

SF101 THRU SF107

SUPER FAST RECOVERY SILICON DIODES

Reverse Voltage - 50 to 1000 V

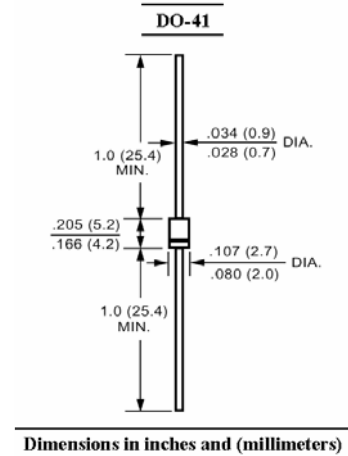
Forward Current - 1 A

Features

- Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- Fast switching for high efficiency
- High forward surge current capability

Mechanical Data

- **Case:** DO-41 plastic moulded
- **Terminals:** Axial leads, solderable per MIL-STD-202, method 208
- **Polarity:** Colored band denotes cathode
- **Mounting position:** Any



Maximum Ratings and Electrical Characteristics

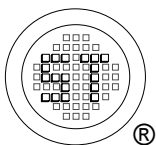
Ratings at 25 °C ambient temperature unless otherwise specified. Single phase, half-wave, 60 Hz, resistive or inductive load, for capacitive load, derate current by 20%.

Parameter	Symbols	SF101	SF102	SF103	SF104	SF105	SF106	SF107	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 Rectified Current 9.5 mm Lead Length at $T_A = 55^\circ\text{C}$	$I_{F(AV)}$	1							A
Peak Forward Surge Current 8.3 ms Single Half Sine Wave Superimposed on Rated Load (at $T_j = 125^\circ\text{C}$)	I_{FSM}	30							A
Maximum Forward Voltage at 1 A	V_F	1			1.25	1.4	2.2		V
Maximum DC Reverse Current at $T_a = 25^\circ\text{C}$ at Rated DC Blocking Voltage at $T_a = 100^\circ\text{C}$	I_R	5 400							μA
Maximum Reverse Recovery Time ¹⁾	t_{rr}	35							ns
Typical Junction Capacitance ²⁾	C_j	50							pF
Typical Thermal Resistance ³⁾	$R_{\theta JA}$	50							$^\circ\text{C/W}$
Operating Junction Temperature	T_j	- 55 to + 150							$^\circ\text{C}$
Storage Temperature Range	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 1.0MHz and applied reverse voltage of 4 V

³⁾ Thermal resistance from junction ambient and from junction to lead at 9.5 mm lead length, P.C.B mounted.

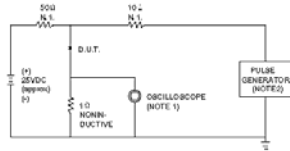


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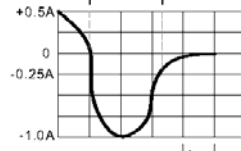
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FIG.1 – TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



NOTES: 1. RISE TIME = 7ns MAX INPUT IMPEDANCE = 1MΩ, 22pF.
 2. RISE TIME = 10ns MAX SOURCE IMPEDANCE = 50Ω.



SET TIME BASE FOR 10/20 ns/cm

FIG.2 – TYPICAL FORWARD CHARACTERISTIC

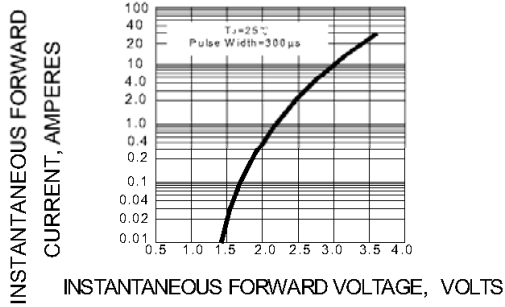


FIG.3 – FORWARD DERATING CURVE

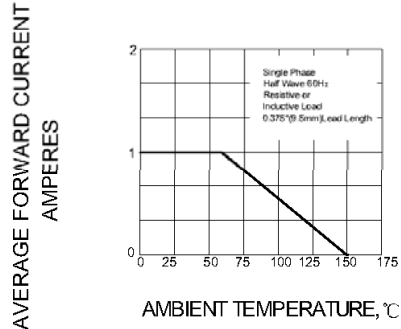


FIG.4 – TYPICAL JUNCTION CAPACITANCE

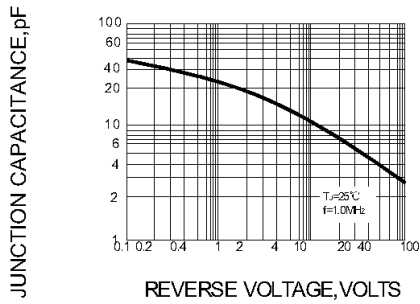


FIG.5 – PEAK FORWARD SURGE CURRENT

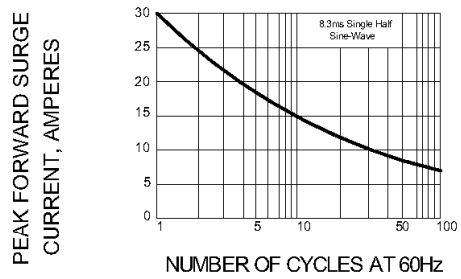
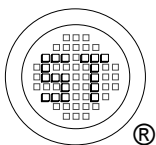
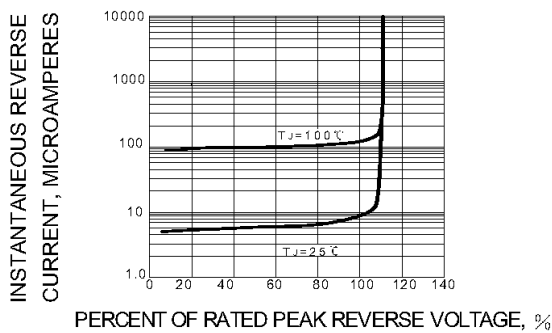


FIG.6 – TYPICAL REVERSE CHARACTERISTIC



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