

# SF20AG - SF20JG

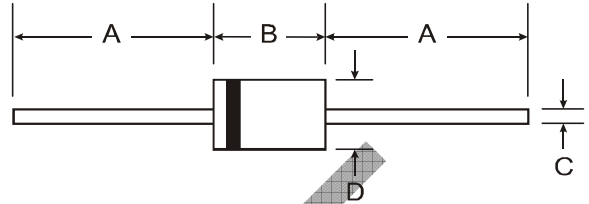
## 2.0A SUPER-FAST GLASS PASSIVATED RECTIFIER

### Features

- Glass Passivated Die Construction
- Super-Fast Switching for High Efficiency
- Surge Overload Rating to 60A Peak
- Low Reverse Leakage Current
- **Lead Free Finish, RoHS Compliant (Note 4)**

### Mechanical Data

- Case: DO-15
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Finish – Tin. Solderable per MIL-STD-202, Method 208 ③
- Polarity: Cathode Band
- Marking: Type Number
- Ordering Information: See Page 3
- Weight: 0.35 grams (approximate)



DO-15		
Dim	Min	Max
A	25.40	—
B	5.50	7.62
C	0.686	0.889
D	2.60	3.6
All Dimensions in mm		

### Maximum Ratings and Electrical Characteristics @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Single phase, half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

Characteristic	Symbol	SF20 AG	SF20 BG	SF20 CG	SF20 DG	SF20 FG	SF20 GG	SF20 HG	SF20 JG	Unit
Peak Repetitive Reverse Voltage	$V_{RRM}$									V
Working Peak Reverse Voltage	$V_{RWM}$	50	100	150	200	300	400	500	600	
DC Blocking Voltage (Note 5)	$V_R$									
RMS Reverse Voltage	$V_{R(RMS)}$	35	70	105	140	210	280	350	420	V
Average Rectified Output Current (Note 1)	$I_O$	2.0								A
Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave Superimposed on Rated Load	$I_{FSM}$	60								A
Forward Voltage	$V_{FM}$	0.95		1.3			1.5			V
Peak Reverse Current at Rated DC Blocking Voltage (Note 5)	$I_{RM}$	10 100								$\mu\text{A}$
Reverse Recovery Time (Note 2)	$t_{rr}$	35			40		50			ns
Typical Total Capacitance (Note 3)	$C_T$	75						50		pF
Typical Thermal Resistance Junction to Ambient	$R_{\theta JA}$	40								$^\circ\text{C}/\text{W}$
Operating and Storage Temperature Range	$T_j, T_{STG}$	-65 to +150								$^\circ\text{C}$

- Notes:
1. Valid provided that leads are maintained at ambient temperature at a distance of 9.5mm from the case.
  2. Measured with  $I_F = 0.5\text{A}$ ,  $I_R = 1.0\text{A}$ ,  $I_{rr} = 0.25\text{A}$ . See figure 5.
  3. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
  4. RoHS revision 13.2.2003. High temperature solder exemption applied, see *EU Directive Annex Notes 5 and 7*.
  5. Short duration pulse test used to minimize self-heating effect.

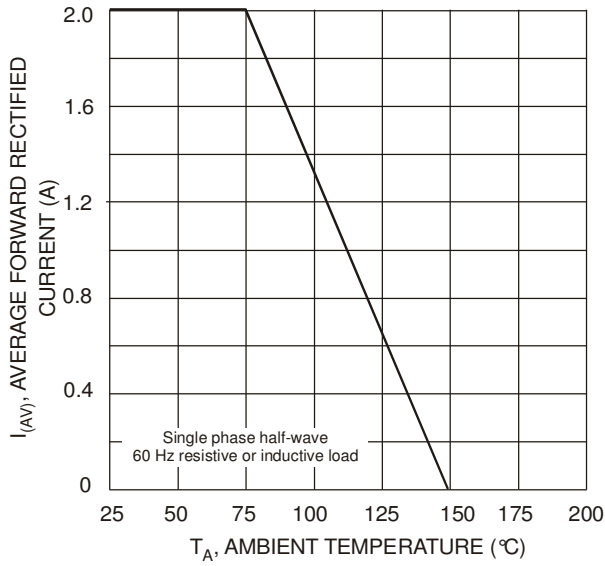


Fig. 1 Forward Current Derating Curve

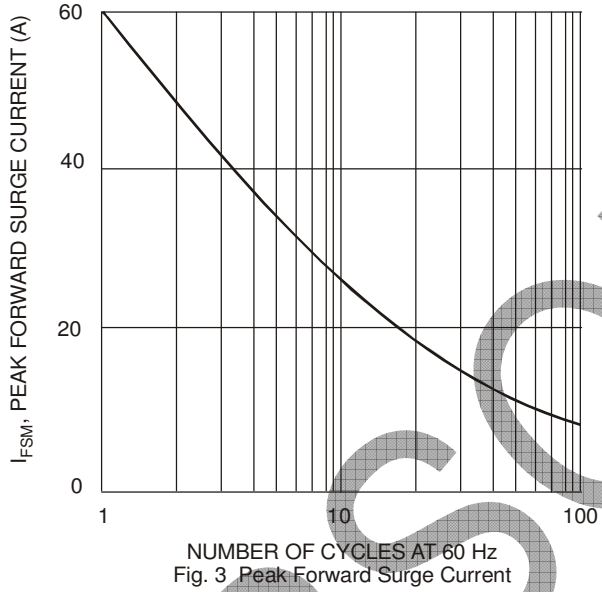
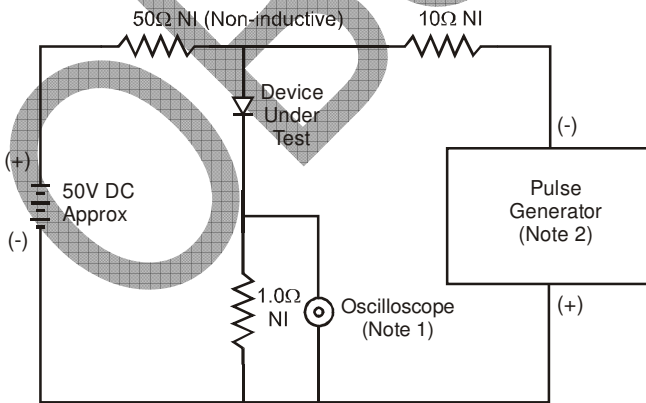


Fig. 3 Peak Forward Surge Current



- Notes:
1. Rise Time = 7.0ns max. Input Impedance = 1.0MΩ, 22pF.
  2. Rise Time = 10ns max. Input Impedance = 50Ω.

Fig. 5 Reverse Recovery Time Characteristic and Test Circuit

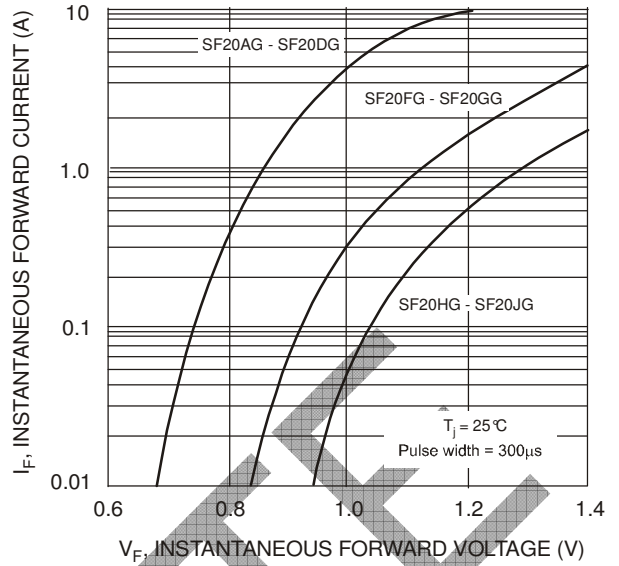


Fig. 2 Typical Forward Characteristics

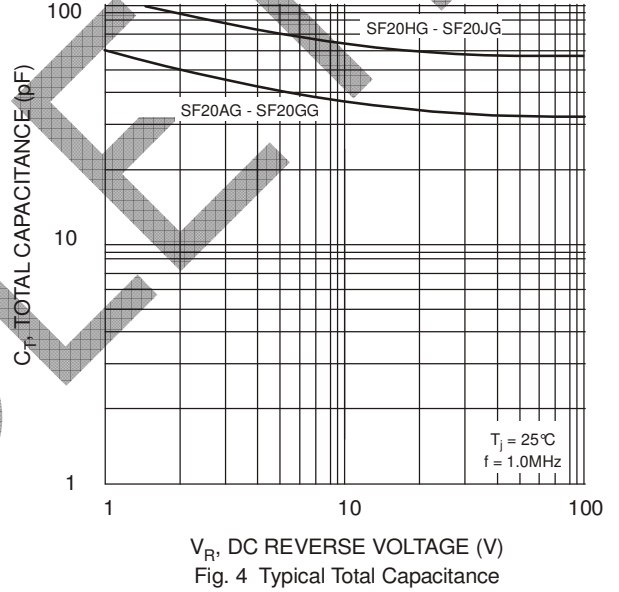
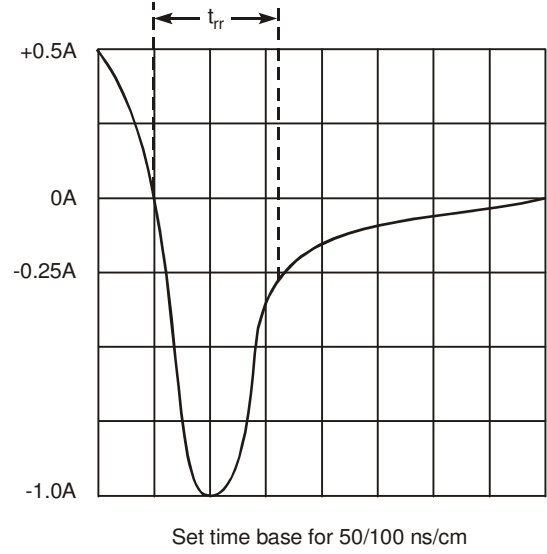


Fig. 4 Typical Total Capacitance



Set time base for 50/100 ns/cm

**Ordering Information** (Note 6)

Device	Packaging	Shipping
SF20AG-T	DO-15	4K/Tape & Reel, 13-inch
SF20BG-T	DO-15	4K/Tape & Reel, 13-inch
SF20CG-T	DO-15	4K/Tape & Reel, 13-inch
SF20DG-T	DO-15	4K/Tape & Reel, 13-inch
SF20FG-T	DO-15	4K/Tape & Reel, 13-inch
SF20GG-T	DO-15	4K/Tape & Reel, 13-inch
SF20HG-T	DO-15	4K/Tape & Reel, 13-inch
SF20JG-T	DO-15	4K/Tape & Reel, 13-inch

Notes: 6. For packaging details, visit our website at <http://www.diodes.com/datasheets/ap02008.pdf>.

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