

# SF51G THRU SF58G

## 5.0A Axial Leaded Super Fast Rectifiers-50-600V

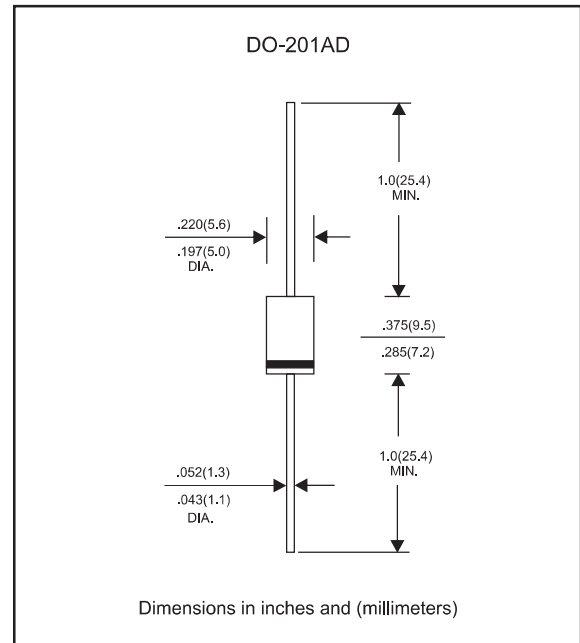
### Features

- 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. SF51G-H.

### 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
- Weight : Approximated 1.10 gram

### Package outline



### Maximum ratings and Electrical Characteristics (AT T<sub>A</sub>=25°C unless otherwise noted)

PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
Forward rectified current	Ambient temperature = 55°C	I <sub>O</sub>			5.0	A
Forward surge current	8.3ms single half sine-wave (JEDEC methode)	I <sub>FSM</sub>			150	A
Reverse current	V <sub>R</sub> = V <sub>RRM</sub> T <sub>J</sub> = 25°C	I <sub>R</sub>			5.0	μA
	V <sub>R</sub> = V <sub>RRM</sub> T <sub>J</sub> = 125°C				100	
Thermal resistance	Junction to ambient	R <sub>θJA</sub>		30		°C/W
Diode junction capacitance	f=1MHz and applied 4V DC reverse voltage	C <sub>J</sub>		80		pF
Storage temperature		T <sub>STG</sub>	-65		+175	°C

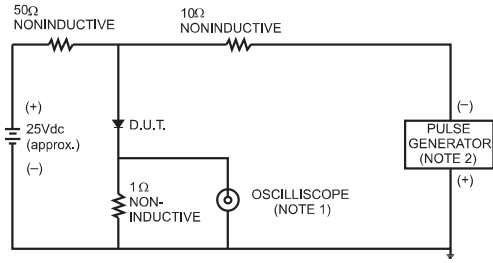
SYMBOLS	V <sub>RRM</sub> <sup>*1</sup> (V)	V <sub>RMS</sub> <sup>*2</sup> (V)	V <sub>R</sub> <sup>*3</sup> (V)	V <sub>F</sub> <sup>*4</sup> (V)	t <sub>rr</sub> <sup>*5</sup> (ns)	Operating temperature T <sub>J</sub> , (°C)
SF51G	50	35	50	0.95	35	-55 to +150
SF52G	100	70	100			
SF53G	150	105	150			
SF54G	200	140	200			
SF55G	300	210	300	1.25	35	-55 to +150
SF56G	400	280	400			
SF57G	500	350	500			
SF58G	600	420	600	1.70	35	-55 to +150

- \*1 Repetitive peak reverse voltage
- \*2 RMS voltage
- \*3 Continuous reverse voltage
- \*4 Maximum forward voltage@I<sub>F</sub>=5.0A
- \*5 Maximum Reverse recovery time, note 1

Note 1. Reverse recovery time test condition, I<sub>F</sub>=0.5A, I<sub>R</sub>=1.0A, I<sub>RR</sub>=0.25A

## Rating and characteristic curves (SF51G THRU SF58G)

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.

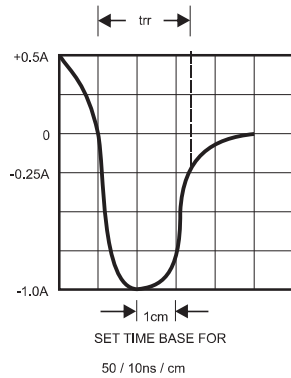


FIG.2-TYPICAL FORWARD CURRENT DERATING CURVE

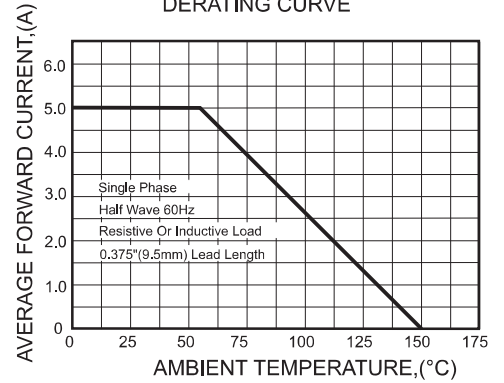


FIG. 3 - TYPICAL FORWARD CHARACTERISTICS

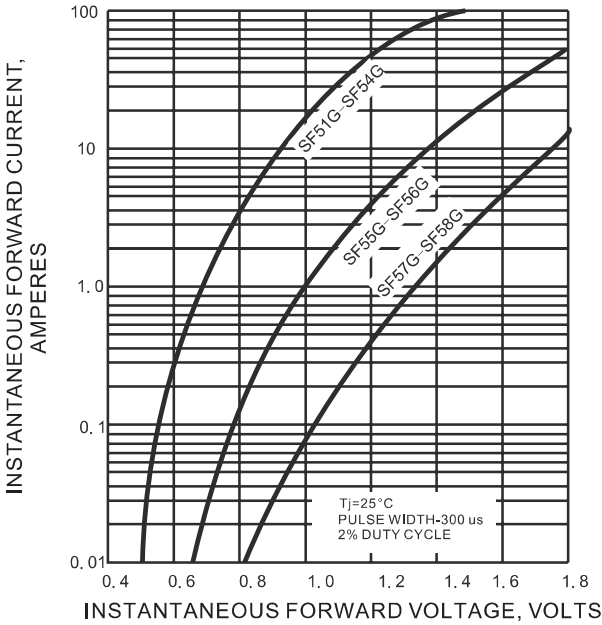


FIG.4-TYPICAL REVERSE CHARACTERISTICS

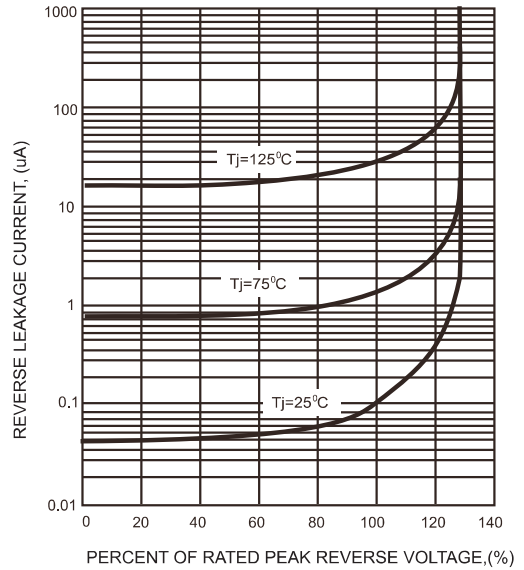


FIG.5-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

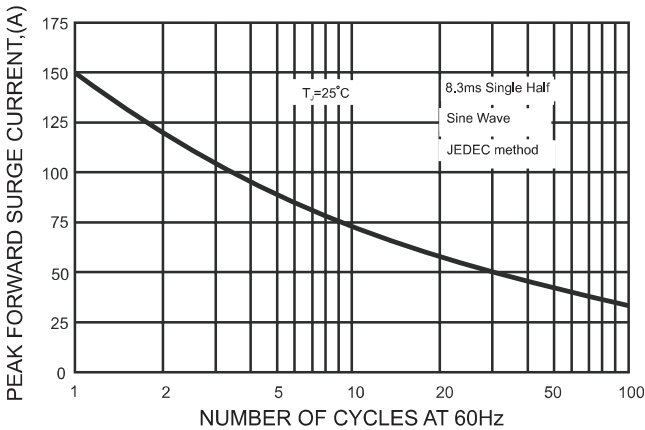
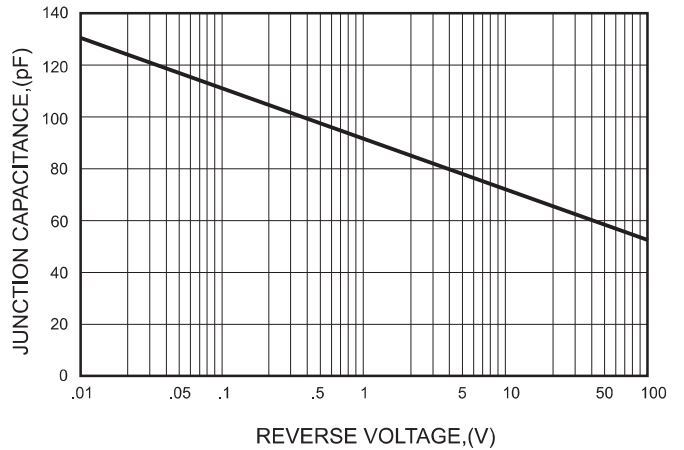




FIG.6-TYPICAL JUNCTION CAPACITANCE



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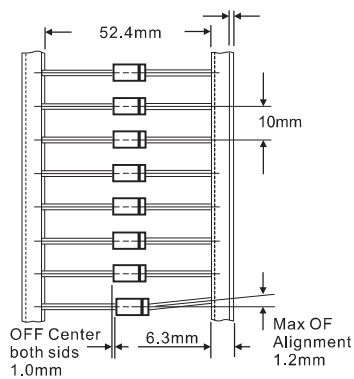
## Pinning information

Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode		

## Marking

Type number	Marking code
SF51G	SF51G
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	252 * 78 * 150	405 * 270 * 320	12,500	14.0