

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 to the system.

- * Low Power Loss, High efficiency
- * Glass Passivated chips junction
- * 150 °C 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 Lead
- * Plastic Material used Carries Underwriters Laboratory Flammability Classification 94V-O

MAXIMUM RATINGS

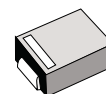
Characteristic	Symbol	MU57	MU58	MU59	MU510	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	500	600	800	1000	V
RMS Reverse Voltage	$V_{R(RMS)}$	350	420	560	700	V
Average Rectifier Forward Current	I_o	5.0				A
Non-Repetitive Peak Surge Current (Surge applied at rate load conditions halfwave, single phase, 60Hz)	I_{FSM}	75				A
Operating and Storage Junction Temperature Range	T_J, T_{stg}	- 65 to + 150				°C

ELECTRICAL CHARACTERISTICS

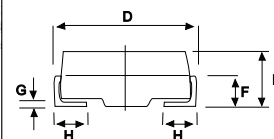
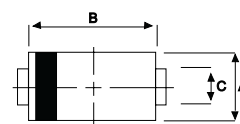
Characteristic	Symbol	MU57	MU58	MU59	MU510	Unit
Maximum Instantaneous Forward Voltage ($I_F=5.0$ Amp, $T_C = 25\text{ }^{\circ}\text{C}$)	V_F	1.50		1.75		V
Maximum Instantaneous Reverse Current (Rated DC Voltage, $T_C = 25\text{ }^{\circ}\text{C}$) (Rated DC Voltage, $T_C = 125\text{ }^{\circ}\text{C}$)	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 volt & f=1 MHz)	C_P	30		25		pF

**ULTRA FAST
RECTIFIERS**

**5.0 AMPERES
500 -- 1000 VOLTS**



DO-214AA(SMB)



DIM	MILLIMETERS	
	MIN	MAX
A	3.30	3.90
B	4.20	4.60
C	1.80	2.20
D	4.90	5.60
E	1.90	2.50
F	---	1.30
G	---	0.22
H	0.85	1.45

CASE---
Transfer molded
plastic

POLARITY---
Cathode indicated
polarity band

MU57 Thru MU510

FIG-1 TYPICAL FORWARD CHARACTERISTICS

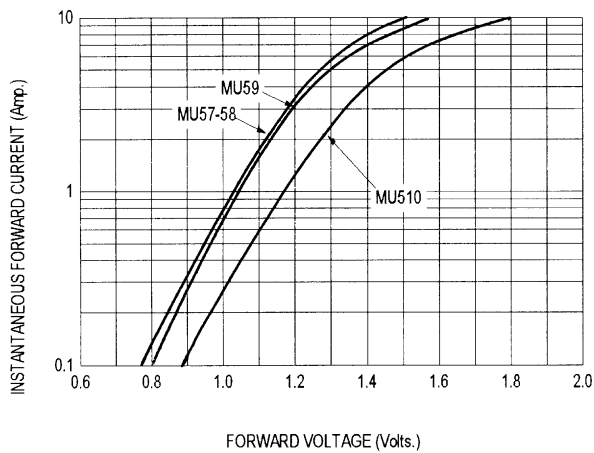


FIG-2 TYPICAL REVERSE CHARACTERISTICS

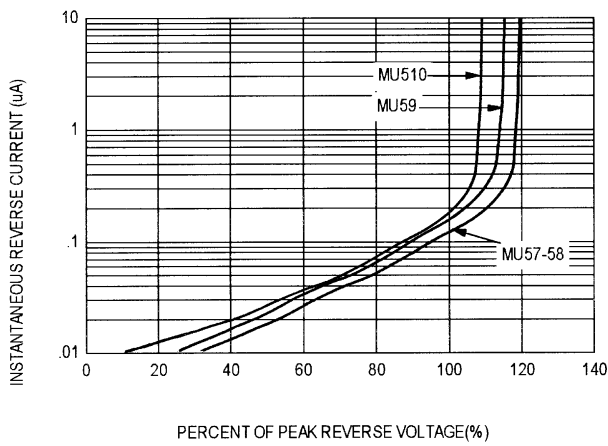


FIG-3 FORWARD CURRENT DERATING CURVE

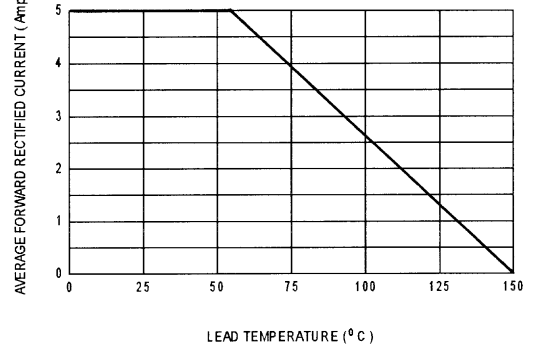


FIG-4 TYPICAL JUNCTION CAPACITANCE

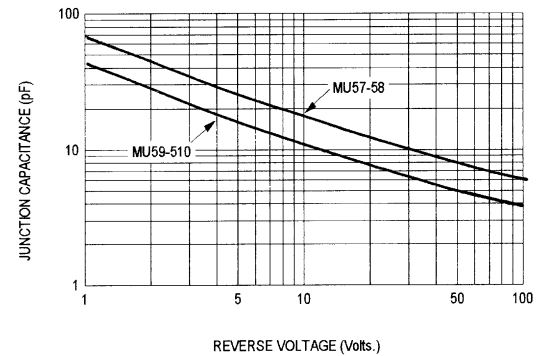
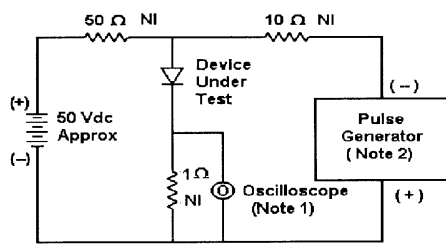
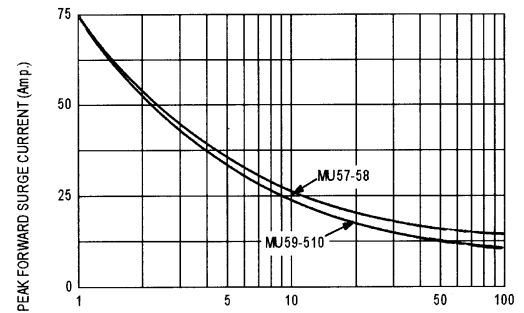
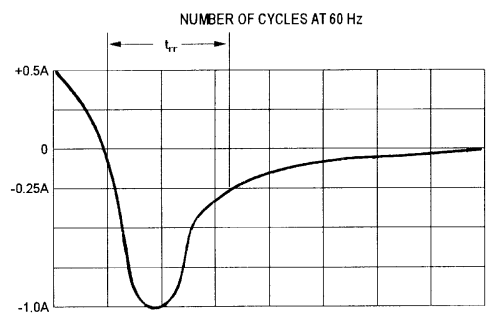


FIG-5 PEAK FORWARD SURGE CURRENT



- 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/div

Fig-6 Reverse Recovery Time Characteristic and Test Circuit Diagram