



**DC COMPONENTS CO., LTD.**

RECTIFIER SPECIALISTS

US1A  
THRU  
US1K

**TECHNICAL SPECIFICATIONS OF SURFACE MOUNT ULTRA FAST RECTIFIER**

VOLTAGE RANGE - 50 to 800 Volts

CURRENT - 1.0 Ampere

**FEATURES**

- \* Ideal for surface mounted applications
- \* Low leakage current
- \* Glass passivated junction

**MECHANICAL DATA**

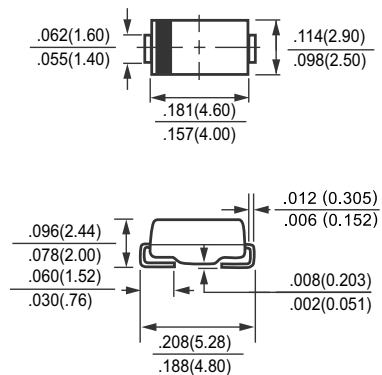
- \* Case: Molded plastic
- \* Epoxy: UL 94V-0 rate flame retardant
- \* Terminals: Solder plated solderable per MIL-STD-750, Method 2026
- \* Polarity: As marked
- \* Mounting position: Any
- \* Weight: 0.064 gram

**MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS**

Ratings 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%.



SMA (DO-214AC)



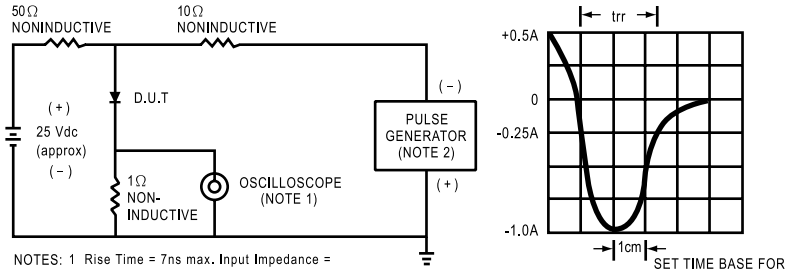
Dimensions in inches and (millimeters)

	SYMBOL	US1A	US1B	US1D	US1G	US1J	US1K	UNITS
Maximum Recurrent Peak Reverse Voltage	V <sub>RRM</sub>	50	100	200	400	600	800	Volts
Maximum RMS Volts	V <sub>RMS</sub>	35	70	140	280	420	560	Volts
Maximum DC Blocking Voltage	V <sub>DC</sub>	50	100	200	400	600	800	Volts
Maximum Average Forward Current at TA = 50°C	I <sub>O</sub>	1.0						Amps
Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC Method)	I <sub>FSM</sub>	30						Amps
Maximum Forward Voltage at 1.0A DC	V <sub>F</sub>	1.0			1.4	1.7		Volts
Maximum DC Reverse Current at Rated DC Blocking Voltage	@TA = 25°C	5.0						uAmps
	@TA = 100°C	100						
Maximum Reverse Recovery Time (Note 1)	t <sub>rr</sub>	50			100			nSec
Typical Junction Capacitance (Note 2)	C <sub>J</sub>	17						pF
Operating and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to + 175						°C

NOTES : 1. Test Conditions: I<sub>F</sub>=0.5A, I<sub>R</sub>=1.0A, I<sub>RR</sub>=0.25A.  
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts.

# RATING AND CHARACTERISTIC CURVES ( US1A THRU US1K )

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



NOTES: 1 Rise Time = 7ns max. Input Impedance = 1 megohm, 22pF.  
2. Rise Time = 10ns max. Source Impedance = 50 ohms.

FIG. 2 - TYPICAL FORWARD CURRENT DERATING CURVE

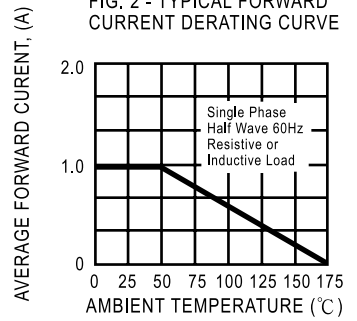


FIG. 3 - TYPICAL REVERSE CHARACTERISTICS

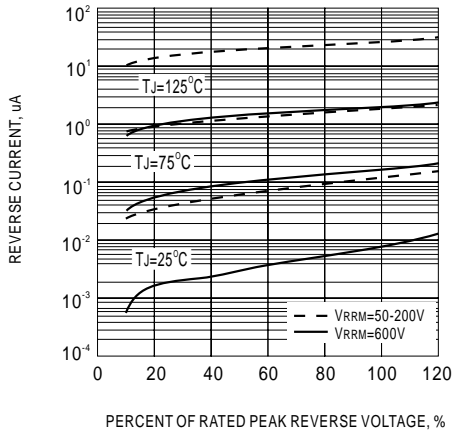


FIG. 4 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

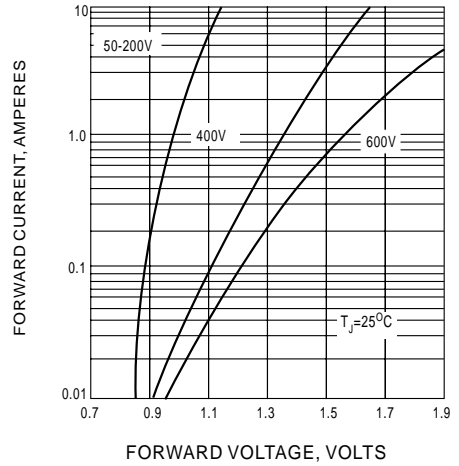


FIG. 5 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

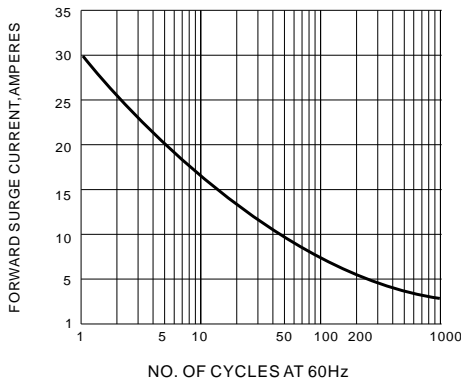
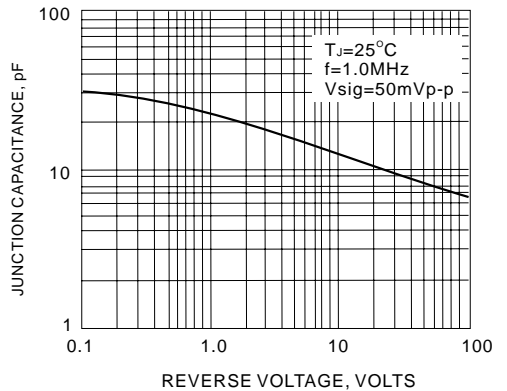


FIG. 6 - TYPICAL JUNCTION CAPACITANCE



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