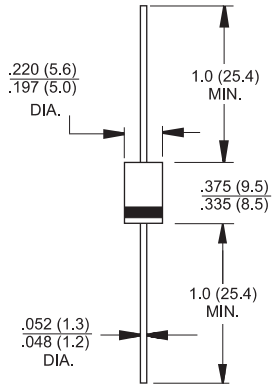
FR301-FR309

3.0 AMP. Fast Recovery Rectifiers

DO-201AD



Dimensions in inches and (millimeters)

Features

- ✧ High efficiency, Low VF
- ✧ High current capability
- ✧ High reliability
- ✧ High surge current capability
- ✧ Low power loss.

Mechanical Data

- ✧ Cases: Molded plastic
- ✧ Epoxy: UL 94V-0 rate flame retardant
- ✧ Polarity: Color band denotes cathode end
- ✧ High temperature soldering guaranteed: 260°C/10 seconds/.375",(9.5mm) lead lengths at 5 lbs.,(2.3kg) tension
- ✧ Weight: 1.2 grams

Maximum Ratings and Electrical Characteristics

Rating at 25 °C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%

Type Number	Symbol	FR 301	FR 302	FR 303	FR 304	FR 305	FR 306	FR 307	FR 308	FR 309	Units
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	50	100	200	400	600	800	1000	1200	1300	V
Maximum RMS Voltage	V_{RMS}	35	70	140	280	420	560	700	840	910	V
Maximum DC Blocking Voltage	V_{DC}	50	100	200	400	600	800	1000	1200	1300	V
Maximum Average Forward Rectified Current .375"(9.5mm) Lead Length @T_A = 55 °C	$I_{(AV)}$	3.0									A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	150									A
Maximum Instantaneous Forward Voltage @ 3.0A	V_F	1. 2									V
Maximum DC Reverse Current @ T_A=25 °C at Rated DC Blocking Voltage @ T_A=125 °C	I_R	5 150									uA uA
Maximum Reverse Recovery Time (Note 1)	Trr	150				250	500				nS
Typical Junction Capacitance (Note 2)	Cj	60									pF
Typical Thermal resistance (Note 3)	$R_{\theta JA}$	40									°C/W
Operating Temperature Range	T_J	-65 to +150									°C
Storage Temperature Range	T_{STG}	-65 to +150									°C

Notes:
1. Reverse Recovery Test Conditions: I_F=0.5A, I_R=1.0A, I_{RR}=0.25A
2. Measured at 1 MHz and Applied Reverse Voltage of 4.0 Volts D.C.
3. Mount on Cu-Pad Size 16mm x 16mm on P.C.B.

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RATINGS AND CHARACTERISTIC CURVES (FR301 THRU FR309)

FIG.1- MAXIMUM FORWARD CURRENT DERATING CURVE

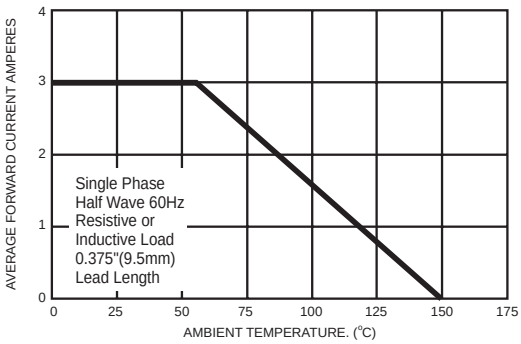

FIG.2- TYPICAL REVERSE CHARACTERISTICS PER LEG

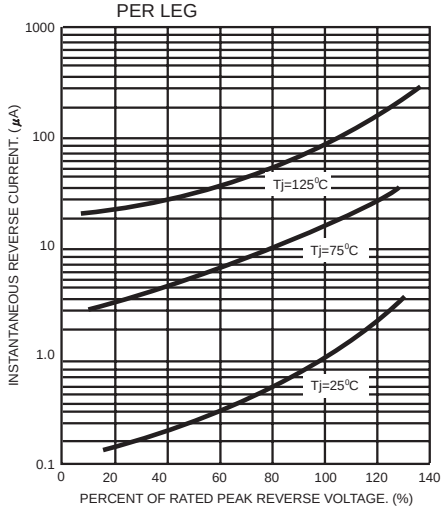

FIG.3- MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

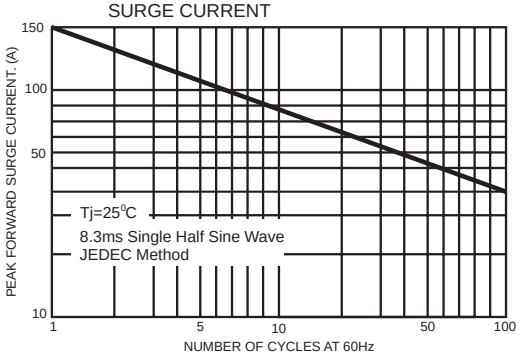

FIG.4- TYPICAL JUNCTION CAPACITANCE

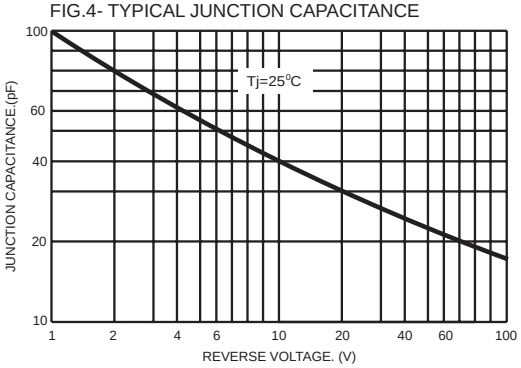

FIG.5- TYPICAL FORWARD CHARACTERISTICS

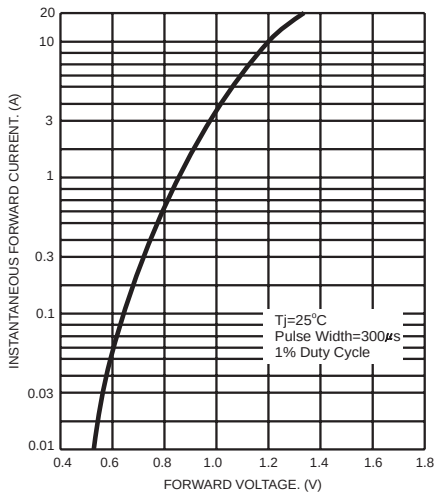

FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM