3A,50-1000V Fast Recovery Rectifiers

Features

- Low leakage current
- Low forward voltage drop
- Glass passivated chip junction
- For general purpose applications
- Moisture sensitivity: level 1, per J-STD-020
- For fast switching and low logic level applications
- High temperature soldering guaranteed: 260℃/10 seconds

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Applications

- Small battery charger, Power supplies

Maximum Ratings & Electrical Characteristics (T_A=25℃ unless otherwise noted)

Parameter	Symbol	FR301G	FR302G	FR303G	FR304G	FR305G	FR306G	FR307G	Unit
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	200	400	600	800	1000	V
Maximum RMS voltage	V_{RMS}	35	70	140	280	420	560	700	V
Maximum DC blocking voltage	V_{DC}	50	100	200	400	600	800	1000	V
Maximum average forward rectified current	$I_{F(AV)}$	3							A
Peak forward surge current,8.3ms single half sine-wave superimposed on rated load per diode	I_{FSM}	125							A
Operating junction temperature range	T_J	-55 to +150							°C
Storage temperature range	T_{STG}	-55 to +150							°C

Thermal-Mechanical Specifications (T_A=25℃ unless otherwise noted)

Parameter	Symbol	Typ	Unit
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	33	°C /W
Thermal Resistance, Junction to Case	$R_{\theta JC}$	15	°C /W
Thermal Resistance, Junction to Lead	$R_{\theta JL}$	13	°C /W

Electrical Specifications(T_A=25℃ unless otherwise noted)										
Parameter	**Symbol**	**Test Conditions**	**FR301G**	**FR302G**	**FR303G**	**FR304G**	**FR305G**	**FR306G**	**FR307G**	**Unit**
Forward Drop Voltage	V_F	I_F=3A	1.30							V
Reverse leakage current @V_R	I_R	T_J =25℃	5							uA
		T_J =125℃	100							
Typical junction capacitance	C_J	4.0 V 1 MHZ	80							pF
Maximum reverse recovery time	trr	I_F=0.5A, I_R=1.0A, I_{RR}=0.25A	150				250	500		nS

Note：

1. Valid provided that leads at a distance of 9.5 mm from case are kept at ambient temperature.

Ratings and Characteristics Curves

(TA = 25℃ unless otherwise noted)

FIG.1-MAXIMUM FORWARD CURRENT DERATING CURVE

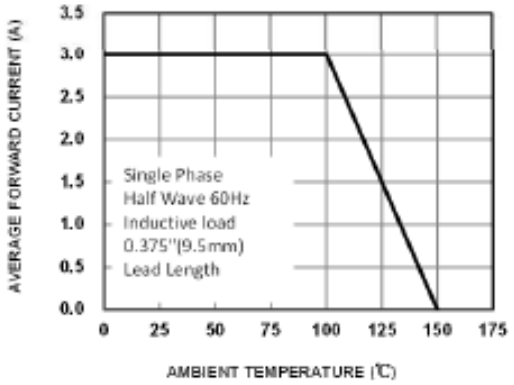


FIG.2-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

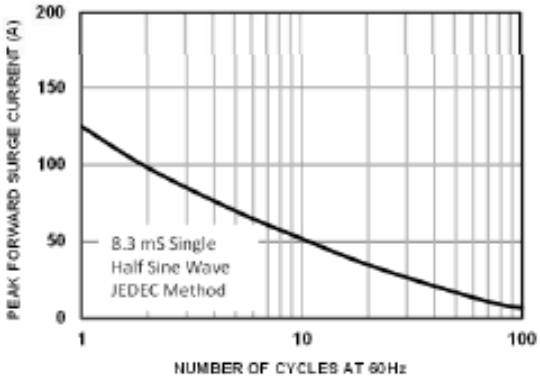


FIG.3-TYPICAL FORWARD CHARACTERISTICS

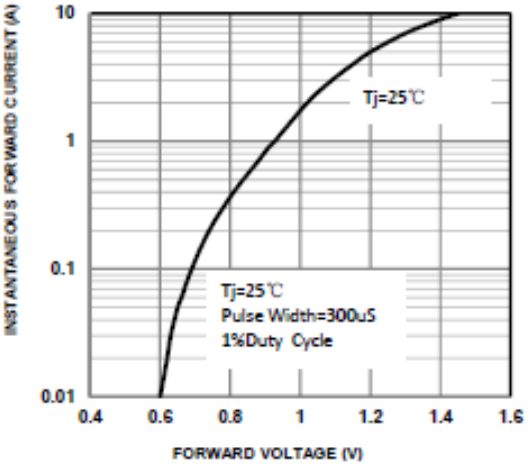


FIG.4-TYPICAL JUNCTION CAPACITANCE

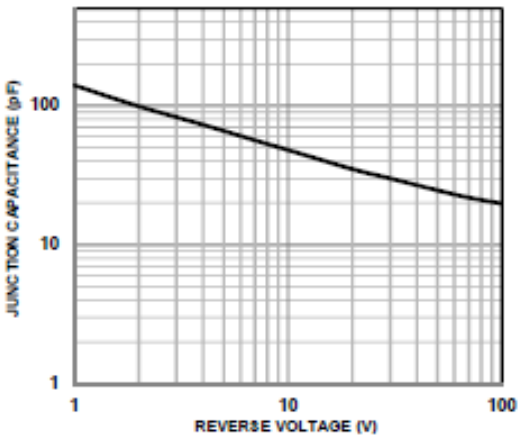
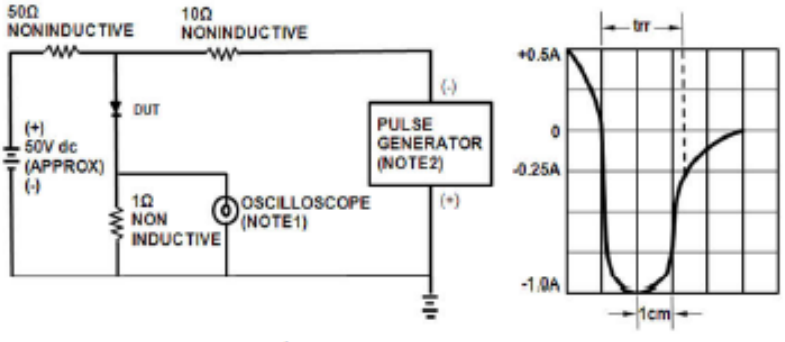


FIG .5 - REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



NOTES: 1. Rise Time=7ns max. Input impedance= 1 megohm 22pf
2. Rise Time=10ns max. Source impedance= 50 ohms

SET TIME BASE FOR 5/10ns/cm

Package Outline Dimensions

in inches (millimeters)

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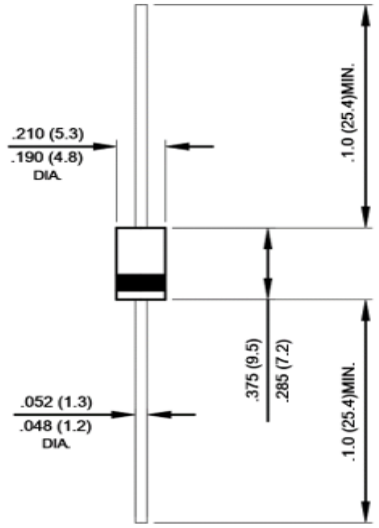

Dimensions in inches and (millimeters)

Revision History

Document Version	Date of release	Description of changes
Rev.A	2021.06.01	Released Datasheet
Rev.B	2023.11.13	Modify document format

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