



SF51G THRU SF58G

VOLTAGE RANGE

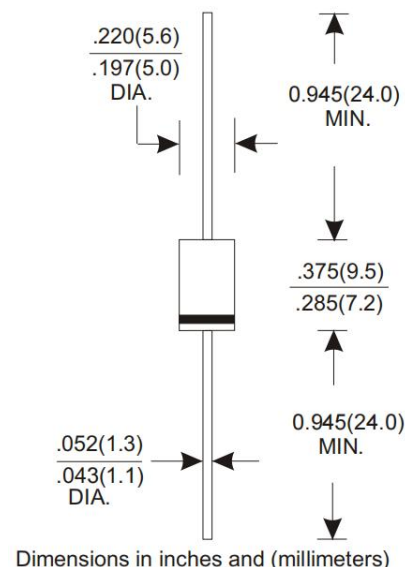
50 to 600 Volts

CURRENT

5.0 Ampere

Features

- Super fast switching speed
- Glass passivated chip junction
- Low power loss, high efficiency
- Low leakage
- High Surge Capacity
- High temperature soldering guaranteed
260°C/10 seconds, 0.375"(9.5mm) lead length



Mechanical Data

- Case: Transfer molded plastic
- Epoxy: UL94V-0 rate flame retardant
- Polarity: Color band denotes cathode end
- Lead: Plated axial lead, solderable per MIL-STD-202E method 208C
- Mounting position: Any
- Weight: 0.042ounce, 1.19 gram

Maximum Ratings and Electrical Characteristics

- Ratings 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	SF 51G	SF 52G	SF 53G	SF 54G	SF 55G	SF 56G	SF 57G	SF 58G	UNIT
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	50	100	150	200	300	400	500	600	Volts
Maximum RMS Voltage	V_{RMS}	35	70	105	140	210	280	350	420	Volts
Maximum DC Blocking Voltage	V_{DC}	50	100	100	200	300	400	500	600	Volts
Maximum Average Forward Rectified Current 0.375"(9.5mm) lead length at $T_A=125^\circ\text{C}$	$I_{(AV)}$	5.0								Amps
Peak Forward Surge Current 8.3mS single half sine wave superimposed on rated load (JEDEC method)	I_{FSM}	150								Amps
Maximum Instantaneous Forward Voltage at 5.0A	V_F	0.95			1.25		1.70			Volts
Maximum DC Reverse Current at rated DC blocking Voltage at	$T_A = 25^\circ\text{C}$	5.0								μA
	$T_A = 125^\circ\text{C}$	120								
Maximum Reverse Recovery Time ^(NOTE 1)	T_{RR}	35								nS
Typical Junction Capacitance ^(NOTE 2)	C_j	50				30				pF
Typical Thermal Resistance ^(NOTE 3)	$R_{\theta JA}$	30								$^\circ\text{C}/\text{W}$
Operating Junction Temperature Range	T_j	-55 to +150								$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-55 to +150								$^\circ\text{C}$

Notes:

1. Reverse Recovery Test Conditions: $I_f=0.5\text{A}$, $I_r=1.0\text{A}$, $I_{rr}=0.25\text{A}$.
2. Measured at 1.0MHz and applied reverse voltage of 4.0 Volts.
3. Thermal Resistance from Junction to Ambient with 0.375"(9.5mm) lead length, PCB mounted.



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Ratings and Characteristic Curves (T_A=25°C unless otherwise noted)

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

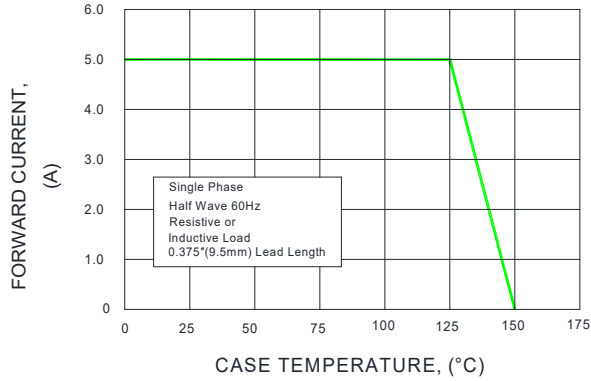


FIG.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

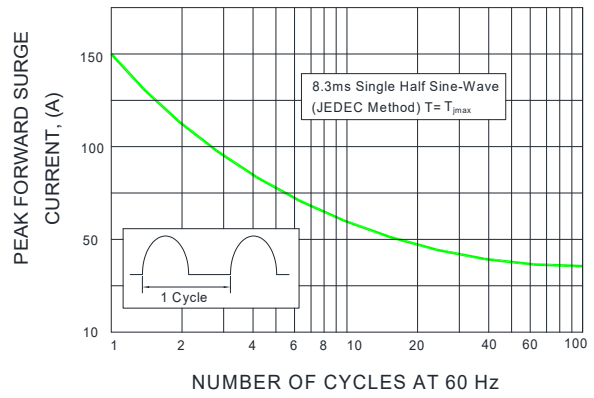


FIG.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

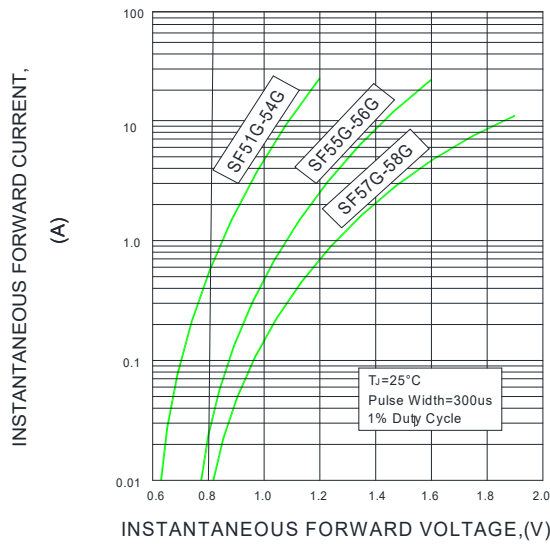


FIG.4-TYPICAL REVERSE CHARACTERISTICS

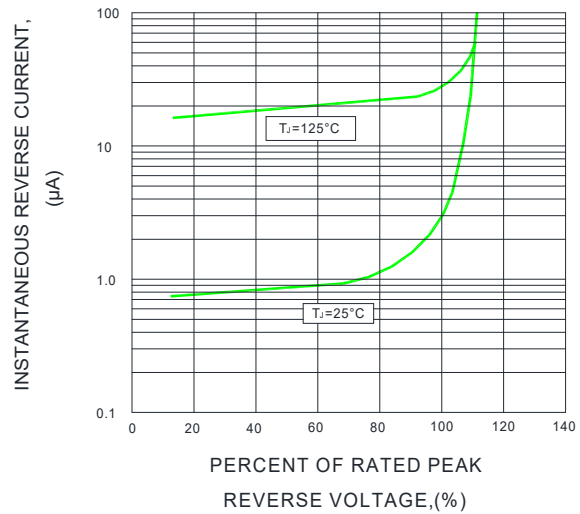


FIG.5-TYPICAL JUNCTION CAPACITANCE

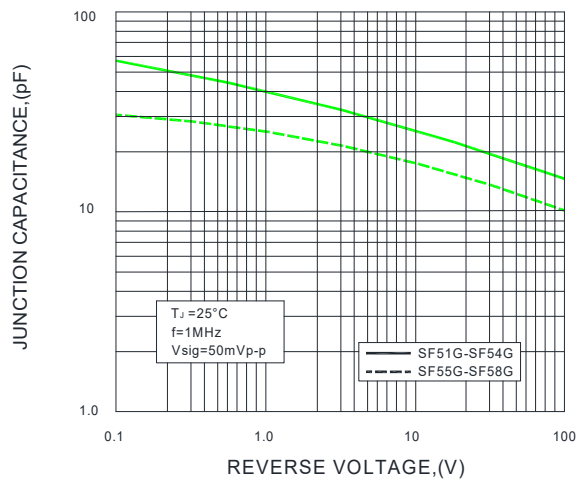
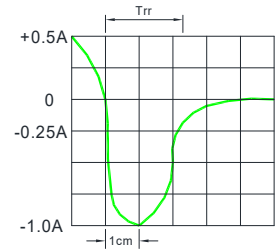
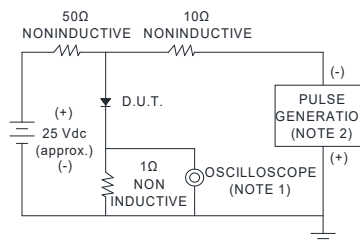


FIG.6-TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC

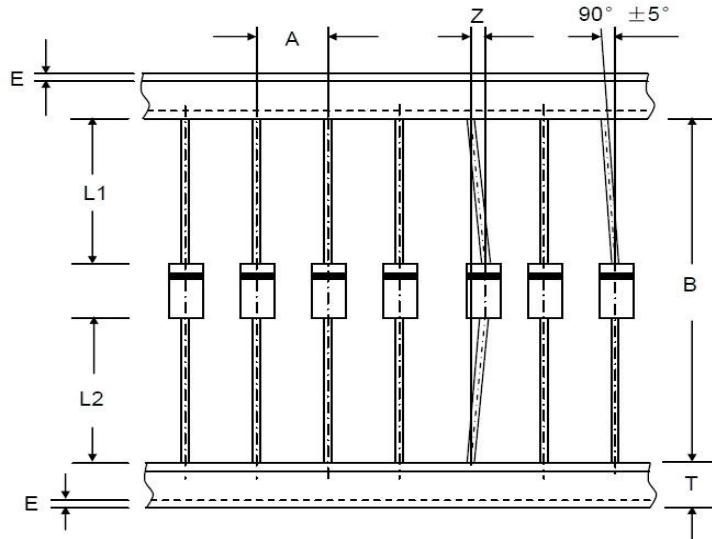


- NOTES : 1.Rise Time=7ns mas. Input Impedance= 1 magohm. 22pF
- 2.Rise time=10ns max. Source Impedance= 50 ohms

SET TIME BASE FOR 50/100ns/cm



Axial Lead Taping Specifications for Rectifiers

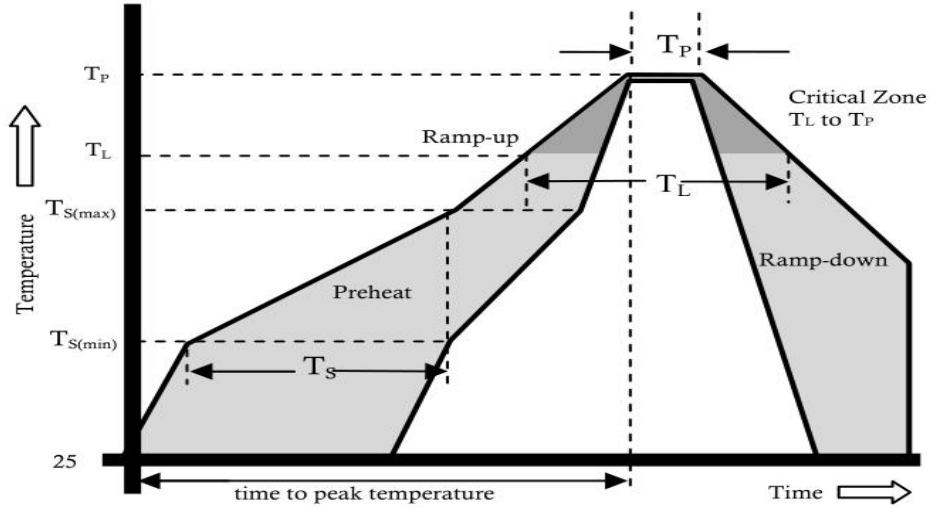


Component Outline	Component Pitch A	Inner Tape Pitch B	Cumulative Tolerance
	±0.5mm	+0.5mm -0.4mm	
DO-201AD(DO-27)	10.0mm	52.4mm	2.0mm/20pitch

Item	Symbol	Specifications(mm)	Specifications(inch)
Component alignment	Z	1.2 max	0.048 max
Tape width	T	6.0±0.4	0.236±0.016
Exposed adhesive	E	0.8 max	0.032 max
Body eccentricity	L1-L2	1.0 max	0.040 max



Reflow Profile



Reflow Condition		Pb-Free Assembly
Pre Heat	Temperature Min.	+150°C
	Temperature Max.	+200°C
	Time(Min to Max)	60-180 secs.
Average ramp up rate(Liquidus Temp(T_L) to peak)		3°C/sec. Max.
TS(max) to TL - Ramp-up Rate		3°C/sec. Max.
Reflow	Temperature (T_L)(Liquidus)	+217°C
	Temperature (T_L)	60-150 secs.
Peak Temp (T_P)		+(260+0/-5)°C
Time within 5°C of actual Peak Temp (T_P)		25 secs.
Ramp-down Rate		6°C/sec. Max.
Time 25°C to peak Temp (T_P)		8 min. Max.
Do not exceed		+260°C



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