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

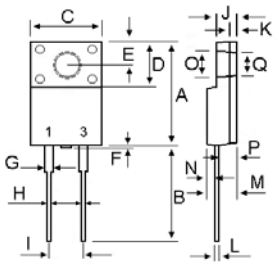
- ＊High Surge Capacity
- ＊Low Power Loss, High efficiency
- ＊Glass Passivated chip junctions
- ＊175℃ Operating Junction Temperature
- ＊Low Stored Charge Majority Carrier Conduction
- ＊Low Forward Voltage , High Current Capability
- ＊High-Switching Speed 35 Nanosecond Recovery Time
- ＊Plastic Material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

Mechanical Data

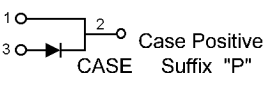
- ＊Case :JEDEC ITO-220AC molded plastic body
- ＊Terminals: Plated lead, solderable per MIL-STD-750, Method 2026
- ＊Polarity: As marked
- ＊Mounting Torque: 4-6kg.cm
- ＊Weight:1.7 g approx.

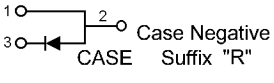
＊*In compliance with EU RoHs 2002/95/EC directives*

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

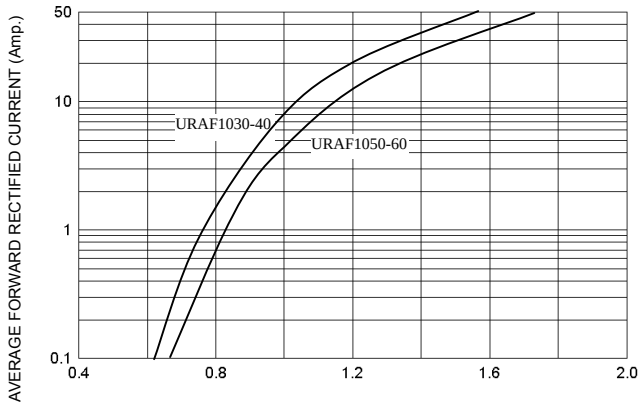


FIG-2 TYPICAL REVERSE CHARACTERISTICS

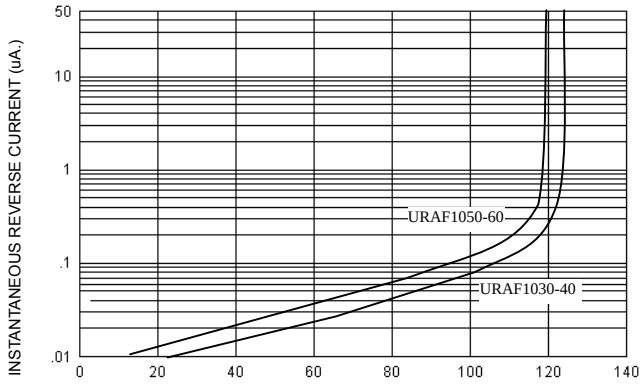


FIG-3 FORWARD CURRENT DERATING CURVE

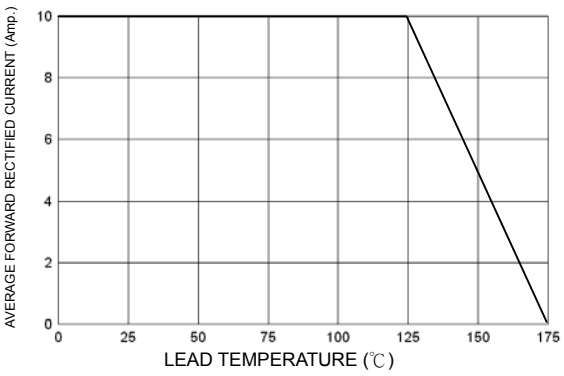


FIG-4TYPICAL JUNCTION CAPACITANCE

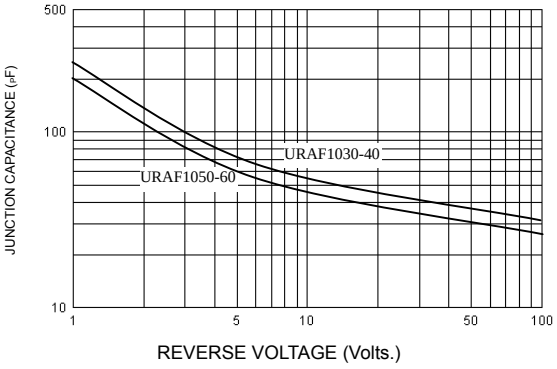
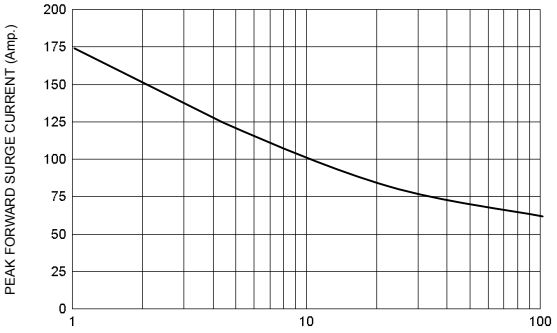
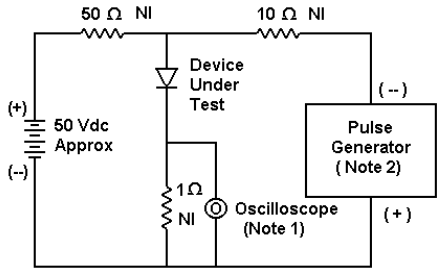
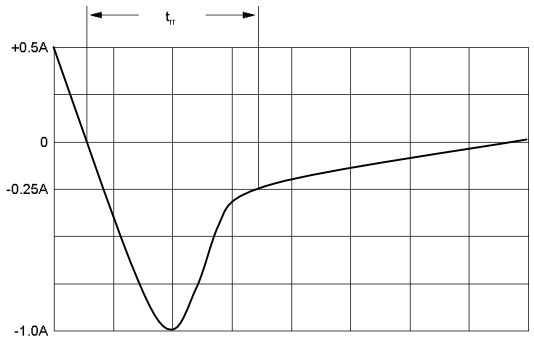


FIG-5 PEAK FORWARD SURGE CURRENT





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

Notice

MOSPEC reserves the rights to make changes of the content herein the document anytime without notification. MOSPEC or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies. Please refer to MOSPEC website for the last document.

MOSPEC disclaims any and all liability arising out of the application or use of any product including damages incidentally and consequentially incurred.

Application shown on the herein document are examples of standard use and operation. Customers are responsible for comprehending suitable use in particular applications. MOSPEC makes no representation or warranty that such application will be suitable for the specified use without further testing or modification.

The information contained herein is presented only as a guide for the applications of our products. No responsibility is assumed by MOSPEC for any infringements of patents or other rights of the third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of MOSPEC or others.

These MOSPEC products are intended for usage in general electronic equipment. Please make sure to consult with MOSPEC before you use these MOSPEC products in equipment which require specialized quality and/or reliability, and in equipment which could have major impact to the welfare of human life (atomic energy control, aeronautics , traffic control, combustion control, safety devices etc.)