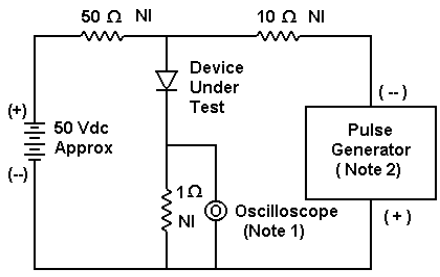
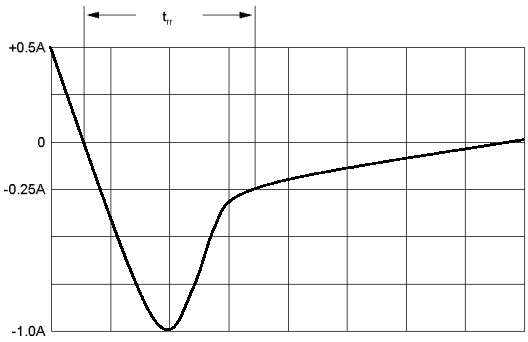


FIG-5PEAK FORWARD SURGE CURRENT





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