

FR301 THRU FR307

FAST RECOVERY RECTIFIER



康比電子
HORNBY ELECTRONIC

REVERSE VOLTAGE: 50 to 1000 VOLTS

FORWARD CURRENT: 3.0 AMPERE

FEATURES

- High surge current capability
- Void-free Plastic in a DO-201AD package.
- Fast switching for high efficiency
- Low leakage.
- Suffix "H" indicates Halogen-free parts, ex. FR301H.

MECHANICAL DATA

Case : Molded plastic, DO-201AD

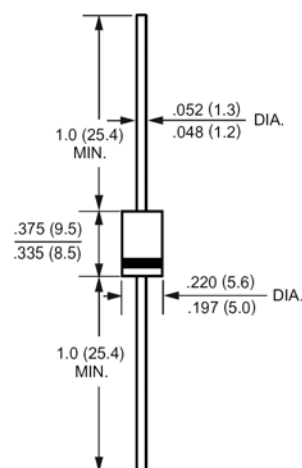
Epoxy : UL 94V-O rate flame retardant

Lead : Axial leads, solderable per MIL-STD-202,
method 208 guaranteed

Polarity : Color band denotes cathode end

Mounting position : Any

DO-201AD



Dimensions in inches and (millimeters)

Maximum Ratings and Electrical Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Single phase, half wave, 60Hz, resistive or inductive load.

For capacitive load, derate current by 20%.

Parameter	Symbols	FR301	FR302	FR303	FR304	FR305	FR306	FR307	Units	
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	50	100	200	400	600	800	1000	Volts	
Maximum RMS Voltage	V_{RMS}	35	70	140	280	420	560	700	Volts	
Maximum DC Blocking Voltage	V_{DC}	50	100	200	400	600	800	1000	Volts	
Maximum Average Forward Rectified Current .375"(9.5mm) Lead Length	$I_{(AV)}$	3.0							Amp	
Peak Forward Surge Current, 8.3ms single half-sine-wave superimposed on rated load (JEDEC method)	I_{FSM}	200.0							Amp	
Maximum Forward Voltage at 3.0A DC and 25°C	V_F	1.3							Volts	
Maximum Reverse Current at $T_A=25^\circ\text{C}$ at Rated DC Blocking Voltage $T_A=100^\circ\text{C}$	I_R	5.0 100							uAmp	
Typical Junction Capacitance (Note 1)	C_J	60							pF	
Typical Thermal Resistance (Note 2)	$R_{\theta JA}$	40.0							°C/W	
Maximum Reverse Recovery Time (Note 3)	T_{RR}	150				250		500		nS
Operating and Storage Temperature Range	T_J, T_{stg}	-65 to +150							°C	

NOTES:

1- Measured at 1 MHz and applied reverse voltage of 4.0 VDC.

2- Thermal Resistance Junction to Ambient and from junction to lead at 0.375"(9.5mm) lead length P.C.B. Mounted with 0.8x0.8" (20x20mm) copper pads

3- Reverse Recovery Test Conditions: $I_F=5A$, $I_R=1A$, $I_{RR}=25A$.

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RATINGS AND CHARACTERISTIC CURVES

FIG. 1- MAXIMUM FORWARD CURRENT DERATING CURVE

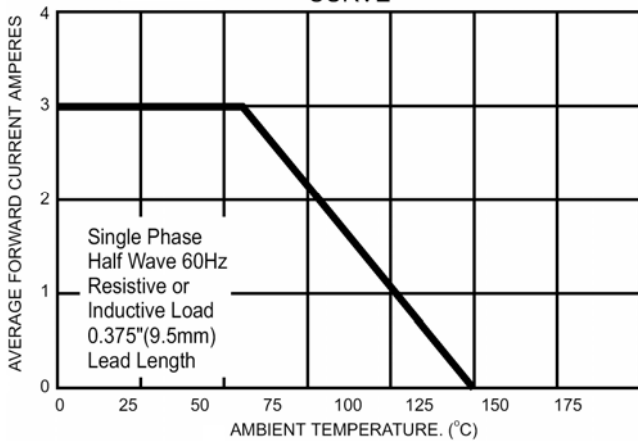


FIG. 2 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

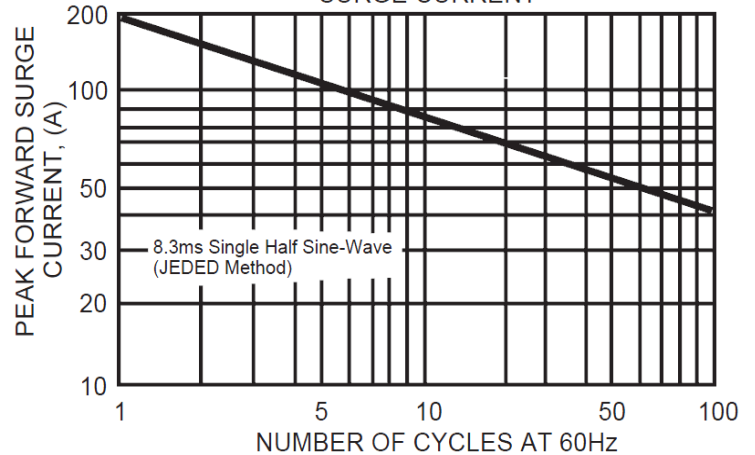


FIG. 3 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

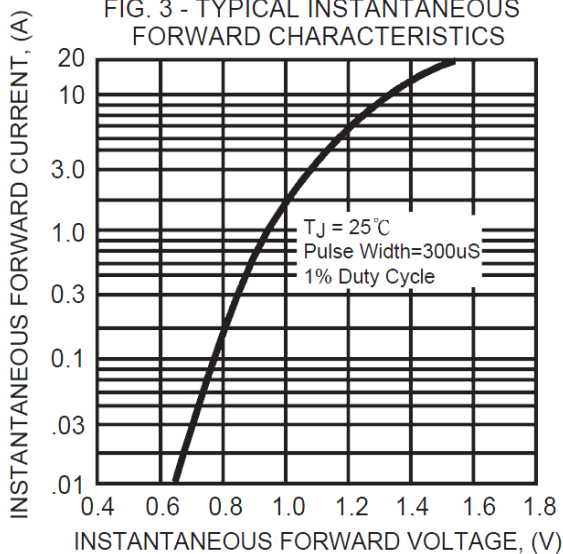


FIG. 4 - TYPICAL JUNCTION CAPACITANCE

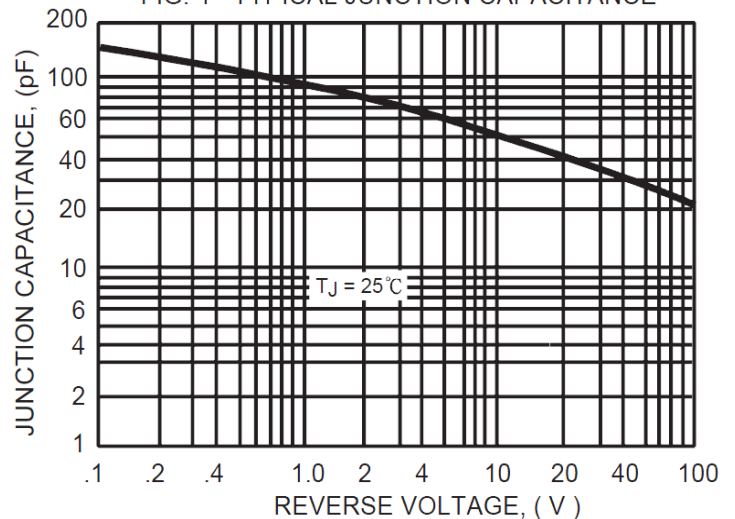
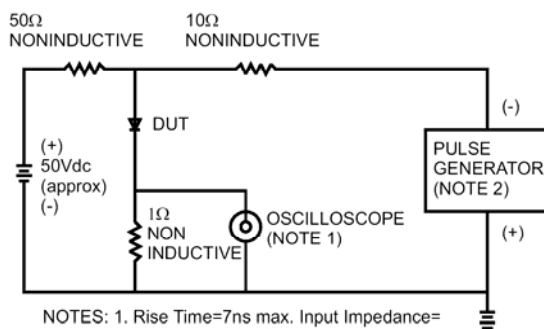


FIG. 5- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



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

