

Super Fast Recovery Rectifier

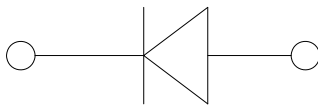


Features

- Ultrafast reverse recovery time
- Low leakage current
- Low switching losses, high efficiency
- High forward surge capability
- Solder dip 275 °C max. 7 s, per JESD 22-B106

Typical Applications

For use in high frequency rectification and freewheeling application in switching mode converters and inverters for consumer, computer and telecommunication.



Mechanical Data

- **Package:** DO-204AL(DO-41)
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Polarity:** Color band denotes the cathode end

■Maximum Ratings (T_a=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	SF11	SF12	SF13	SF14	SF15	SF16	SF17	SF18
Device marking code			SF11	SF12	SF13	SF14	SF15	SF16	SF17	SF18
Repetitive Peak Reverse Voltage	V _{RRM}	V	50	100	150	200	300	400	500	600
Average Forward Current @60Hz sine wave, Resistance load, T _a =50°C	I _{F(AV)}	A	1.0							
Surge(Non-repetitive)Forward Current @ 60Hz Half-sine wave, 1 cycle, T _a =25°C	I _{FSM}	A	30							
Storage Temperature	T _{stg}	°C	-55 ~+150							
Junction Temperature	T _j	°C	-55~+125							

■Electrical Characteristics (T_a=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	TEST CONDITIONS	SF11	SF12	SF13	SF14	SF15	SF16	SF17	SF18
Maximum instantaneous forward voltage drop per diode	V _F	V	I _{FM} =1.0A	0.95				1.3		1.7	
Maximum DC reverse current at rated DC blocking voltage per diode	I _R	μA	T _a =25°C	5							
			T _a =100°C	150							
Reverse Recovery time	t _r	ns	I _F =0.5A I _R =1A I _{RR} =0.25A	35							
Typical junction capacitance	C _j	pF	Measured at 1MHZ and Applied Reverse Voltage of 4.0 V D.C.	40				25			



SF11 THRU SF18

■ Thermal Characteristics ($T_a=25^{\circ}\text{C}$ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	SF11	SF12	SF13	SF14	SF15	SF16	SF17	SF18
Thermal Resistance	R θ J-A	$^{\circ}\text{C}/\text{W}$	50							

■ Ordering Information (Example)

PREFERRED P/N	PACKAGE CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
SF11~SF18	D1	Approximate 0.27	5000	5000	50000	Tape
SF11~SF18	C1	Approximate 0.27	1000	1000	50000	Bulk

■ Characteristics(Typical)

FIG.1: Io-Ta Curve

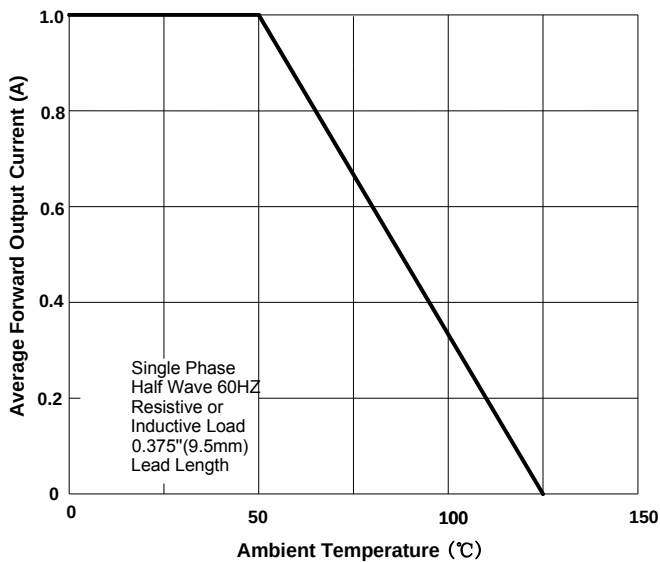


FIG.2: Surge Forward Current Capability

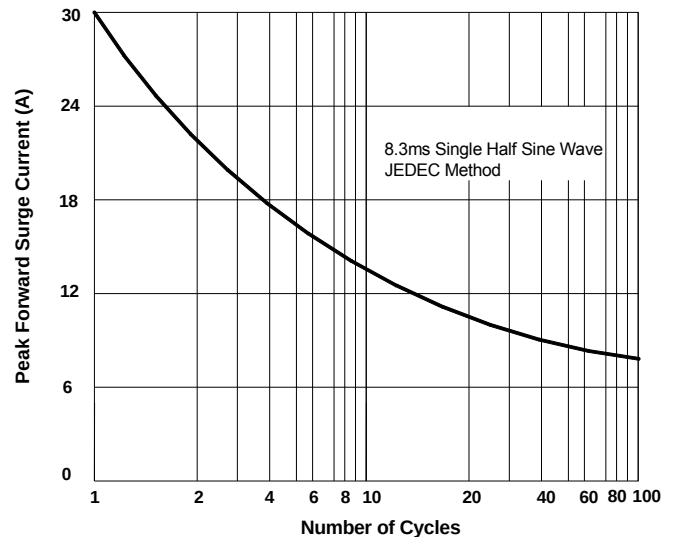


FIG.3: Forward Voltage

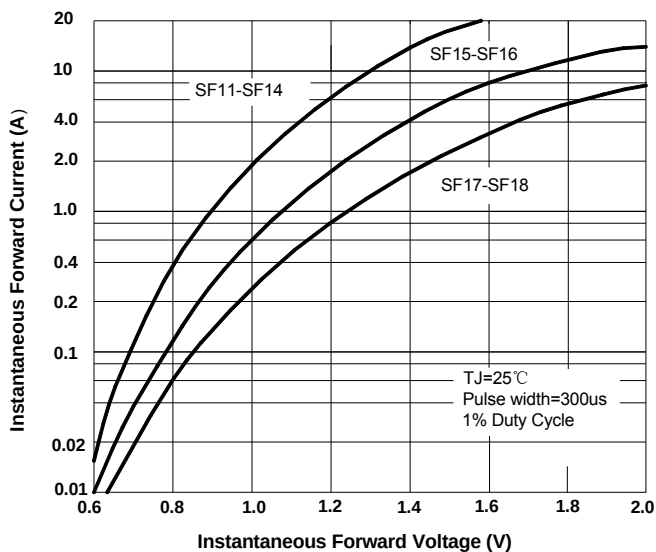
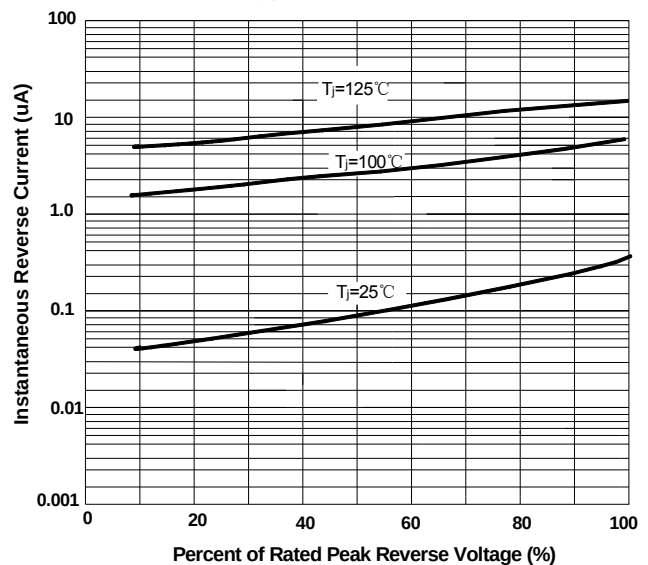


FIG.4: Typical Reverse Characteristics





The circuit diagram shows a series combination of a 50 Ω noninductive resistor, a diode (DUT), a 1 Ω noninductive resistor, and a 10 Ω noninductive resistor. A DC voltage source is connected in series with the 50 Ω resistor. The diode is in series with the 1 Ω resistor. The 10 Ω resistor is connected to a pulse generator (Note 2). An oscilloscope (Note 1) is connected in parallel with the 1 Ω resistor. The oscilloscope trace shows a current pulse with a peak value of approximately -0.75 A and a width of about 2 cm. The time base is set to 5/10 ns/cm, and the vertical scale is 1 cm = 0.25 A.

DO-204AL(DO-41)

The diagram shows a side view of a DO-204AL(DO-41) package. It is a cylindrical component with a central body and two flanges. Dimension lines with arrows indicate the following measurements:

- A**: The diameter of the central body.
- B**: The diameter of the left flange.
- C**: The length of the package from the center of the body to the outer edge of the flanges.
- D**: The diameter of the right flange.

Dimensions in millimeters

DO-204AL(DO-41)		
Dim	Min	Max
A	4.22	5.21
B	2.03	2.72
C	25.4	/
D	0.69	0.86



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