

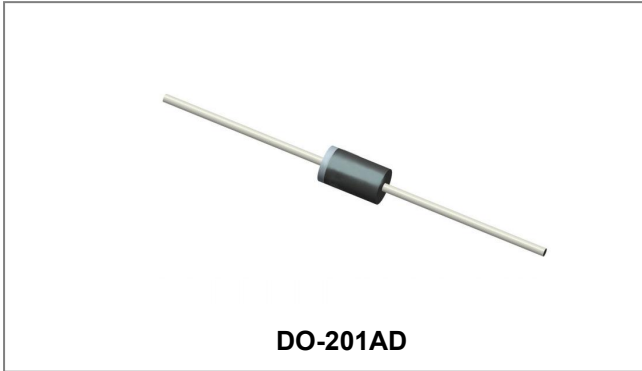


# THE DATASHEET OF FR303G



## FR301G THRU FR307G

### GLASS PASSIVATED FAST RECOVERY RECTIFIERS



#### Features

- Glass passivated Die Construction
- High Current Capability
- Low Forward Voltage Drop, High Efficiency
- Low Power Loss
- Fast Recovery Time
- High Surge Current Capability
- This is a Pb – Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

#### Circuit Diagram



#### Mechanical Data

- Case: DO-201AD molded plastic body
- Terminals: Plated axial leads, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end
- Mounting Position: Any
- Weight: 0.04 ounce, 1.10 grams

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

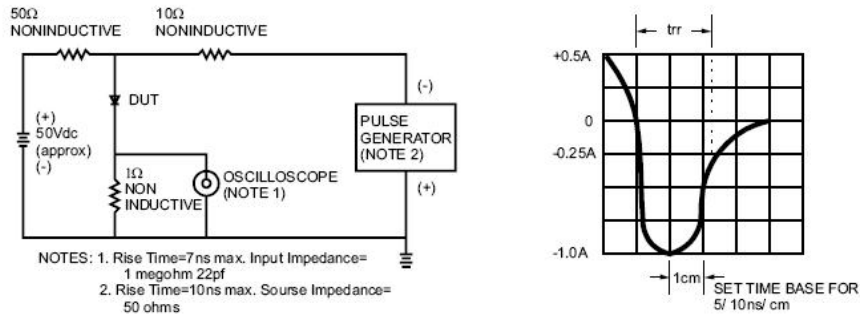
Single phase half-wave 60Hz, resistive or inductive load, for capacitive load current derate by 20%.

Characteristic	Symbol	FR 301G	FR 302G	FR 303G	FR 304G	FR 305G	FR 306G	FR 307G	Units
Maximum repetitive peak reverse voltage Maximum DC blocking voltage	$V_{RRM}$ $V_{DC}$	50	100	200	400	600	800	1000	V
Maximum RMS voltage	$V_{RMS}$	35	70	140	280	420	560	700	V
Maximum average forward rectified current 0.375"(9.5mm) lead length at @ $T_L=75^{\circ}\text{C}$	$I_{(AV)}$	3.0							A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	125							A
Maximum instantaneous forward voltage at 3.0A	$V_F$	1.3							V
Maximum DC reverse current @ $T_A=25^{\circ}\text{C}$ At Rated DC Blocking Voltage @ $T_A=125^{\circ}\text{C}$	$I_{RM}$	5.0 100							$\mu\text{A}$
Maximum reverse recovery time (Note 1)	$t_r$	150				250	500		ns
Typical Junction Capacitance (Note 2)	$C_J$	60							pF
Typical Thermal Resistance Junction to Ambient (Note 3)	$R_{\theta JA}$	20							$^{\circ}\text{C/W}$
Operating junction temperature range	$T_J$	-65 to +150							$^{\circ}\text{C}$
Operating storage temperature range	$T_{STG}$	-65 to +150							$^{\circ}\text{C}$

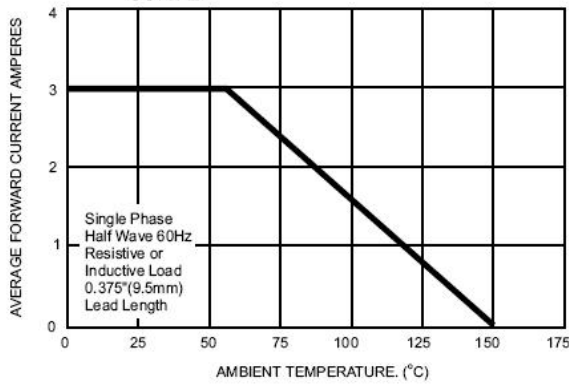
Note: 1. Reverse recovery condition  $I_F=0.5\text{A}$ ,  $I_R=1.0\text{A}$ ,  $I_{rr}=0.25\text{A}$   
 2. Measured at 1MHz and applied reverse voltage of 4.0V D.C.  
 3. Thermal resistance from junction to ambient at 0.375"(9.5mm)lead length, P.C.B. mounted

**Ratings and Characteristics Curves**

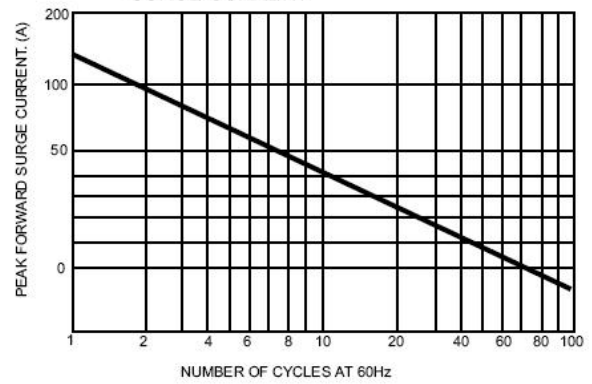
**FIG.1- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM**



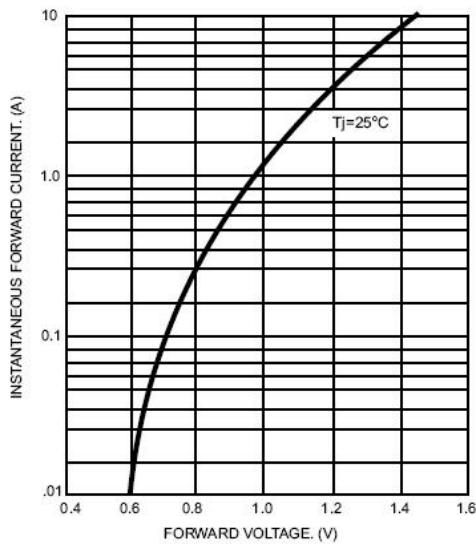
**FIG.2- MAXIMUM FORWARD CURRENT DERATING CURVE**



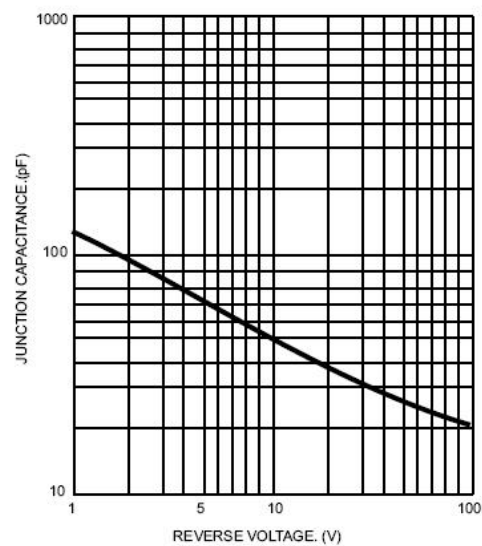
**FIG.3- MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT**



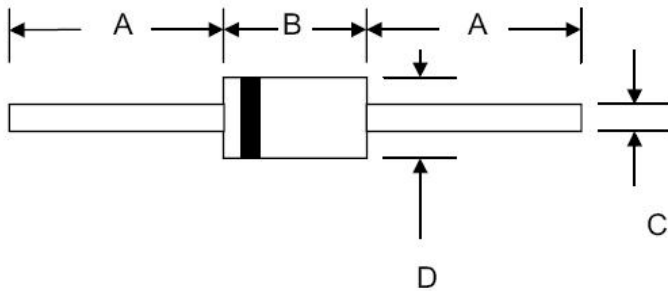
**FIG.4- TYPICAL FORWARD CHARACTERISTICS**



**FIG.5- TYPICAL JUNCTION CAPACITANCE**



**Mechanical Dimensions DO-201AD**



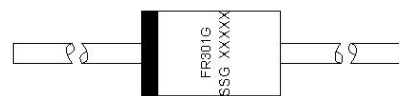
SYMBOL	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	25.4	-	1.000	-
B	7.2	9.5	0.285	0.375
C	1.2	1.3	0.048	0.052
D	5.0	5.6	0.197	0.220

**Ordering Information**

Device	Package	Shipping
FR301G-FR307G	DO-201AD (Pb-Free)	1250pcs / tape

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

**Marking Diagram**

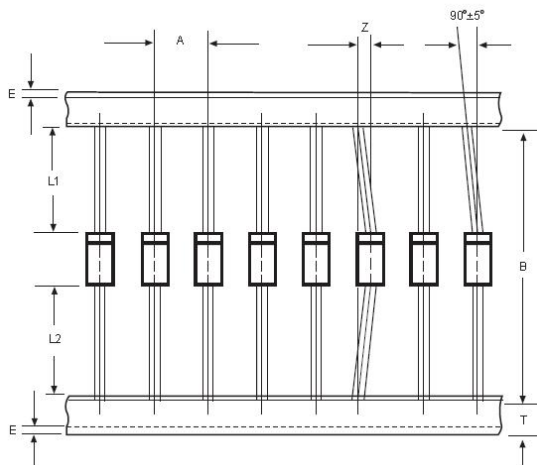


Where XXXXX is YYWWL

FR301G = Part Name  
SSG = SSG  
YY = Year  
WW = Week  
L = Lot Number

Cautions: Molding resin  
Epoxy resin UL:94V-0

**Carrier Tape Specification DO-201AD**



SYMBOL	Millimeters	
	Min.	Max.
A	9.50	10.50
B	50.9	53.9
Z	-	1.20
T	5.60	6.40
E	-	0.80
IL1-L2I	-	1.0

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