

**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**

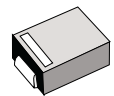
Characteristic	Symbol	MU57	MU58	MU59	MU510	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	500	600	800	1000	V
RMS Reverse Voltage	$V_{R(RMS)}$	350	420	560	700	V
Average Rectifier Forward Current	$I_o$	5.0				A
Non-Repetitive Peak Surge Current ( 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**

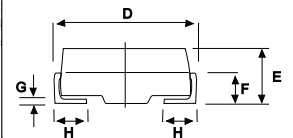
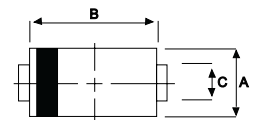
Characteristic	Symbol	MU57	MU58	MU59	MU510	Unit
Maximum Instantaneous Forward Voltage ( $I_F=5.0$ Amp, $T_C = 25$ °C)	$V_F$	1.50		1.75		V
Maximum Instantaneous Reverse Current ( Rated DC Voltage, $T_C = 25$ °C) ( Rated DC Voltage, $T_C = 125$ °C)	$I_R$	5.0 70				uA
Reverse Recovery Time ( $I_F = 0.5$ 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

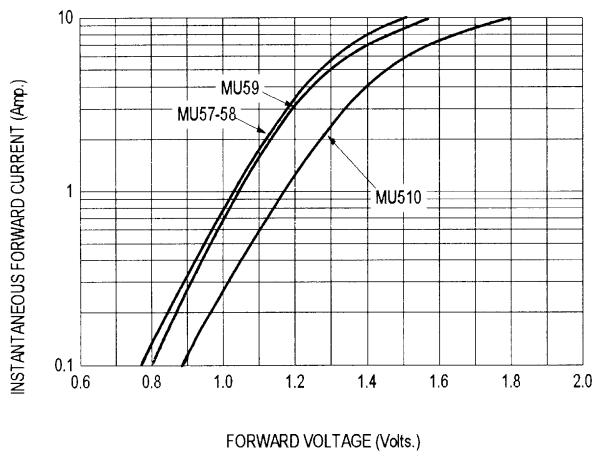


FIG-3 FORWARD CURRENT DERATING CURVE

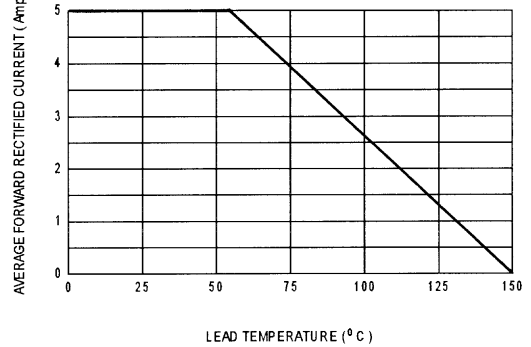


FIG-4 TYPICAL JUNCTION CAPACITANCE

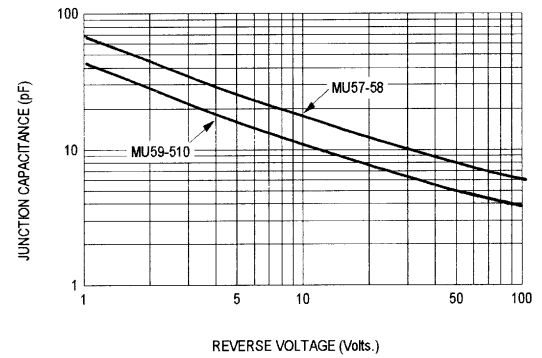


FIG-5 PEAK FORWARD SURGE CURRENT

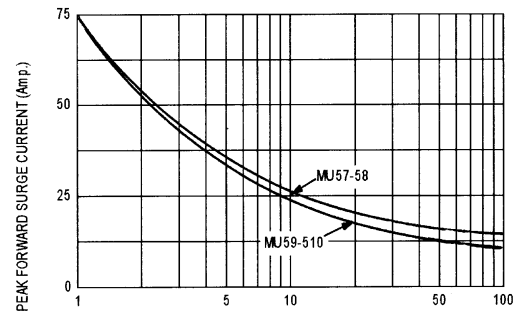
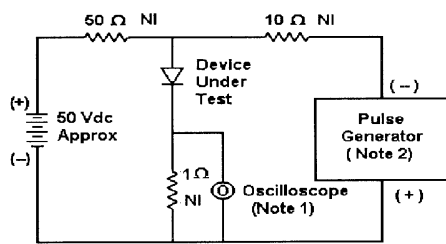
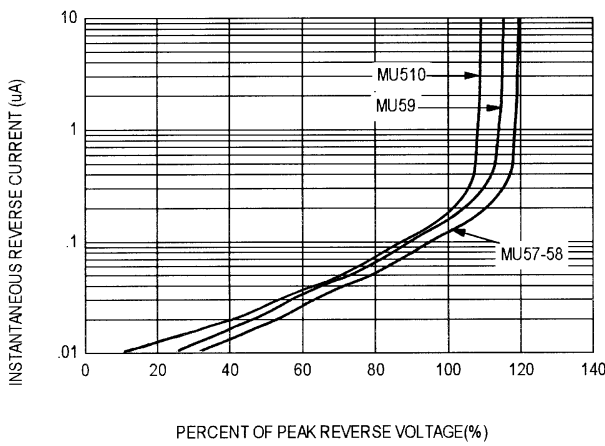
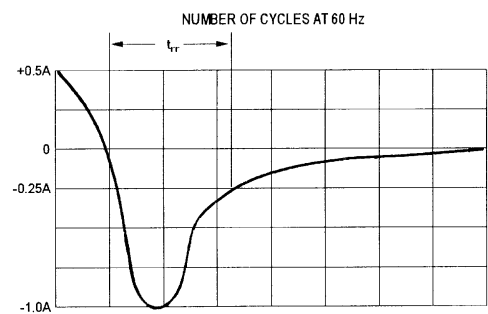


FIG-2 TYPICAL REVERSE CHARACTERISTICS



- Notes:  
 1. Rise Time = 7 ns max. Input Impedance = 1 M  $\Omega$ , 22 pF  
 2. Rise Time = 10 ns max. Input Impedance = 50  $\Omega$



Set time base for 20 ns/div

Fig-6 Reverse Recovery Time Characteristic and Test Circuit Diagram