MOSPEC

U30D40C

Switchmode
Dual Ultrafast Power Rectifiers

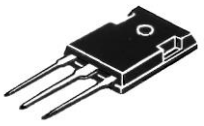
Designed for use in switching power supplies, inverters and as free-wheeling diodes. These state-of-the-art devices have the following

Features

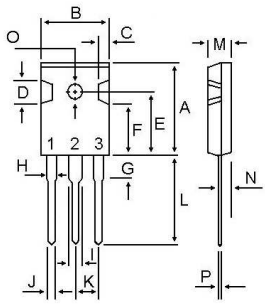
- ∗Low Reverse Leakage Current
- ∗Fast Switching for High Efficiency
- ∗150℃ Operating Junction Temperature
- ∗Low Stored Charge Majority Carrier Conduction
- ∗Low Forward Voltage , High Current Capability
- ∗Plastic Material used Carries Underwriters Laboratory Flammability Classification 94V-O
- ∗Pb free
- ∗In compliance with EU RoHs directives

ULTRA FAST RECTIFIERS

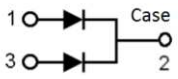
30 AMPERES
400 VOLTS



TO-3P



DIM	MILLIMETERS	
	MIN	MAX
A	20.80	21.80
B	15.38	16.20
C	1.90	2.70
D	5.10	6.10
E	14.50	15.50
F	11.20	13.20
G	3.75	4.35
H	1.90	2.30
I	2.90	3.30
J	1.00	1.40
K	5.26	5.66
L	19.50	20.50
M	4.68	5.36
N	2.30	2.60
O	3.45	3.85
P	0.48	0.72



MAXIMUM RATINGS

Characteristic	Symbol	U30D40C	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	400	V
RMS Reverse Voltage	$V_{R(RMS)}$	280	V
Average Rectifier Forward Current (per diode) Total Device (Rated V_R)	$I_{F(AV)}$	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 half-ware, single phase, 60Hz)	I_{FSM}	250	A
Operating and Storage Junction Temperature Range	T_J , T_{stg}	-65 to +150	℃

ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	Min.	Typ.	Max.	Unit
Maximum Instantaneous Forward Voltage (I_F =15 Amp T_C = 25℃) (I_F =15 Amp T_C = 125℃)	V_F	--- ---	1.10 0.90	1.30 ---	V
Maximum Instantaneous Reverse Current (Rated DC Voltage, T_C = 25℃) (Rated DC Voltage, T_C = 125℃)	I_R	--- ---	0.02 10	10 ---	uA
Reverse Recovery Time (I_F = 0.5 A, I_R =1.0 , I_{rr} =0.25 A)	T_{rr}	---	31	35	ns
Typical Junction Capacitance (Reverse Voltage of 4 volts & f=1 MHz)	C_P		140		$_P$F

FIG-1 TYPICAL FORWARD CHARACTERISTICS

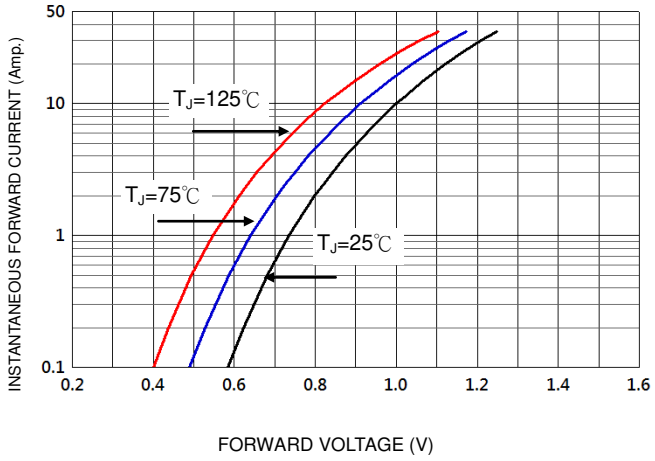


FIG-2 TYPICAL REVERSE CHARACTERISTICS

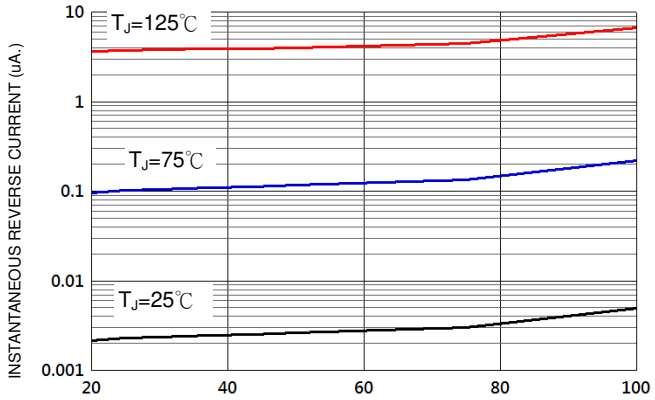


FIG-3 FORWARD CURRENT DERATING CURVE

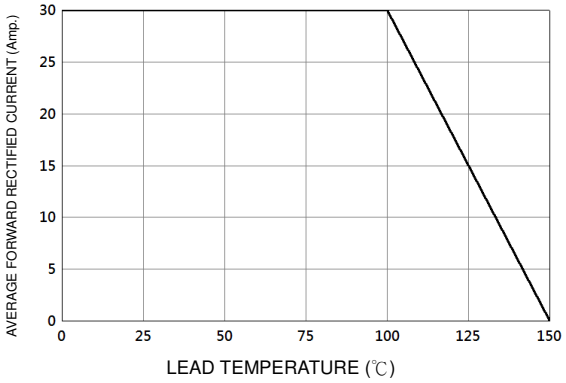


FIG-4TYPICAL JUNCTION CAPACITANCE

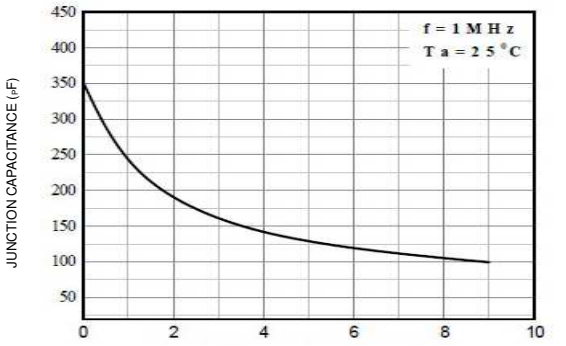
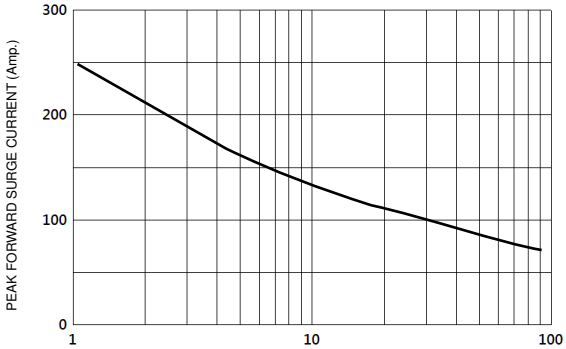
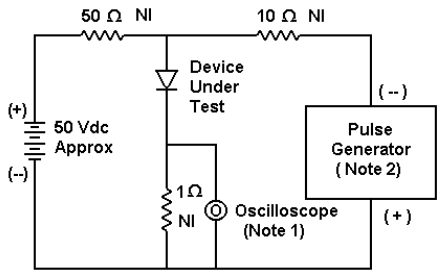
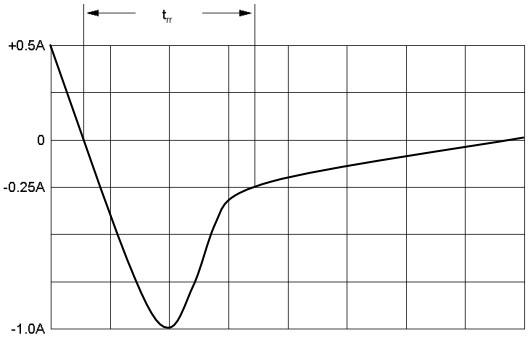


FIG-5PEAK FORWARD SURGE CURRENT





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

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