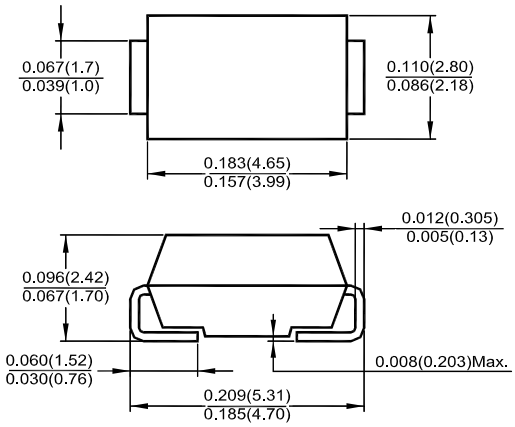
US1A THRU US1M

SURFACE MOUNT ULTRAFAST RECOVERY RECTIFIER

Reverse Voltage – 50 to 1000 V
Forward Current – 1 A

SMA (DO-214AC)



Dimensions in inches and (millimeters)

Features

- For surface mount applications
- Low profile package
- Built-in strain relief
- Easy pick and place
- Ultrafast recovery times for high efficiency
- Plastic package has Underwriters Laboratories Flammability Classification 94V-0

Mechanical Data

- **Case:** SMA (DO-214AC) molded plastic
- **Terminals:** Solder plated, solderable per MIL-STD-750, method 2026 guaranteed
- **Polarity:** Color band denotes cathode end

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%.

Parameter	Symbols	US1A	US1B	US1D	US1G	US1J	US1K	US1M	Units
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 at T_L = 100 °C	$I_{F(AV)}$	1							A
Peak Forward Surge Current 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC Method)	I_{FSM}	30							A
Maximum Forward Voltage at 1 A	V_F	1			1.4	1.7			V
Maximum DC Reverse Current T_A = 25 °C at Rated DC Blocking Voltage T_A = 100 °C	I_R	5 100							μA
Typical Junction Capacitance at 4 V, 1 MHz	C_J	17							pF
Maximum Reverse Recovery Time at I_F = 0.5 A, I_R = 1 A, I_{rr} = 0.25 A	t_{rr}	50				75			ns
Typical Thermal Resistance [1]	$R_{\theta JA}$	50							°C/W
Operating and Storage Temperature Range	T_J ,T_S	- 55 to + 150							°C

[1] Mounted on P.C.B. with 0.2 X 0.2" (5 X 5 mm) copper pad areas.

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FIG. 1- FORWARD CURRENT DERATING CURVE

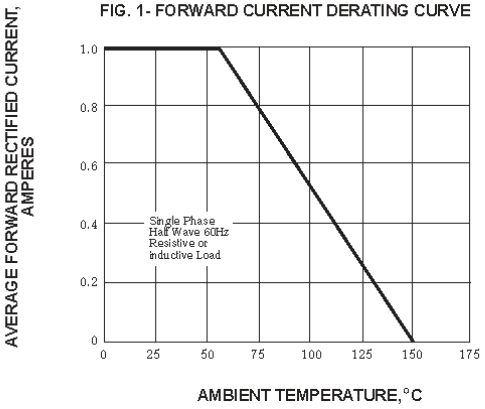

FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

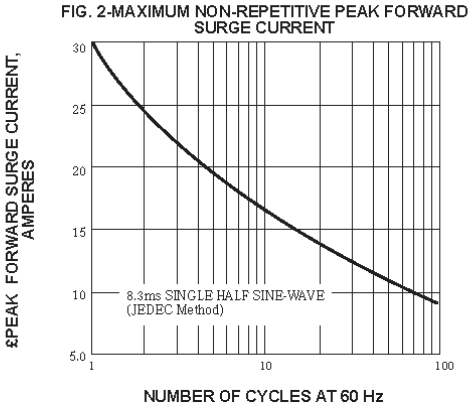

FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

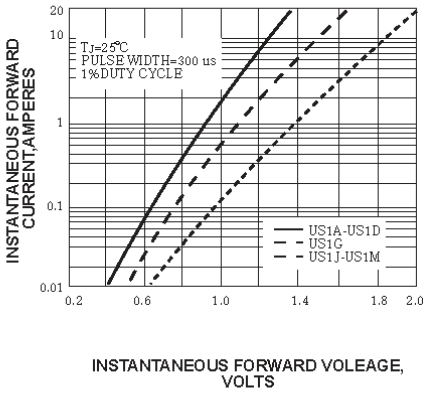

FIG. 4-TYPICAL REVERSE CHARACTERISTICS

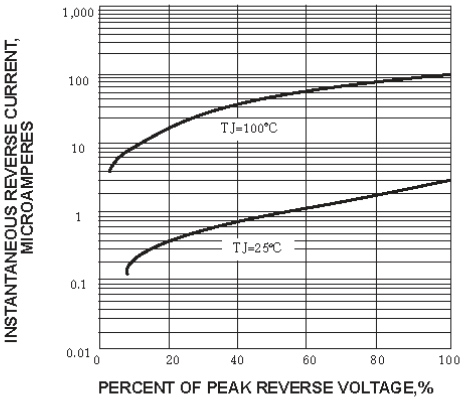

FIG. 5-TYPICAL JUNCTION CAPACITANCE

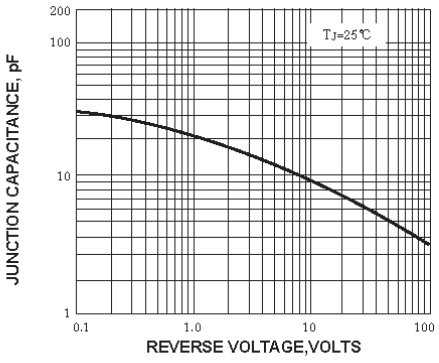

FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE