

### 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 Operating Junction Temperature
- \* Low Stored Charge Majority Carrier Conduction
- \* Low Forward Voltage Drop , High Current Capability
- \* High-Switching Speed 35 & 50 Nanosecond Recovery Time
- \* Small Compact Surface Mountable Package with J-Bend Lead
- \* Plastic Material used Carries Underwriters Laboratory Flammability Classification 94V-O



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

**ULTRAFAST  
RECTIFIERS**

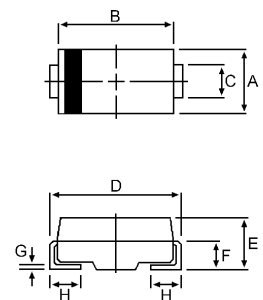
**3.0 AMPERES  
50-400 VOLTS**



**DO-214AA(SMB)**

### MAXIMUM RATINGS

Characteristic	Symbol	MU						Unit
		31	32	33	34	35	36	
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	50	100	150	200	300	400	V
RMS Reverse Voltage	$V_{R(RMS)}$	35	70	105	140	210	280	V
Average Rectifier Forward Current	$I_O$	3.0						A
Non-Repetitive Peak Surge Current (Surge applied at rate load conditions halfwave, single phase, 60Hz)	$I_{FSM}$	75				50		A
Operating and Storage Junction Temperature Range	$T_J, T_{stg}$	-65 to +125						



DIM	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

### ELECTRIAL CHARACTERISTICS

Characteristic	Symbol	MU						Unit
		31	32	33	34	35	36	
Maximum Instantaneous Forward Voltage ( $I_F=3.0$ Amp, $T_C = 25$ )	$V_F$	0.95				1.30		V
Maximum Instantaneous Reverse Current ( Rated DC Voltage, $T_C = 25$ ) ( Rated DC Voltage, $T_C = 125$ )	$I_R$	5.0 70						$\mu$ A
Reverse Recovery Time ( $I_F = 0.5$ A, $I_R = 1.0$ , $I_{rr} = 0.25$ A )	$T_{rr}$	35				50		ns
Typical Junction Capacitance ( Reverse Voltage of 4 volts & $f=1$ MHz )	$C_P$	55				45		$\mu$ F

CASE---  
Transfer molded  
plastic

POLARITY---  
Cathode indicated  
polarity band

# MU31 thru MU36

FIG-1 TYPICAL FORWARD CHARACTERISTICS

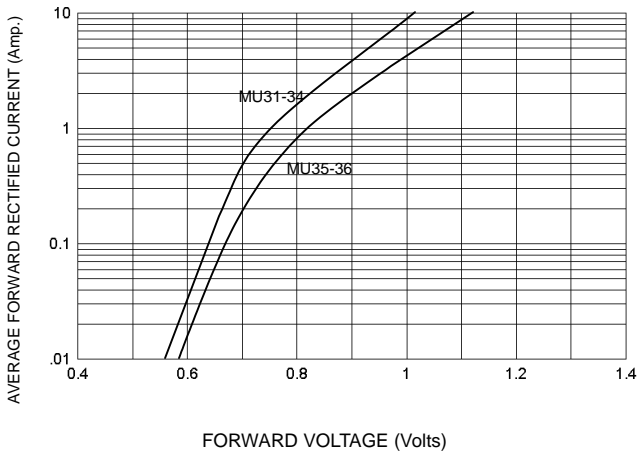


FIG-3 FORWARD CURRENT DERATING CURVE

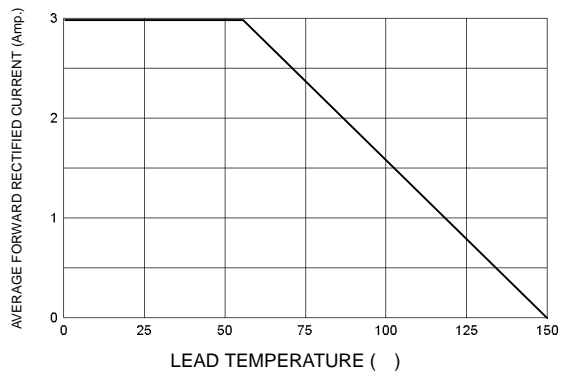


FIG-2 TYPICAL REVERSE CHARACTERISTICS

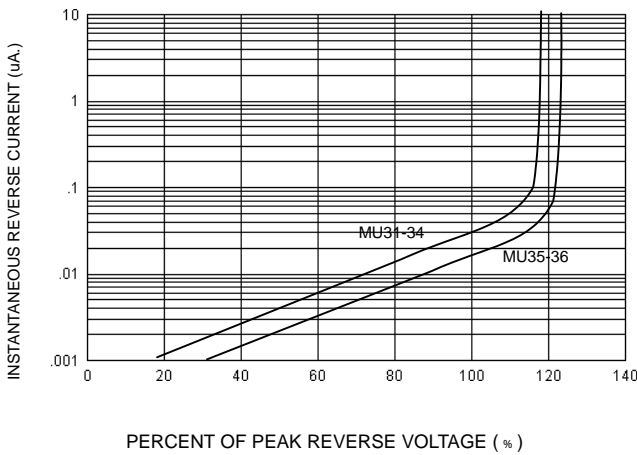


FIG-4 TYPICAL JUNCTION CAPACITANCE

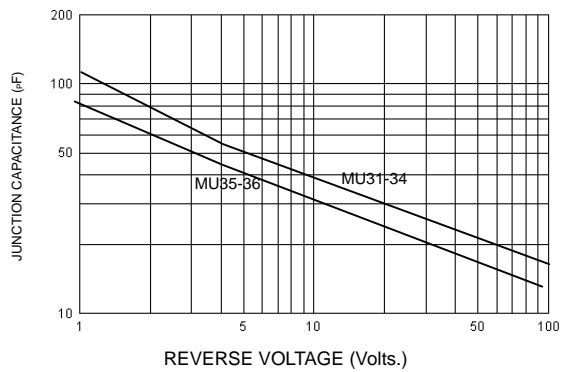
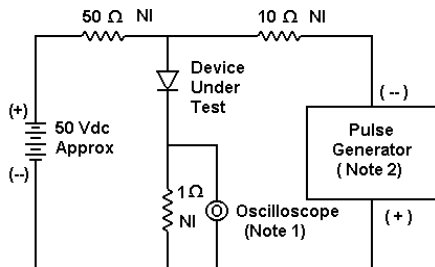
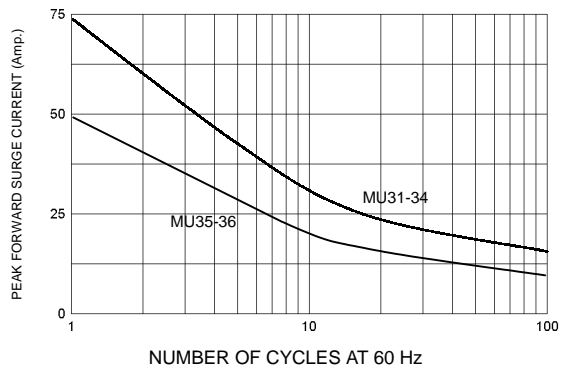
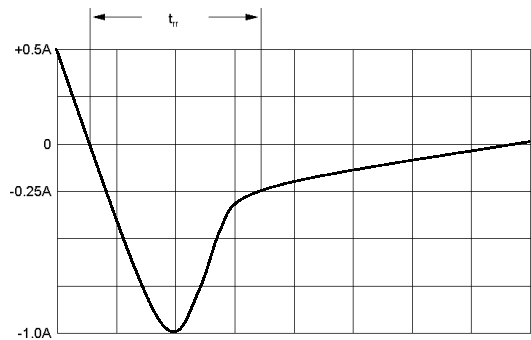


FIG-5 PEAK FORWARD SURGE CURRENT



- 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 10/20 ns/cm

FIG-6 Reverse Recovery Time Characteristic and Test Circuit Diagram