

# US1A - US1M

# SURFACE MOUNT ULTRA FAST RECTIFIERS

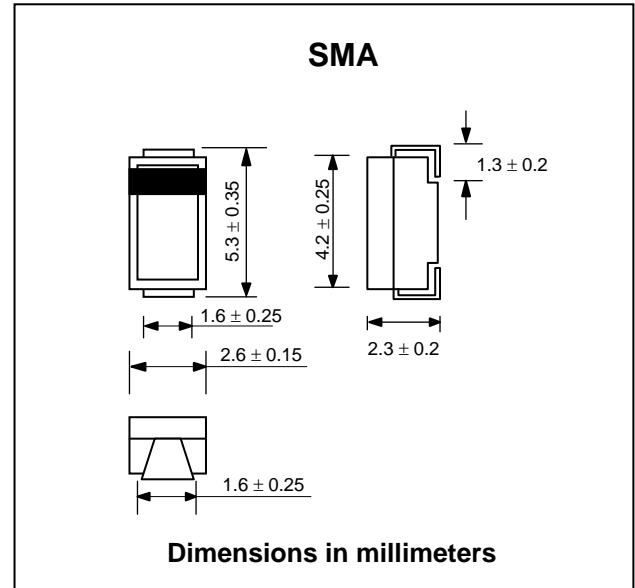
**PRV : 50 ~ 1000 Volts**  
**Io : 1.0 Ampere**

### FEATURES :

- \* High surge current capability
- \* High reliability
- \* Low reverse current
- \* Low forward voltage drop
- \* Fast switching for high efficiency
- \* Pb / RoHS Free

### MECHANICAL DATA :

- \* Case : SMA Molded plastic
- \* Epoxy : UL94V-O rate flame retardant
- \* Polarity : Color band denotes cathode end
- \* Mounting position : Any
- \* Weight : 0.060 gram (Approximately)



Datasheet.Directory

### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating at 25 °C ambient temperature unless otherwise specified. Single phase, half wave, 60 Hz, resistive or inductive load.  
 For capacitive load, derate current by 20%.

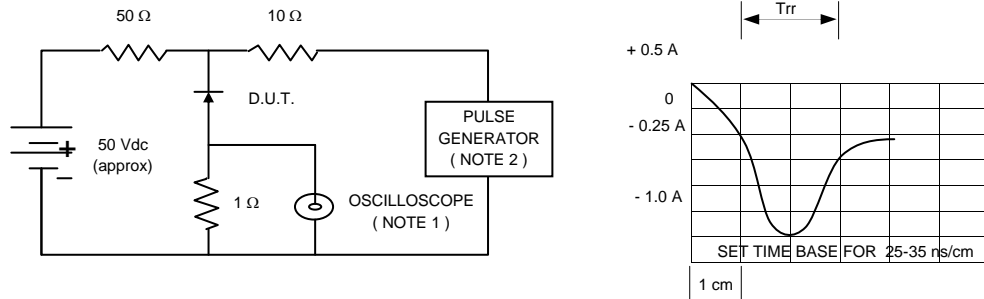
RATING	SYMBOL	US1A	US1B	US1D	US1G	US1J	US1K	US1M	UNIT
Maximum Recurrent Peak Reverse Voltage	$V_{RRM}$	50	100	200	400	600	800	1000	V
Maximum RMS Voltage	$V_{RMS}$	35	70	140	280	420	560	700	V
Maximum Continuous Reverse Voltage	$V_R$	50	100	200	400	600	800	1000	V
Maximum Average Forward Current	$I_{F(AV)}$	1.0							A
Maximum non-repetitive peak forward current 8.3ms Single half sine wave,	$I_{FSM}$	30							A
Maximum Instantaneous Forward Voltage at $I_F = 1.0$ A	$V_F$	1.1				1.7			V
Maximum DC Reverse Current at Rated DC Blocking Voltage	$I_R$	10							$\mu A$
	$I_{R(H)}$	50							$\mu A$
Maximum Reverse Recovery Time <sup>(1)</sup>	$T_{rr}$	50				75			ns
Typical Junction Capacitance <sup>(2)</sup>	$C_J$	15				10			pF
Junction Temperature Range	$T_J$	- 65 to + 175							°C
Storage Temperature Range	$T_{STG}$	- 65 to + 175							°C

#### Notes :

- (1) Reverse Recovery Test Conditions :  $I_F = 0.5$  A,  $I_R = 1.0$  A,  $I_{rr} = 0.25$  A.
- (2) Measured at 1.0 MHz and applied reverse voltage of 4.0 V<sub>DC</sub>

## RATING AND CHARACTERISTIC CURVES ( US1A - US1M )

FIG.1 - REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



NOTES : 1. Rise Time = 7 ns max., Input Impedance = 1 megaohm, 22 pF.  
 2. Rise time = 10 ns max., Source Impedance = 50 ohms.  
 3. All Resistors = Non-inductive Types.

FIG.2 - DERATING CURVE FOR OUTPUT RECTIFIED CURRENT

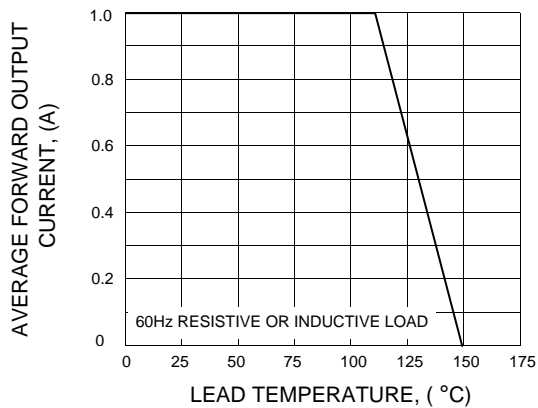


FIG.3 - MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

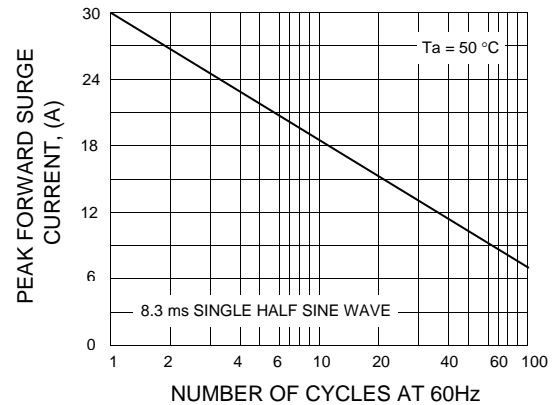


FIG.4 - TYPICAL FORWARD CHARACTERISTICS

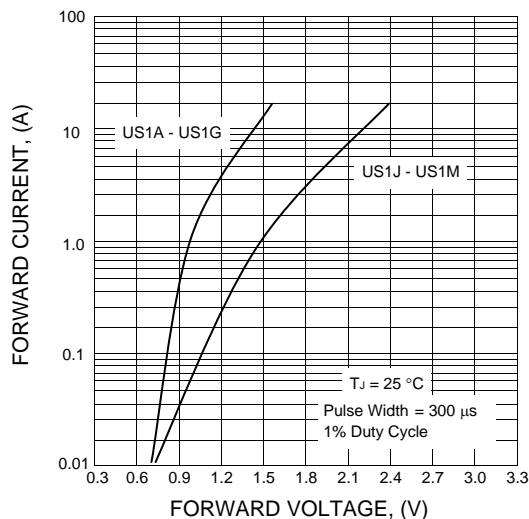


FIG.5 - TYPICAL REVERSE CHARACTERISTICS

