

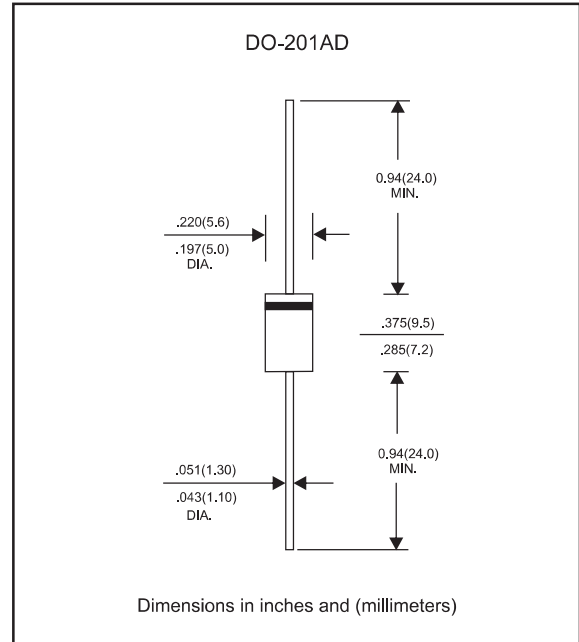
### Features

- Low reverse leakage current
- Low forward drop down voltage & high current capability
- High surge current capability
- Super fast switching speed for high efficiency
- Glass passivated chip junction
- High Reliability
- Lead-free parts for green partner, meet RoHS requirements
- Suffix "-H" indicates Halgon free parts, ex. SF51GH.

### Mechanical data

- Epoxy : UL94-V0 rated flame retardant
- Case : Molded plastic, DO-201AD
- Lead : Axial leads, solderable per MIL-STD-202, Method 208 guaranteed
- Polarity: Color band denotes cathode end
- Mounting Position : Any

### Package outline



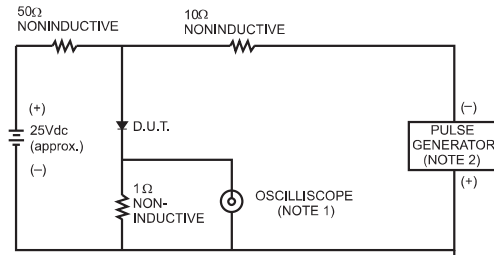
### Maximum ratings and Electrical Characteristics (AT $T_A=25^\circ\text{C}$ unless otherwise noted)

	SYMBOLS	SF51G	SF52G	SF53G	SF54G	SF55G	SF56G	SF57G	SF58G	UNITS
Maximum repetitive 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 0.375" (9.5mm) lead length at $T_A=55^\circ\text{C}$	$I_{(AV)}$	5.0								A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	150								A
Maximum instantaneous forward voltage at 5.0A	$V_F$	0.95			1.25		1.7			V
Maximum DC reverse current $T_A=25^\circ\text{C}$ at rated DC blocking voltage $T_A=100^\circ\text{C}$	$I_R$	10.0				100.0				$\mu\text{A}$
Maximum reverse recovery time (NOTE 1)	$t_{rr}$	35								ns
Typical junction capacitance (NOTE 2)	$C_J$	80.0								pF
Typical thermal resistance (NOTE 3)	$R_{\theta JA}$	30.0								$^\circ\text{C}/\text{W}$
Operating junction and storage temperature range	$T_J, T_{STG}$	-55 to +150								$^\circ\text{C}$

- Note:** 1.Reverse recovery condition  $I_F=0.5\text{A}, I_R=1.0\text{A}, I_{rr}=0.25\text{A}$   
 2.Measured at 1MHz and applied reverse voltage of 4.0V D.C.  
 3.Thermal resistance from junction to ambient at 0.375" (9.5mm) lead length, P.C.B. mounted

### Rating and characteristic curves

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



NOTES: 1. Rise Time= 7ns max., Input Impedance= 1 megohm, 22pF.  
2. Rise Time= 10ns max., Source Impedance= 50 ohms.

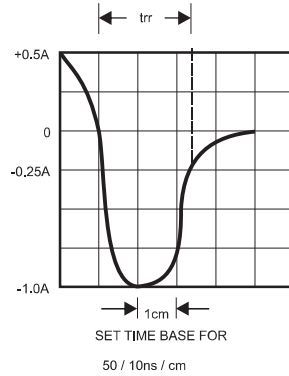


FIG.2-TYPICAL FORWARD CURRENT DERATING CURVE

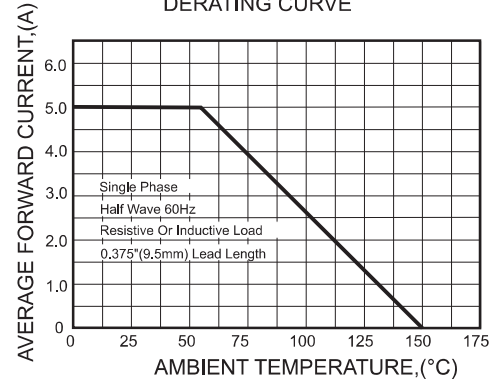


FIG. 3 - TYPICAL FORWARD CHARACTERISTICS

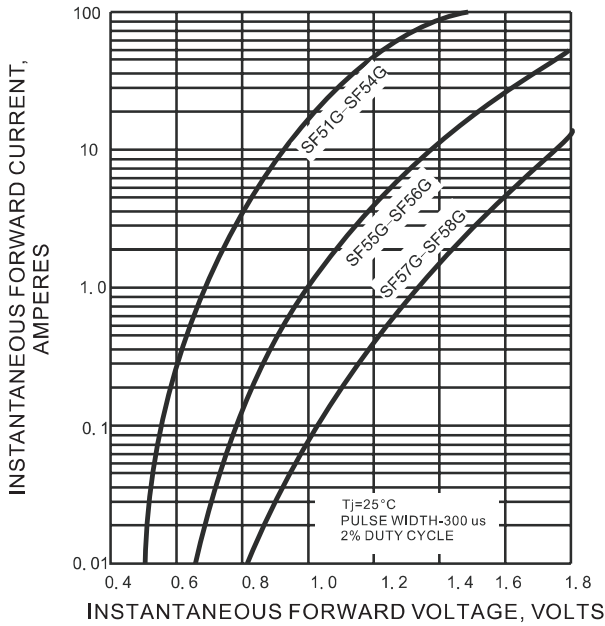


FIG.4-TYPICAL REVERSE CHARACTERISTICS

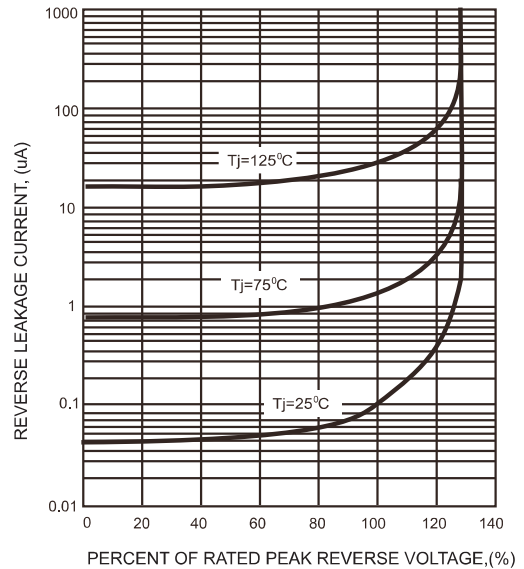


FIG.5-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

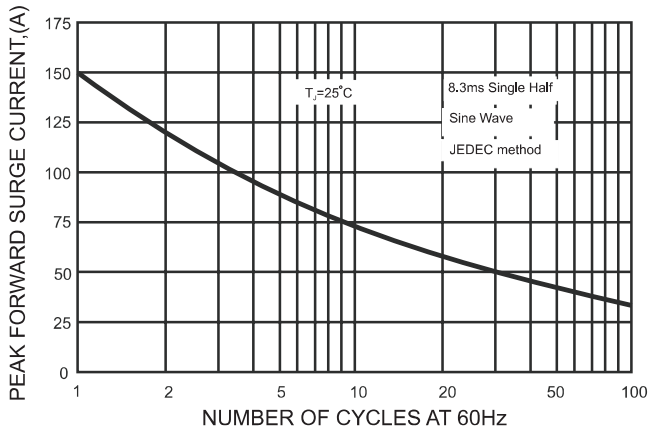
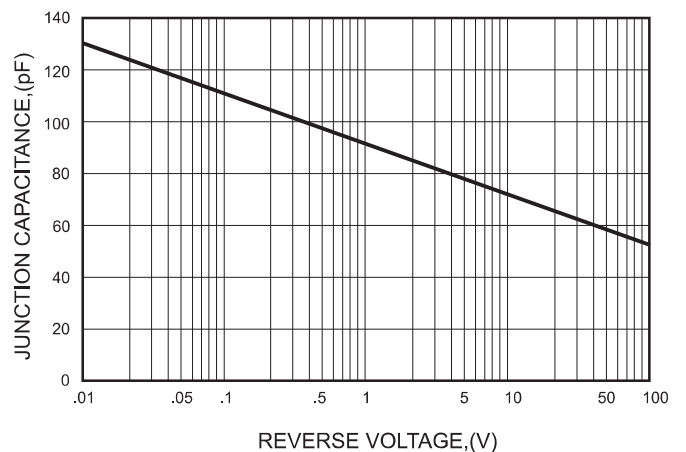




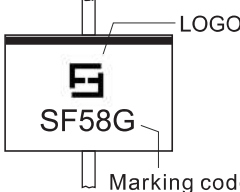
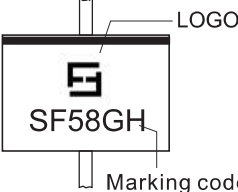
FIG.6-TYPICAL JUNCTION CAPACITANCE



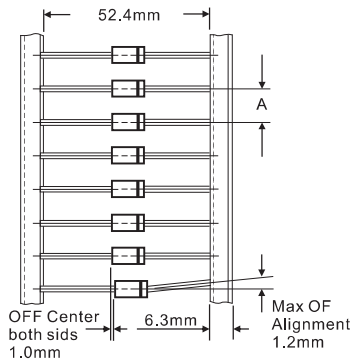
**Pinning information**

Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode	1 ————  ———— 2	1 ————  ———— 2

**Marking**

Type number	Marking code	Example	
SF51G	SF51G	For Halogen Device 	For Halogen-free Device 
SF52G	SF52G		
SF53G	SF53G		
SF54G	SF54G		
SF55G	SF55G		
SF56G	SF56G		
SF57G	SF57G		
SF58G	SF58G		

**Taping specifications for AXIAL devices**



**AMMO PACKING**

DEVICE CASE TYPE	Q'TY 1 (PCS / BOX)	INNER BOX SIZE (m/m)	CARTON SIZE (m/m)	Q'TY 2 (PCS / CARTON)	APPROX. CROSS WEIGHT(kg)
DO-201AD	1,250	258 * 75 * 143	405 * 270 * 320	12,500	14.0

**Suggested thermal profiles for soldering processes**

1. Lead free temperature profile wave-soldering

