TAIWAN SEMICONDUCTOR

RoHS COMPLIANCE

31DF4 - 31DF6

3.0 AMPS. Super Fast Rectifiers

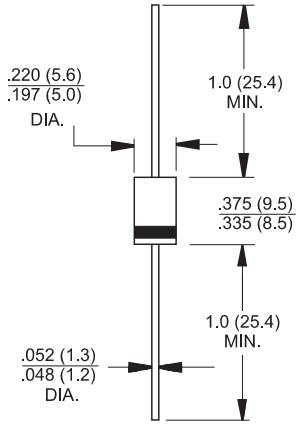
DO-201AD

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
- ✧ Lead: Pure tin plated, Lead free., solderable per MIL-STD-202, Method 208 guaranteed
- ✧ 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



Dimensions in inches and (millimeters)

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	31DF4	31DF6	Units
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	400	600	V
Maximum RMS Voltage	V_{RMS}	280	420	V
Maximum DC Blocking Voltage	V_{DC}	400	600	V
Maximum Average Forward Rectified Current .375 (9.5mm) Lead Length @T_A = 29°C (Note 1) @T_L = 109°C	$I_{(AV)}$	1.2 3.0		A
Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	45		A
Maximum Instantaneous Forward Voltage @ 3.0A	V_F	1.7		V
Maximum DC Reverse Current @ T_A=25°C at Rated DC Blocking Voltage @ T_A=125°C	I_R	20 100		uA
Maximum Reverse Recovery Time (Note 3)	Trr	35		nS
Typical Thermal Resistance (Note 2)	$R_{\theta JA}$	80		°C/W
Operating Temperature Range	T_J	-40 to +150		°C
Storage Temperature Range	T_{STG}	-40 to +150		°C

Notes: 1. Without Fin or P.C.Board..
2. Thermal Resistance from Junction to Ambient .375" (9.5mm) Lead Length.
3. Reverse recovery Test Condition: Ta = 25℃, IFM=3A, di/dt = 50A / Us.

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RATINGS AND CHARACTERISTIC CURVES (31DF4 THRU 31DF6)

FIG.1- MAXIMUM FORWARD CURRENT DERATING CURVE

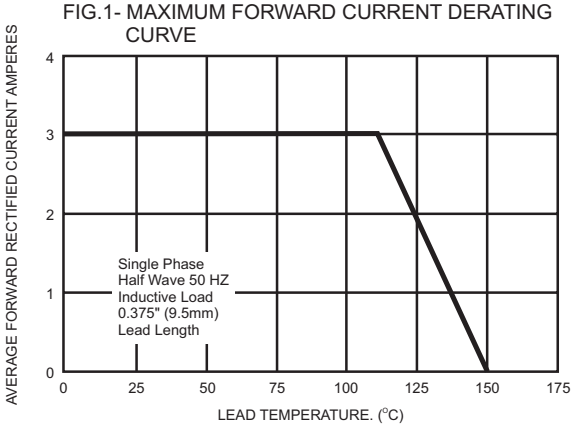


FIG.2- TYPICAL FORWARD CHARACTERISTICS

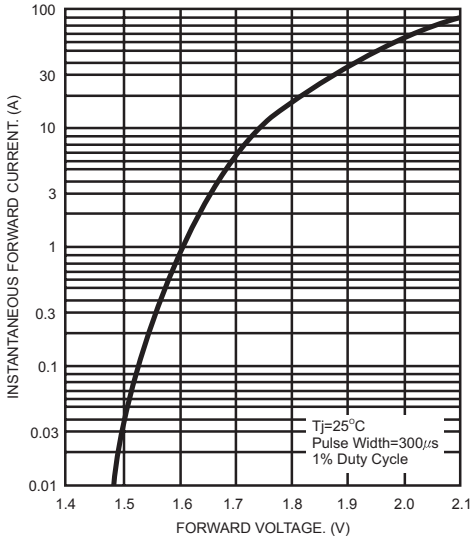


FIG.3- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

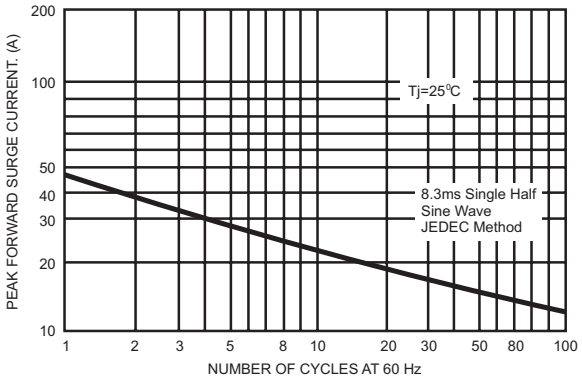


FIG.4- TYPICAL REVERSE CHARACTERISTICS

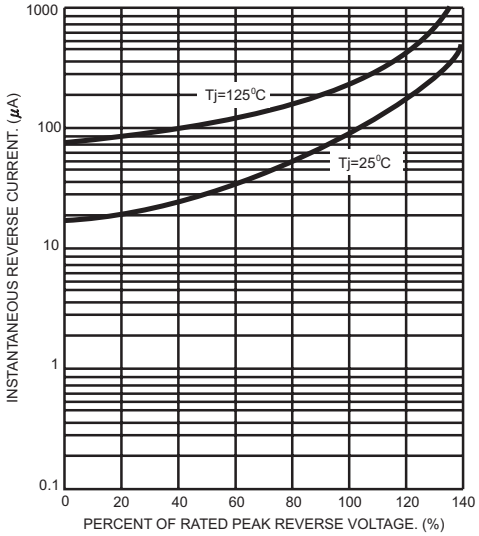


FIG.5- TYPICAL JUNCTION CAPACITANCE

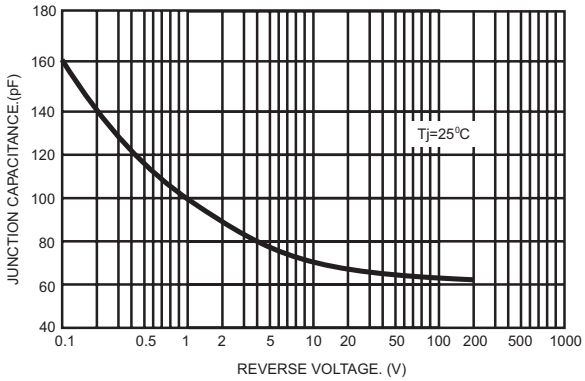
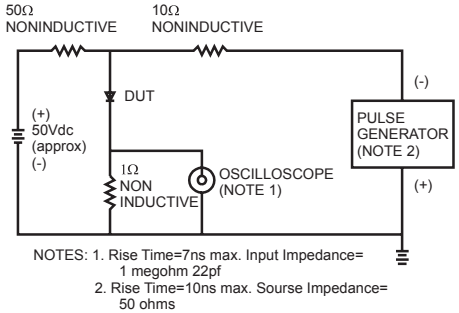
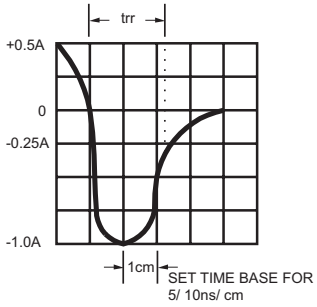


FIG.6- REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM





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