MOSPEC

MU37 Thru MU3100

Surface Mount
Ultrafast power rectifiers

Ideally suited for high voltage, high frequency rectification, or as free wheeling and protection diodes in surface mount applications where compact size and weight are critical system.

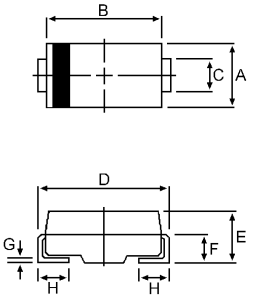
- ∗Low power Loss, High efficiency
- ∗Glass Passivated chips junction
- ∗150℃ operating Junction Temperature
- ∗Low Stored charge Majority Carrier Conduction
- ∗Low Forward Voltage Drop, High Current Capability
- ∗High-switching speed 50 & 75 Nanosecond Recovery Time
- ∗Small Compact Surface Mountable Package with J-Bend
- ∗Plastic Material used Carries Underwriters Laboratory Flammability Classification 94V-O

∗ *In compliance with EU RoHs 2002/95/EC directives*
The marking is indicated by part no. with. "M" ex:MU37M~MU3100M

ULTRAFAST RECTIFIERS

3.0 AMPERES
500-1000 VOLTS

DO-214AA(SMB)



	MILLIMETERS	
	MIN	MAX
A	3.30	3.90
B	4.20	4.60
C	1.80	2.20
D	5.10	5.60
E	1.90	2.50
F		1.30
G		0.22
H	0.95	1.35

CASE---
Transfer molded plastic

POLARITY---
Cathode indicated polarity band

MAXIMUM RATINGS

Characteristic	Symbol	MU37	MU38	MU39	MU3100	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_{R50}	500	600	800	1000	V
RMS Reverse Voltage	$VR_{(RMS)}$	350	420	560	700	V
Average Rectifier Forward Current	I_O	3.0				A
Non-Repetitive Peak Surge Current (Surge applied at rate load conditions halfware, single phase,60Hz)	I_{FSM}	50				A
Operating and Storage Junction Temperature Range	T_J , T_{STG}	-65 to +150				℃

ELECTRICAL CHARACTERISTICS

Characteristic	Symbol	MU37	MU38	MU39	MU3100	Unit
Maximum Instantaneous Forward Voltage (I_F=3.0 Amp, T_C = 25℃)	V_F	1.50		1.75		V
Maximum Instantaneous Reverse Current (Rated DC Voltage, T_C = 25℃) (Rated DC Voltage, T_C = 125℃)	I_R	5.0 70				uA
Reverse Recovery Time (I_F = 0.5 A, I_R =1.0 , I_{rr} =0.25 A)	T_{rr}	50			75	ns
Typical Junction Capacitance (Reverse Voltage of 4 volts & f=1 MHz)	C_P	25			20	pF
Thermal Resistance junction- to- Lead (T_L=25℃)	$R_{\theta jL}$	20				℃/w

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FIG-1 TYPICAL FORWARD CHARACTERISITICS

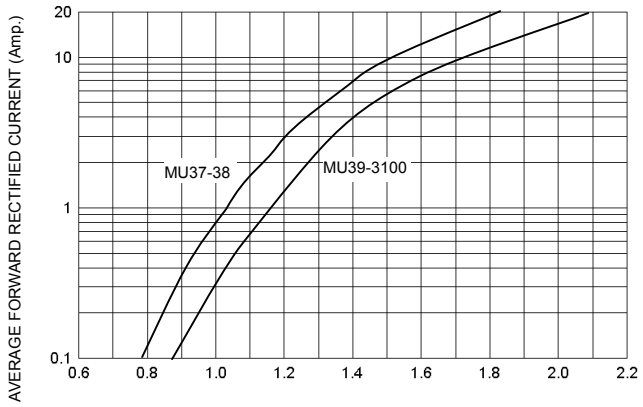


FIG-2 TYPICAL REVERSE CHARACTERISTICS

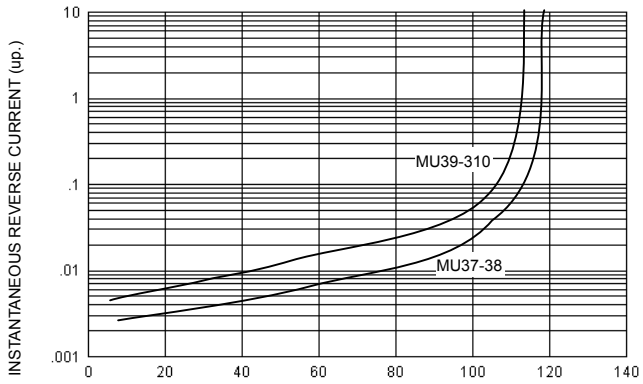


FIG-3 FORWARD CURRENT DERATING CURVE

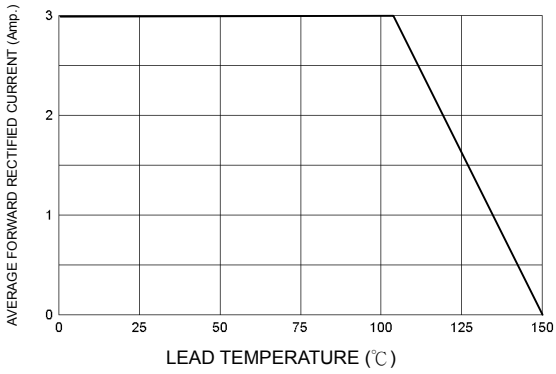


FIG-4 TYPICAL JUNCTION CAPACITANCE

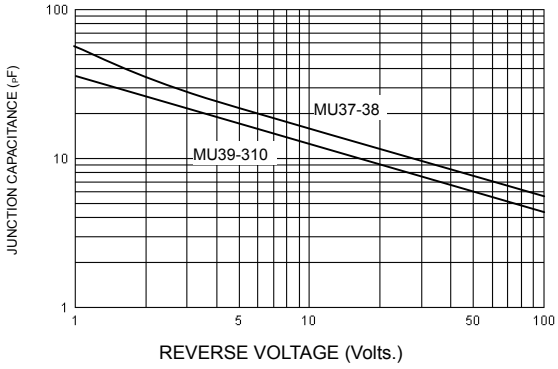
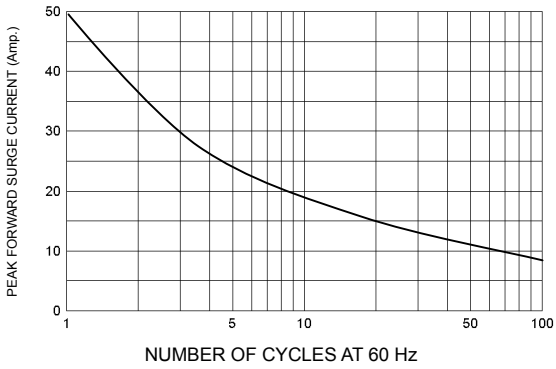
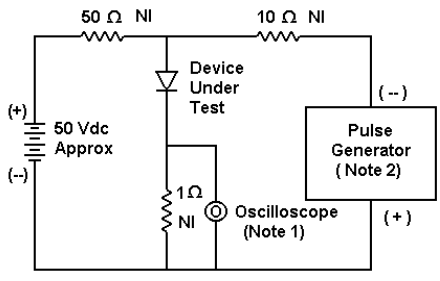
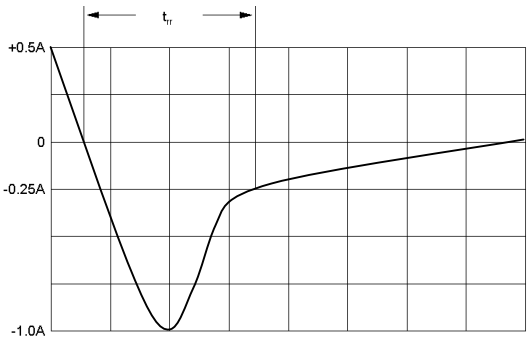


FIG-5 PEAK FORWARD SURGE CURRENT





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 20 ns/cm

FIG-6 Reverse Recovery Time Characteristic and Test Circuit Diagram

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