

FR1A THRU FR1M

SURFACE MOUNT FAST RECOVERY RECTIFIER

Reverse Voltage - 50 to 1000 V

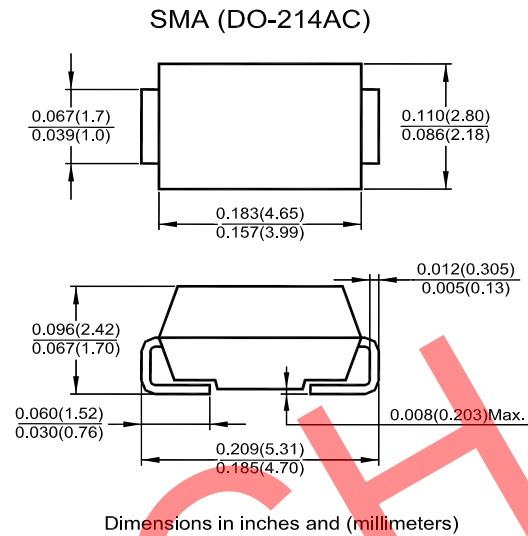
Forward Current - 1 A

Features

- For surface mounted applications
- Low profile package
- Built-in strain relief
- Easy pick and place
- Fast Recovery times for high efficiency
- Plastic package has UL Flammability Classification 94V-0

Mechanical Data

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



Maximum Ratings and Electrical Characteristics

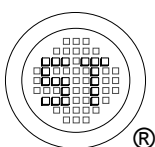
Ratings at 25 °C ambient temperature unless otherwise specified. Single phase, half wave, 60 Hz, resistive or inductive load. For capacitive load, derate current by 20%.

Parameter	Symbols	FR1A	FR1B	FR1D	FR1G	FR1J	FR1K	FR1M	Units
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
Maximum Average Forward Current $T_L = 90\text{ }^\circ\text{C}$	$I_{F(AV)}$	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 $I_F = 1\text{ A}$	V_F	1.3							V
Maximum Reverse Current at $T_a = 25\text{ }^\circ\text{C}$ Rated DC Blocking Voltage $T_a = 125\text{ }^\circ\text{C}$	I_R	5 150							μA
Maximum Reverse Recovery Time ¹⁾	t_{rr}	150			250		500		ns
Typical Junction Capacitance ²⁾	C_J	12							pF
Typical Thermal Resistance ³⁾	$R_{\theta JL}$	32							$^\circ\text{C/W}$
Operating and Storage Temperature Range	T_J, T_{Stg}	- 55 to + 150							$^\circ\text{C}$

¹⁾ Reverse recovery test conditions: $I_F = 0.5\text{ A}$, $I_R = 1\text{ A}$, $I_{rr} = 0.25\text{ A}$

²⁾ Measured at 1 MHz and applied reverse voltage of 4 V

³⁾ Thermal resistance from junction to lead mounted on P.C.B. with 0.3 X 0.3" (8 X 8 mm) copper pad areas



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RATING AND CHARACTERISTIC CURVES

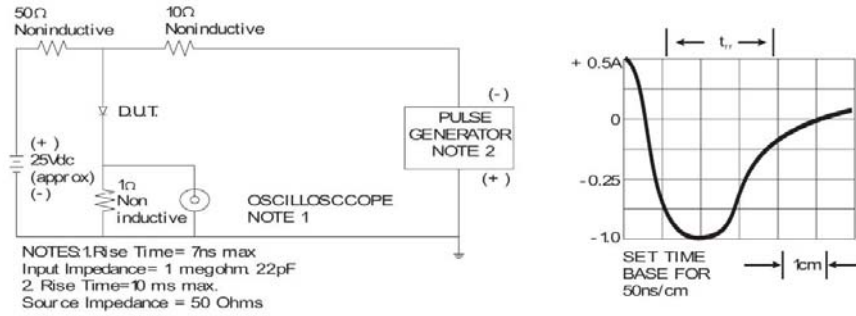


Fig. 1-REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM

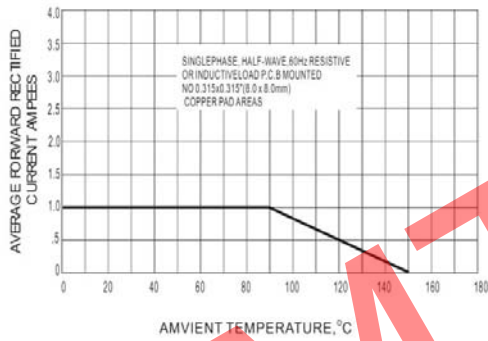


Fig. 2-MAXIMUM AVERAGE FORWARD CURRENT RATING

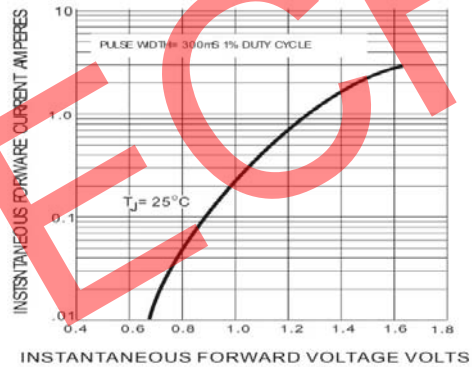


Fig. 3- TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

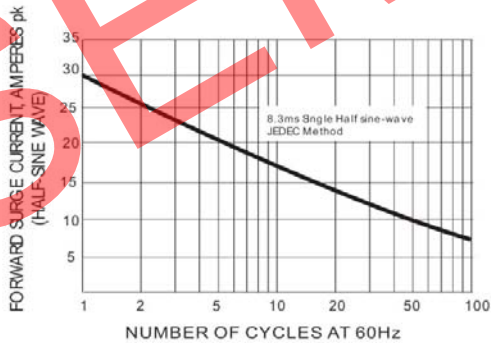


Fig. 4-MAXIMUM NON-REPEITIVE SURGE CURRENT

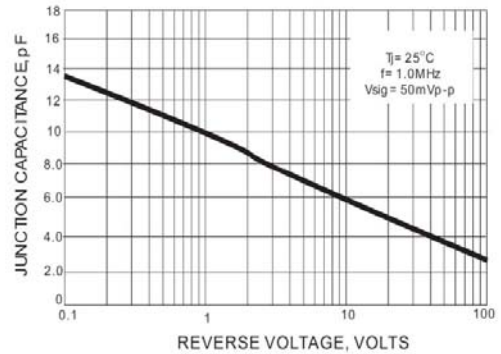
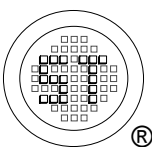


Fig. 5- TYPICAL JUNCTION CAPACITANCE



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