

FAST RECOVERY RECTIFIER

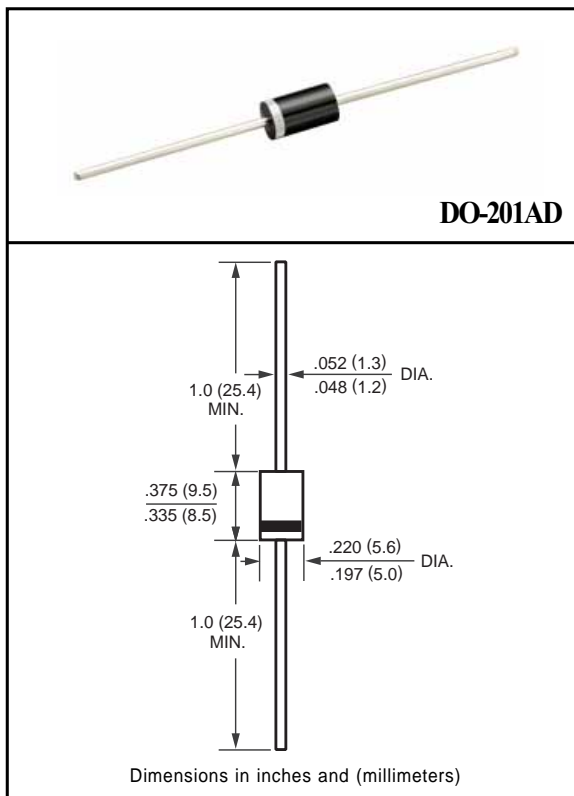
VOLTAGE RANGE 50 to 1000 Volts CURRENT 3.0 Amperes

FEATURES

- * Fast switching
- * Low leakage
- * Low forward voltage drop
- * High current capability
- * High current surge
- * High reliability

MECHANICAL DATA

- * Case: Molded plastic
- * Epoxy: Device has UL flammability classification 94V-O
- * Lead: MIL-STD-202E method 208C guaranteed
- * Mounting position: Any
- * Weight: 1.18 grams



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings 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%.

MAXIMUM RATINGS (At TA = 25°C unless otherwise noted)

RATINGS	SYMBOL	FR301	FR302	FR303	FR304	FR305	FR305P	FR306	FR307	FR307P	UNITS	
Maximum Recurrent Peak Reverse Voltage	VRRM	50	100	200	400	600	600	800	1000	1000	Volts	
Maximum RMS Voltage	VRMS	35	70	140	280	420	420	560	700	700	Volts	
Maximum DC Blocking Voltage	VDC	50	100	200	400	600	600	800	1000	1000	Volts	
Maximum Average Forward Rectified Current at TA= 75°C	Io	3.0										Amps
Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)	IFSM	200										Amps
Typical Junction Capacitance (Note 2)	CJ	65										pF
Operating and Storage Temperature Range	TJ, TSTG	-55 to + 150										°C

ELECTRICAL CHARACTERISTICS (At TA = 25°C unless otherwise noted)

CHARACTERISTICS	SYMBOL	FR301	FR302	FR303	FR304	FR305	FR305P	FR306	FR307	FR307P	UNITS	
Maximum Instantaneous Forward Voltage at 3.0A DC	VF	1.3										Volts
Maximum DC Reverse Current at Rated DC Blocking Voltage TA = 25°C	IR	10										uAmps
Maximum Full Load Reverse Current Average, Full Cycle .375" (9.5mm) lead length at TL = 55°C		150										uAmps
Maximum Reverse Recovery Time (Note 1)	trr	150		250		150		500		250	nSec	

NOTES : 1. Test Conditions: IF = 0.5A, IR = -1.0A, IRR = -0.25A
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts

RATING AND CHARACTERISTIC CURVES (FR301 THRU FR307)

FIG. 1 - TYPICAL FORWARD CURRENT DERATING CURVE

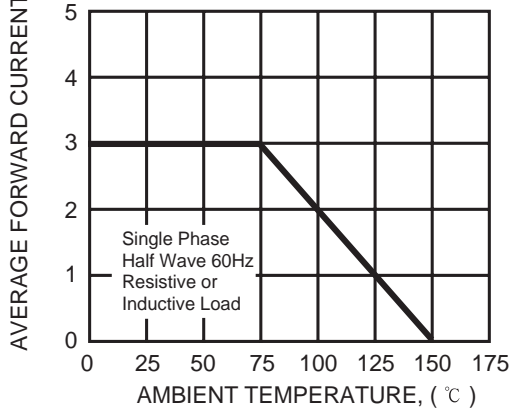


FIG. 2 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

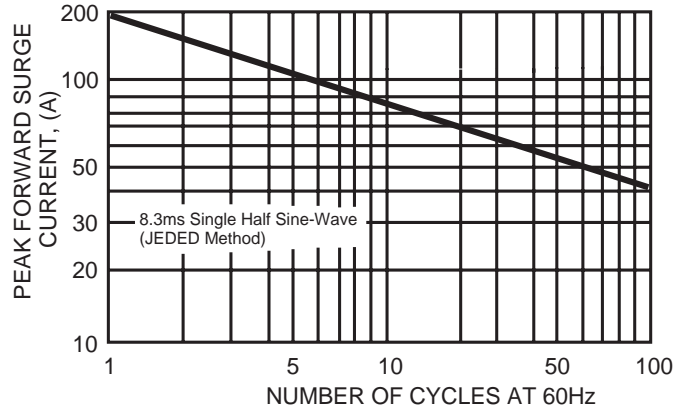


FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

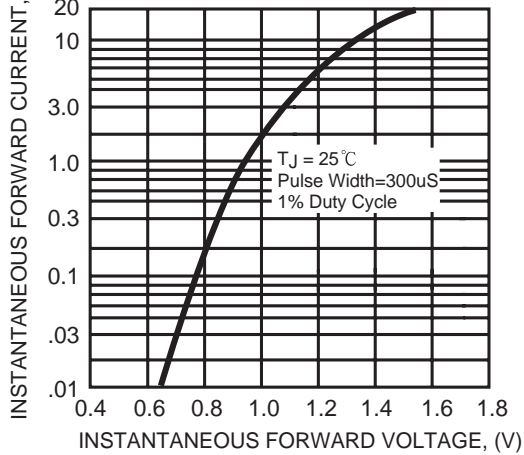


FIG. 4 - TYPICAL JUNCTION CAPACITANCE

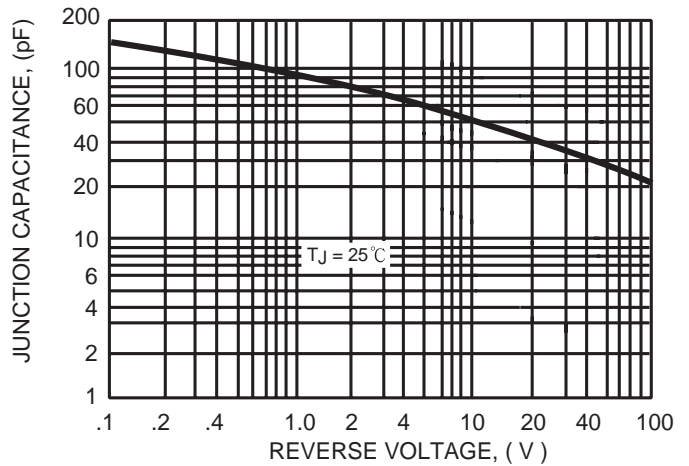
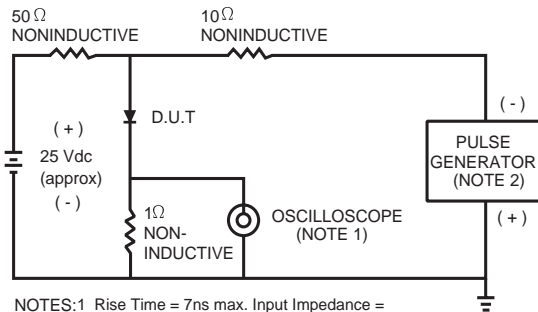


FIG. 5 - TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC



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

