

SF31 THRU SF38

Super Fast Rectifiers

Reverse Voltage - 50 to 600 V

Forward Current – 3 A

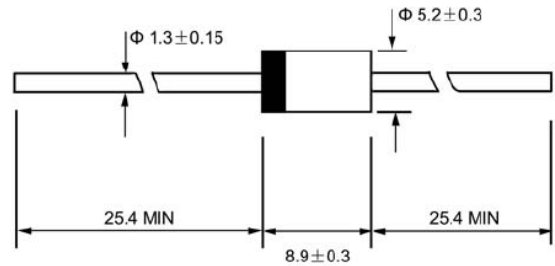
Features

- Low leakage
- Low forward voltage
- High current capability
- Easily cleaned with alcohol, Isopropanol and similar solvents
- The plastic material carries U/L recognition 94V-0

Mechanical Data

- **Case:** JEDEC DO-201AD molded plastic body
- **Terminals:** Axial lead, solderable per MIL-STD-202, Method 208
- **Polarity:** Color band denotes cathode end
- **Mounting Position:** Any

DO-201AD



Dimensions in mm

Absolute Maximum Ratings and Characteristics

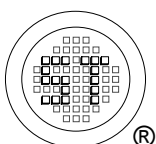
Rating at 25 °C ambient temperature unless otherwise specified. Single-phase, half wave, 60 Hz, resistive or inductive load. For capacitive load, derate current by 20%.

Parameter	Symbols	SF31	SF32	SF33	SF34	SF35	SF36	SF37	SF38	Units
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	50	100	150	200	300	400	500	600	V
Maximum RMS Voltage	V_{RMS}	35	70	105	140	210	280	350	420	V
Maximum DC Blocking Voltage	V_{DC}	50	100	150	200	300	400	500	600	V
Maximum Average Forward Rectified Current 9.5 mm Lead Length at $T_A = 75\text{ }^\circ\text{C}$	$I_{F(AV)}$	3								A
Peak Forward Surge Current 8.3 ms Single Half Sine-Wave Superimposed on Rated Load (JEDEC Method) at $T_j = 125\text{ }^\circ\text{C}$	I_{FSM}	125								A
Maximum Instantaneous Forward Voltage at 3 A	V_F	0.95			1.25		1.7			V
Maximum Reverse Current $T_A = 25\text{ }^\circ\text{C}$ at Rated DC Blocking Voltage $T_A = 100\text{ }^\circ\text{C}$	I_R	5								μA
Maximum Reverse Recovery Time ¹⁾	t_{rr}	35								ns
Typical Junction Capacitance ²⁾	C_J	100			50					pF
Typical Thermal Resistance ³⁾	$R_{\theta JA}$	20								$^\circ\text{C/W}$
Operating Junction Temperature Range	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 MHz and applied reverse voltage of 4 V.

³⁾ Thermal resistance from junction to ambient at 0.375" (9.5 mm) lead length, P. C. B. Mounted.



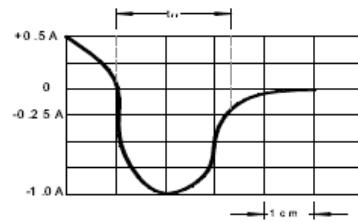
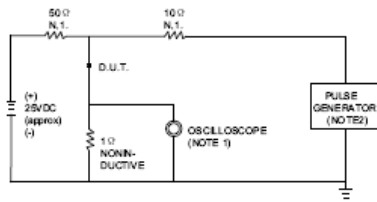
SEMTECH ELECTRONICS LTD.

(Subsidiary of Sino-Tech International Holdings Limited, a company listed on the Hong Kong Stock Exchange, Stock Code: 724)



SF31 THRU SF38

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



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

SET TIME BASE FOR 10 ns/cm

FIG.2 -- TYPICAL FORWARD CHARACTERISTIC

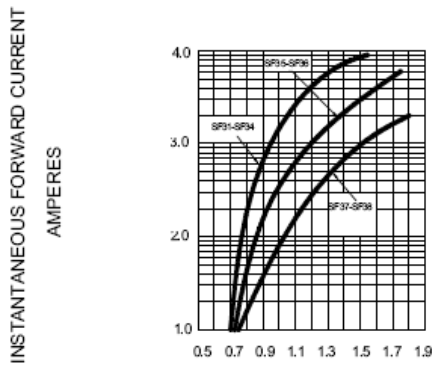


FIG.3 -- FORWARD DERATING CURVE

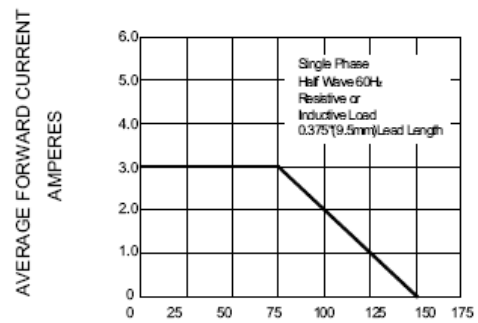
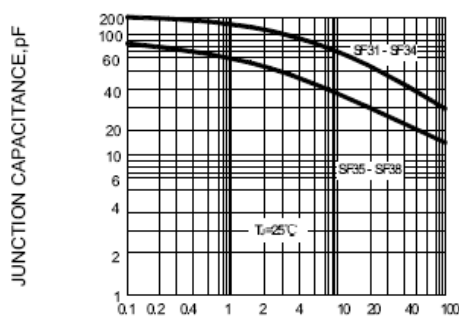
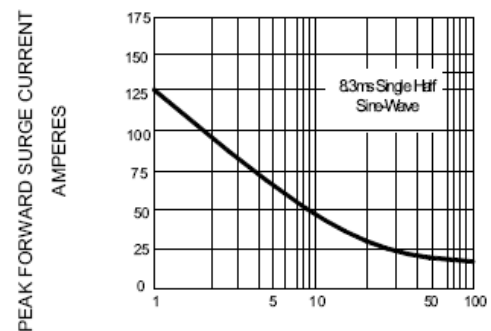


FIG.4 -- TYPICAL JUNCTION CAPACITANCE

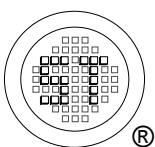


REVERSE VOLTAGE, VOLTS

FIG.5 -- PEAK FORWARD SURGE CURRENT



NUMBER OF CYCLES AT 60Hz



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