



US1A THRU US1M

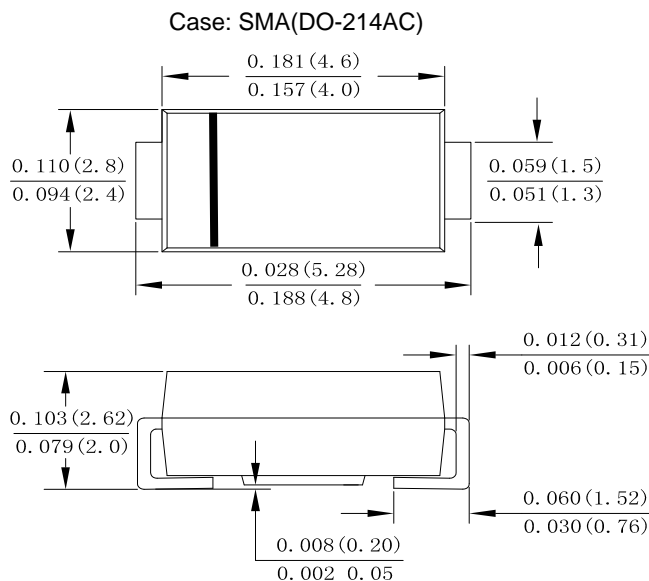
1.0AMP Ultra Fast Recovery Silicon Rectifier

Features

- Low Power Loss, High Efficiency
- Ideally Suited for Automatic Assembly
- Guard Ring Die Construction
- Plastic Case Material has UL Flammability Classification Rating 94V-0

Mechanical Data

- Case: Molded plastic SMA
- Terminals: Plated leads solderable per MIL-STD-750, Method 2026 guaranteed
- Polarity: Color band denotes cathode end
- Mounting Position: Any
- Marking: Type Number



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%

Type Number	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 DC Blocking Voltage	V_{DC}	50	100	200	400	600	800	1000	V
Average Rectified Output Current @ $T_L = 100^\circ C$	$I_{F(AV)}$	1.0							A
Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave @ $T_j = 125^\circ C$ Superimposed On Rated Load (JEDEC Method)	I_{FSM}	30 24							A
Non-Repetitive Peak Forward Surge Current 1.0ms Single half sine-wave @ $T_j = 125^\circ C$ Superimposed On Rated Load (JEDEC Method)	I_{FSM}	60 48							A
10000 times of the wave surge current (time width 1ms, time interval 3s)	I_{FSM}	22.5							A
Rating for fusing ($t < 8.3ms$)	$I^2 t$	3.74							$A^2 s$
Forward Voltage @ $I_F = 1.0A$	V_{FM}	1.0		1.3		1.7			V
Peak Reverse Current @ $T_A = 25^\circ C$	I_R	5.0							uA
At Rated DC Blocking Voltage @ $T_A = 125^\circ C$		200							
Maximum Reverse Recovery Time (Note 1)	T_{rr}	50				75			ns
Typical Junction Capacitance (Note 2)	C_J	8							pF
Typical Thermal Resistance (Note 3)	$R_{\theta JL}$	27							$^\circ C/W$
	$R_{\theta JA}$	70							
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to +150							$^\circ C$

- Note: 1. Reverse Recovery Test Conditions: $I_F = 0.5A, I_R = 1.0A, I_{RR} = 0.25A$.
 2. Measured at 1.0 MHz and Applied reverse Voltage of 4.0V D.C
 3. Device mounted on FR-4 substrate, 1" x 1", 2oz, single-sided, PC boards with 0.1" x 0.15" copper pad.



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FIG.1 MAXIMUM AVERAGE FORWARD CURRENT DERATING

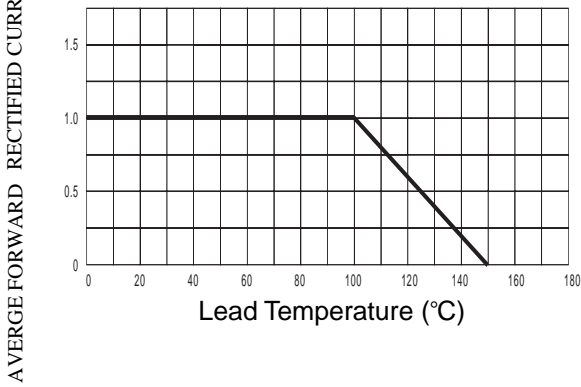


FIG.2 TYPICAL FORWARD CHARACTERISTICS

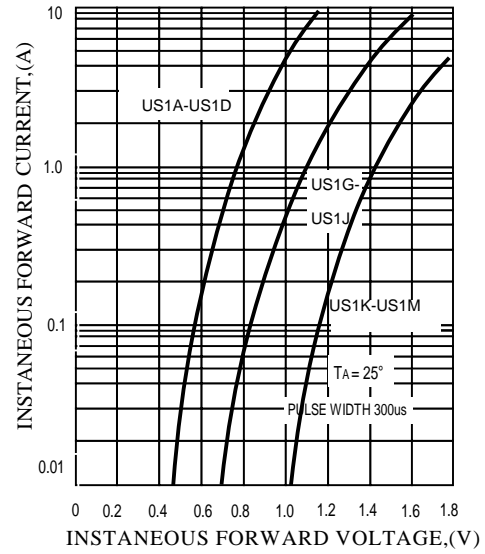


FIG.3 MAXIMUM NON-REPEITIVE SURGE CURRENT

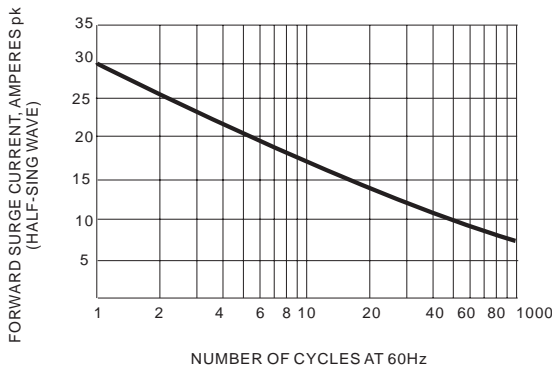


FIG.4 TYPICAL JUNCTION CAPACITANCE

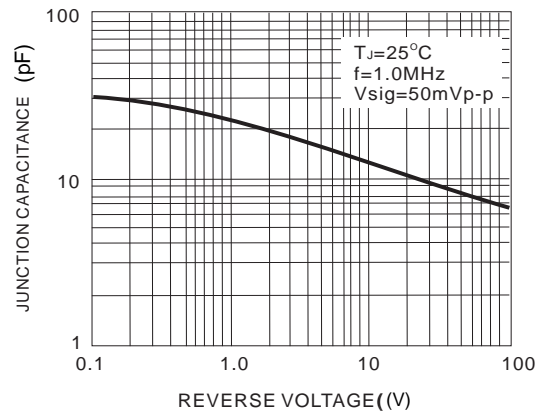
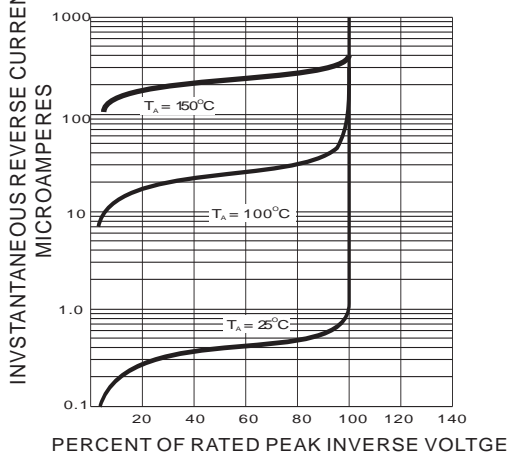
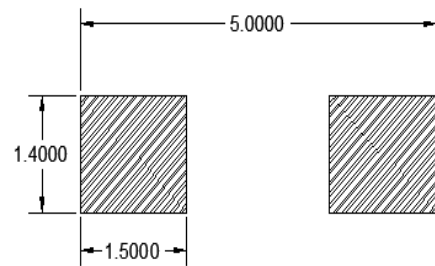


FIG.5 TYPICAL REVERSE CHARACTERISTICS



SMA PAD LAYOUT





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