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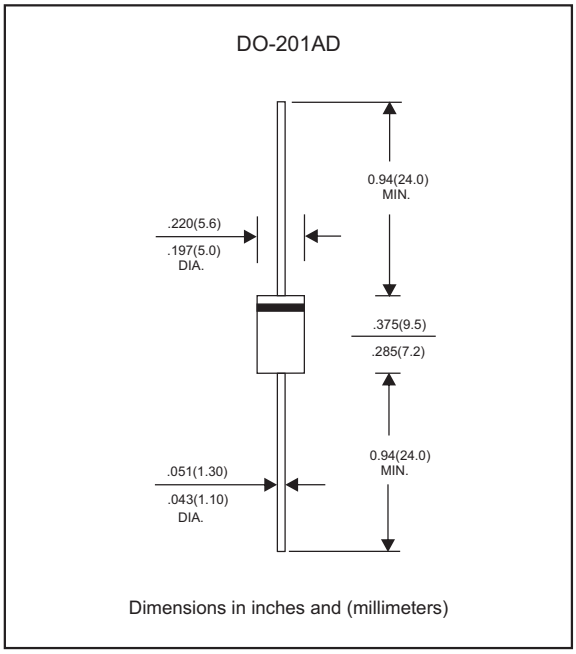
SF31G THRU SF38G

3.0A Axial Leaded Super Fast Rectifiers-50-600V

Features

- Axial lead type devices for through hole design
- High current capability.
- Superfast recovery time for switching mode application,
- High surge capability.
- Glass passivated chip junction structure.
- Lead-free parts meet RoHS requirments.
- Suffix "-H" indicates Halogen free parts, ex. SF31G-H.

Package outline



Mechanical data

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

Maximum ratings and Electrical Characteristics (AT T_A=25°C unless otherwise noted)

PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
Forward rectified current	Ambient temperature = 55°C	I_O			3.0	A
Forward surge current	8.3ms single half sine-wave (JEDEC methode)	I_{FSM}			125	A
Reverse current	V_R = V_{RRM} T_J = 25°C	I_R			5.0	μA
	V_R = V_{RRM} T_J = 125°C				100	
Thermal resistance	Junction to ambient Junction to case Junction to lead	$R_{\theta JA}$ $R_{\theta JC}$ $R_{\theta JL}$		20 12 8		°C/W °C/W °C/W
Diode junction capacitance	f=1MHz and applied 4V DC reverse voltage	C_J		50		pF
Storage temperature		T_{STG}	-65		+175	°C

SYMBOLS	V_{RRM} *1 (V)	V_{RMS} *2 (V)	V_R *3 (V)	V_F *4 (V)	t_{rr} *5 (ns)	Operating temperature T_J, (°C)
SF31G	50	35	50	0.95	35	-55 to +150
SF32G	100	70	100			
SF33G	150	105	150			
SF34G	200	140	200			
SF35G	300	210	300	1.25		
SF36G	400	280	400			
SF37G	500	350	500	1.70		
SF38G	600	420	600			

Note 1. Reverse recovery time test condition, I_F=0.5A, I_R=1.0A, I_{RR}=0.25A

*1 Repetitive peak reverse voltage

*2 RMS voltage

*3 Continuous reverse voltage

*4 Maximum forward voltage@I_F=3.0A

*5 Maximum Reverse recovery time, note 1

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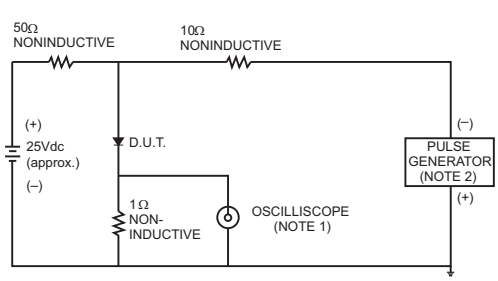
Rating and characteristic curves

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.

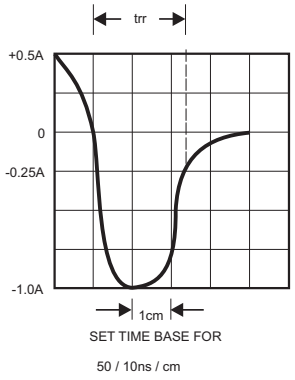


FIG.2-TYPICAL FORWARD CURRENT DERATING CURVE

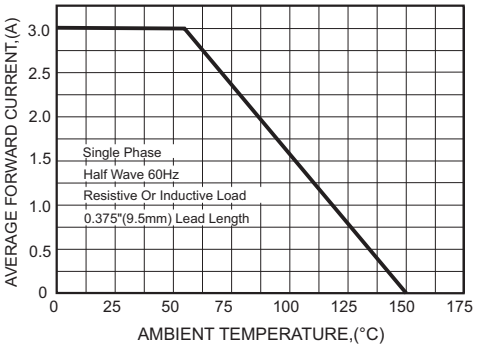


FIG.3-TYPICAL FORWARD CHARACTERISTICS

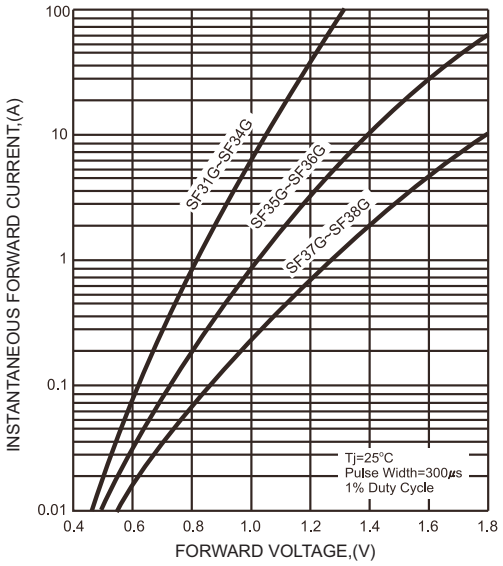


FIG.4-TYPICAL REVERSE CHARACTERISTICS

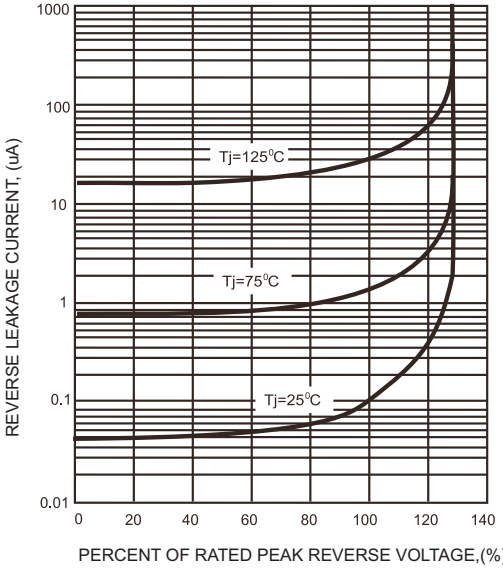


FIG.5-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

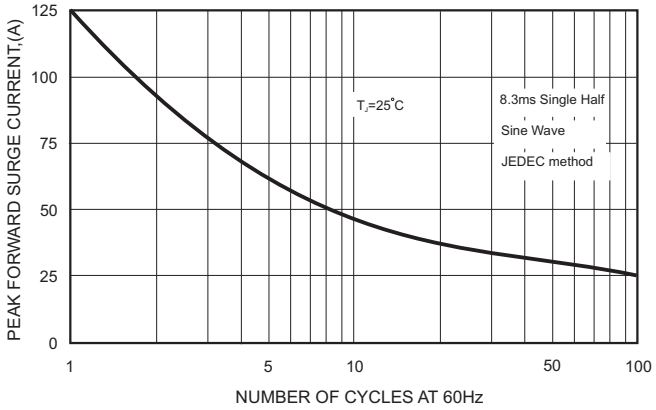
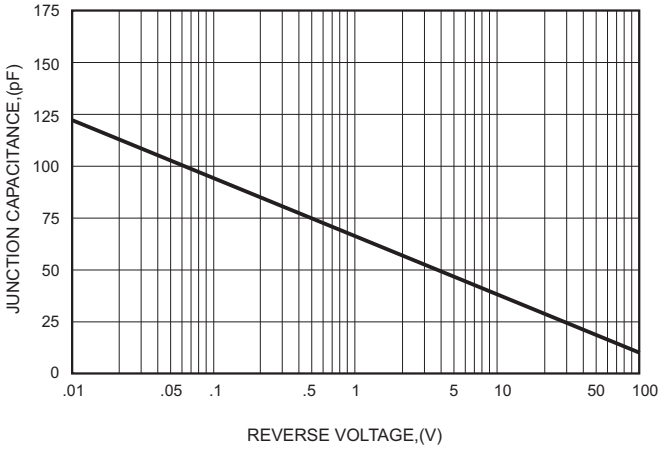


FIG.6-TYPICAL JUNCTION CAPACITANCE



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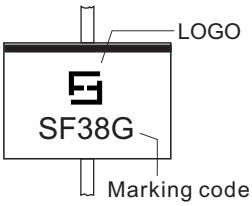
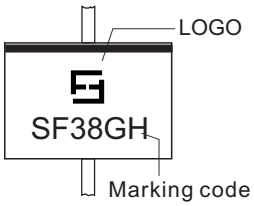
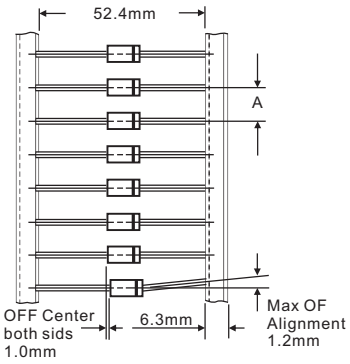
Pinning information

Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode		

Marking

Type number	Marking code	Example	
SF31G SF32G SF33G SF34G SF35G SF36G SF37G SF38G	SF31G SF32G SF33G SF34G SF35G SF36G SF37G SF38G	For Halogen Device 	For Halogen-free Device 

Taping specifications for AXIAL devices

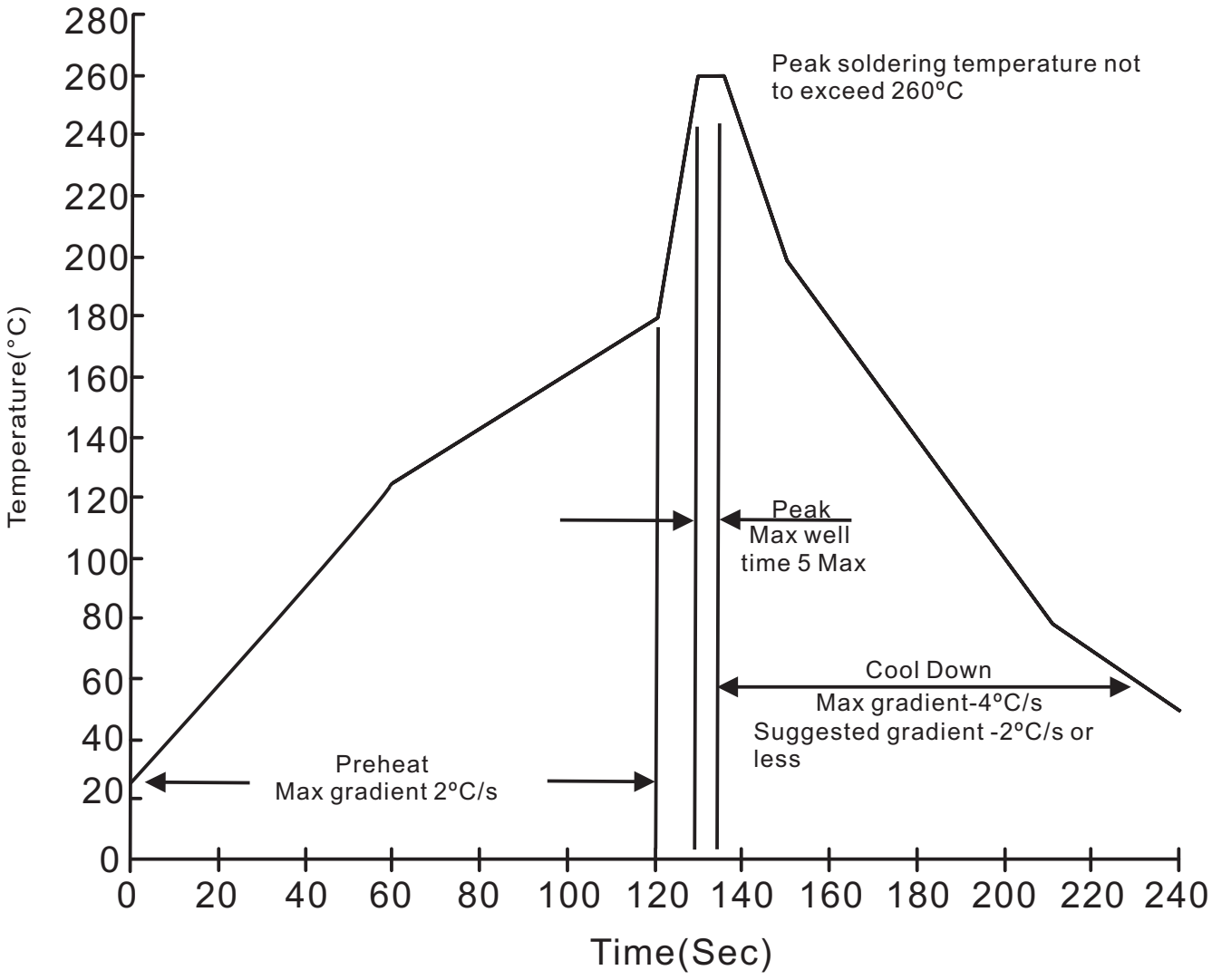


AMMO PACKING

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



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