



US1A THRU US1M

Surface Mount Ultra Fast Recovery Rectifier

Features

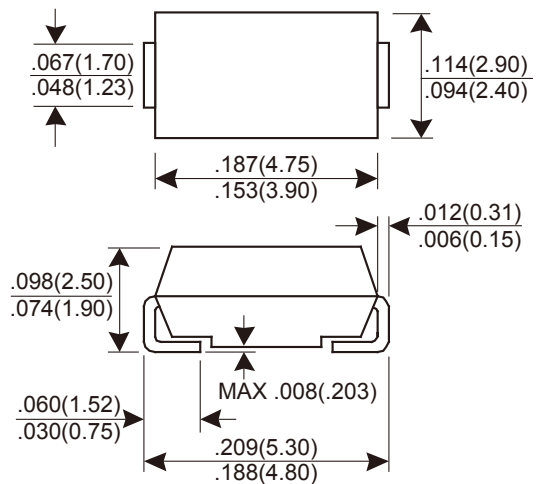
- * Fast switching for high efficiency
- * Low forward voltage drop
- * High current capability
- * Low reverse leakage current
- * High surge current capability

Mechanical Data

- * Case: Molded plastic, SMA/DO-214AC
- * Epoxy: UL 94V-0 rate flame retardant
- * Terminals: Solderable per MIL-STD-750, method 2026
- * Polarity: Color band denotes cathode end
- * Mounting position: Any

Voltage Range 50 to 1000 V
Current 1.0 Ampere

SMA/DO-214AC



Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 60Hz, resistive or inductive load.

For capacitive load, derate current by 20%.

PARAMETER	SYMBOL	US1A	US1B	US1D	US1G	US1J	US1K	US1M	UNIT
Maximum repetitive 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 DC blocking voltage	V_{DC}	50	100	200	400	600	800	1000	V
Maximum average forward rectified current @ $T_L=110^\circ\text{C}$	$I_{F(AV)}$	1.0							A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	30							A
Maximum instantaneous forward voltage @ $I_F=1.0\text{A}$	V_F	1.0		1.3		1.7		V	
Maximum DC reverse current at rated DC blocking voltage @ $T_A=25^\circ\text{C}$ @ $T_A=100^\circ\text{C}$	I_R	1 100							μA
Maximum reverse recovery time (Note 1)	t_{rr}	50				75			ns
Typical junction capacitance (Note 2)	C_J	15				10			pF
Typical thermal resistance from junction to ambient (Note 3)	$R_{\theta JA}$	75							$^\circ\text{C/W}$
Typical thermal resistance from junction to lead (Note 3)	$R_{\theta JL}$	27							$^\circ\text{C/W}$
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150							$^\circ\text{C}$

Notes : (1) Reverse recovery test conditions $I_F = 0.5\text{A}$, $I_R = 1.0\text{A}$, $I_{rr} = 0.25\text{A}$.
 (2) Measured at 1.0 MHz and applied reverse voltage of 4.0 Volts DC.
 (3) Mounted on PCB with 0.2" x 0.2" (5.0 mm x 5.0 mm) copper pad areas.

RATINGS AND CHARACTERISTICS CURVES US1A THRU US1M

Fig.1 - Forward Current Derating Curve

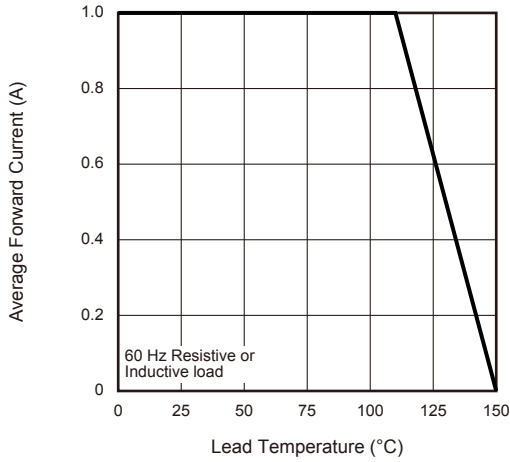


Fig.2 - Maximum Non-Repetitive Peak Forward Surge Current

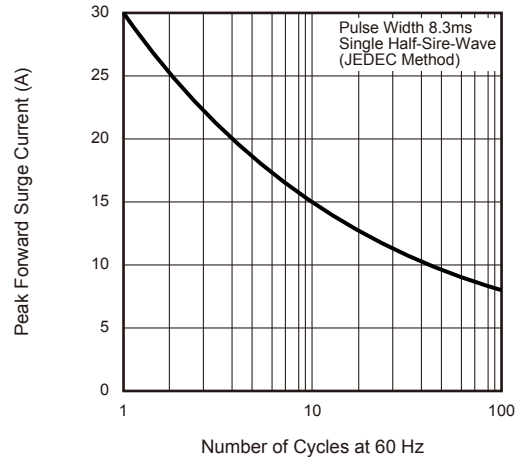


Fig.3 - Typical Instantaneous Forward Characteristics

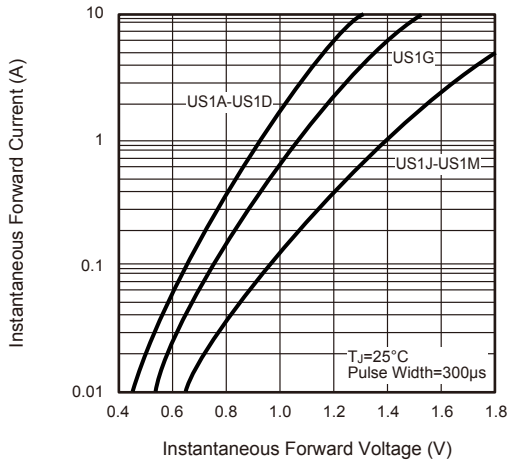


Fig.4 - Typical Reverse Leakage Characteristics

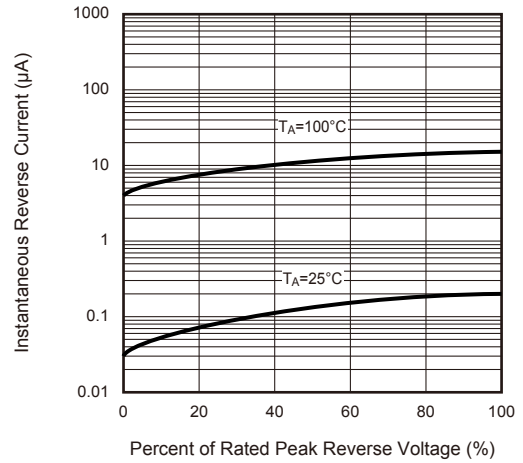


Fig.5 - Typical junction capacitance

