MOSPEC

URAF1030 Thru URAF1060

ULTRA FAST RECTIFIERS

10 AMPERES 300-600 VOLTS

Switchmode
Full Plastic 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:

Features

- ＊High Surge Capacity
- ＊Low Power Loss, High efficiency
- ＊Glass Passivated chip junctions
- ＊175℃ 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

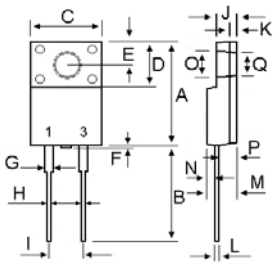
Mechanical Data

- ＊Case :JEDEC ITO-220AC molded plastic body
- ＊Terminals: Plated lead, solderable per MIL-STD-750, Method 2026
- ＊Polarity: As marked
- ＊Mounting Torque: 4-6kg.cm
- ＊Weight:1.7 g approx.

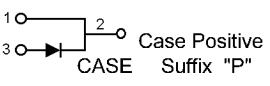
＊*In compliance with EU RoHs 2002/95/EC directives*

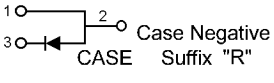


ITO-220AC



DIM	MILLIMETERS	
	MIN	MAX
A	15.05	15.15
B	13.35	13.55
C	10.00	10.10
D	6.55	6.65
E	2.65	2.75
F		1.00
G	1.15	1.25
H	0.55	0.65
I	4.80	5.20
J	3.00	3.20
K	1.10	1.20
L	0.55	0.65
M	4.40	4.60
N	1.15	1.25
O	3.35	3.45
P	2.65	2.75
Q	3.15	3.25





MAXIMUM RATINGS

Characteristic	Symbol	URAF10				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 Total Device (Rated V_R),T_C=55℃	$I_{F(AV)}$	10				A
Peak Repetitive Forward Current (Rate V_R, Square Wave, 20kHz,T_C=125℃)	I_{FM}	20				A
Non-Repetitive Peak Surge Current (Surge applied at rate load conditions half-wave, single phase, 60Hz)	I_{FSM}	175				A
Operating and Storage Junction Temperature Range	T_J , T_{stg}	-65 to +175				℃

ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	URAF10				Unit
		30	40	50	60	
Maximum Instantaneous Forward Voltage (I_F =10 Amp T_C = 25℃) (I_F =10 Amp T_C = 125℃)	V_F	1.30 1.15		1.50 1.36		V
Maximum Instantaneous Reverse Current (Rated DC Voltage, T_C = 25℃) (Rated DC Voltage, T_C = 125℃)	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 Thermal Resistance junction to case	$R_{\theta j\text{-}c}$	3.6				℃/w
Typical Junction Capacitance (Reverse Voltage of 4 volts & f=1 MHz)	C_P	85		70		pF

URAF1030 Thru URAF1060

FIG-1 TYPICAL FORWARD CHARACTERISITICS

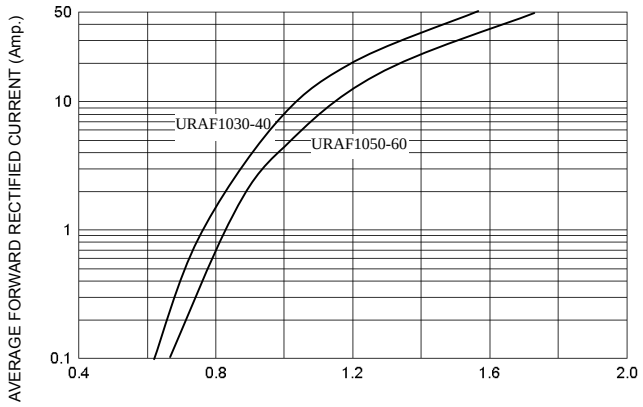


FIG-2 TYPICAL REVERSE CHARACTERISTICS

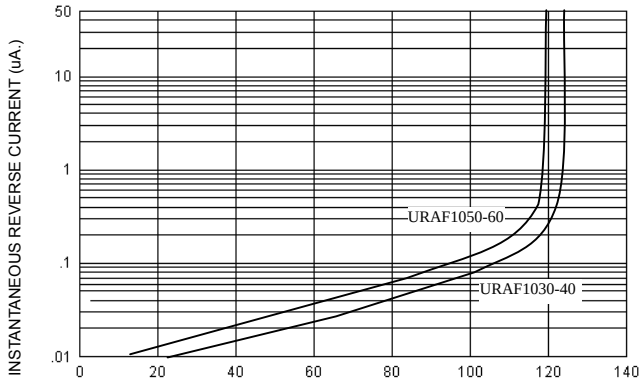


FIG-3 FORWARD CURRENT DERATING CURVE

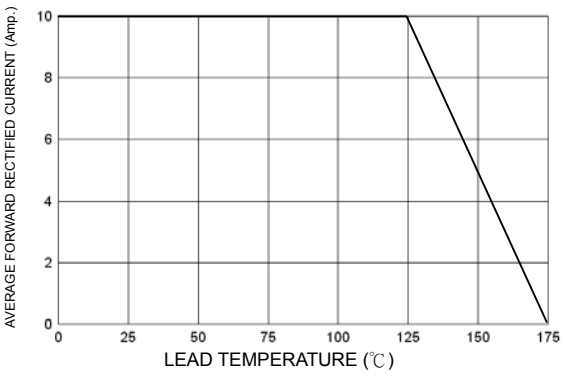


FIG-4TYPICAL JUNCTION CAPACITANCE

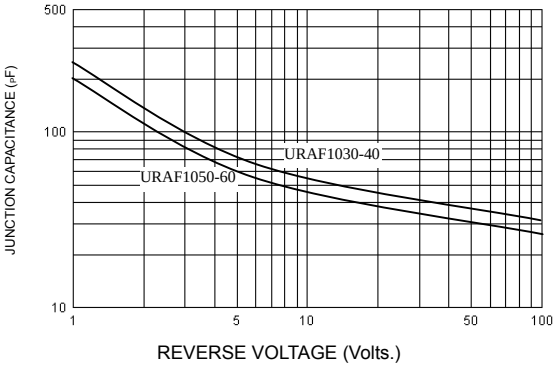
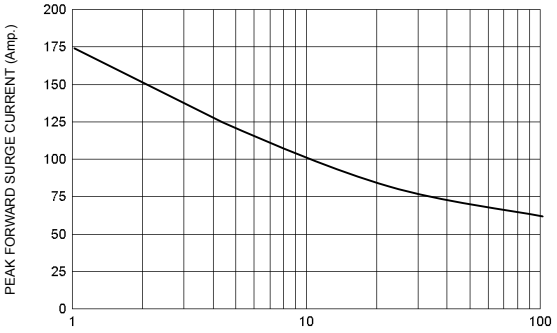
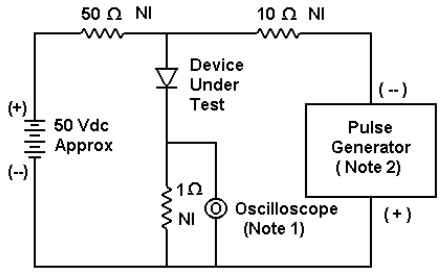
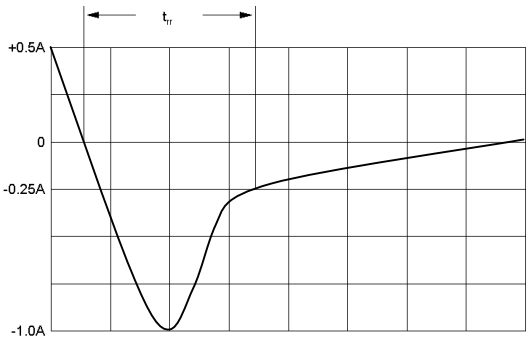


FIG-5 PEAK FORWARD SURGE CURRENT





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/cm

FIG-6 Reverse Recovery Time Characteristic and Test Circuit Diagram