Diode
Ultra Fast

RoHS Compliant

Features:

- High efficiency, low V_F
- High current capability
- High reliability
- High surge current capability
- Low power loss

Specifications:

Mechanical Data:

Cases	: Moulded plastic
Lead	: Pure tin plated, lead free, solderable per MIL-STD-202, Method 208 guaranteed
Polarity	: Colour band denotes cathode end
High temperature soldering guaranteed	: 260°C/10 seconds/0.375", (9.5mm) lead lengths at 5lbs., (2.3kg) tension
Weight	: 1.2g

Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.
Single phase, half wave, 60Hz, 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	
Maximum DC Blocking Voltage	V_{DC}	400	600	
Maximum Average Forward Rectified Current 0.375 (9.5mm) Lead Length at T_A = 29°C (Note 1) T_L = 109°C	$I_{(AV)}$	1.2 3		A
Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	45		
Maximum Instantaneous Forward Voltage at 3A	V_F	1.7		V
Maximum DC Reverse Current at T_A = 25°C at Rated DC Blocking Voltage at T_A = 125°C	I_R	20 100		µA

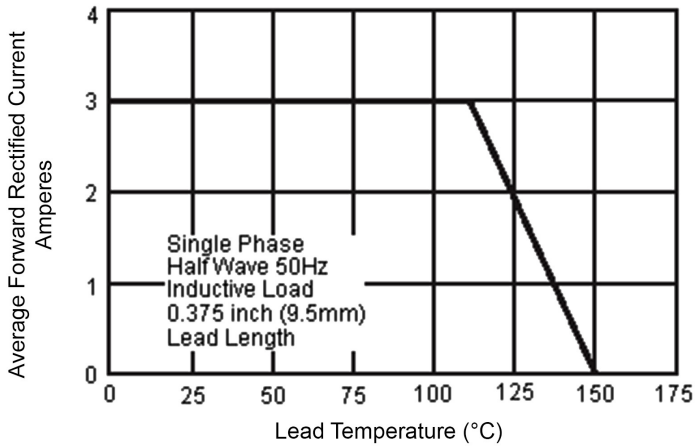
Note 1. Without Fin or PC Board.

Type Number	Symbol	31DF4	31DF6	Units
Maximum Reverse Recovery Time (Note 3)	T_{rr}	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}			

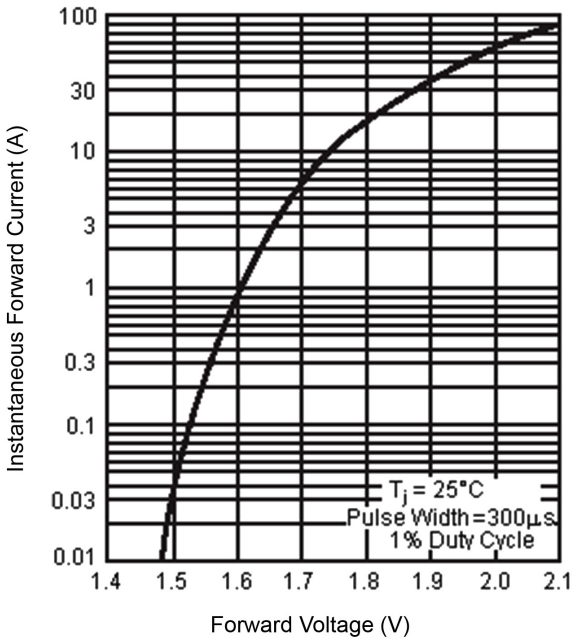
Note 2. Thermal Resistance from Junction to Ambient 0.375" (9.5mm) Lead Length.
Note 3. Reverse recovery Test Condition: T_A = 25°C, I_{FM} = 3A, di/dt = 50A/Us.

Ratings and Characteristic Curves (31DF4, 31DF6)

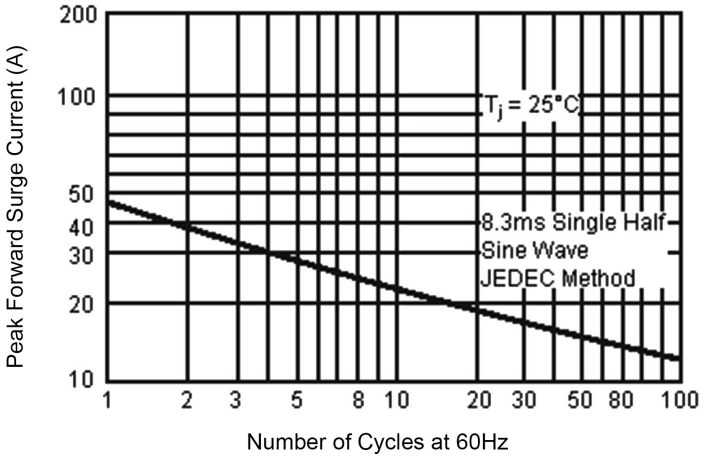
Maximum Forward Current Derating Curve



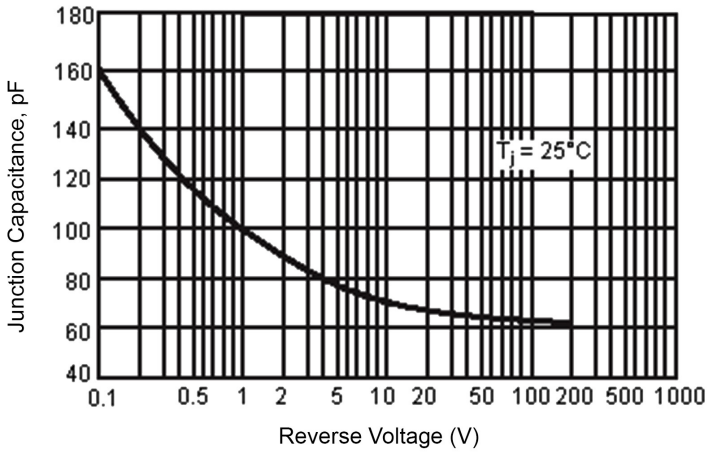
Typical Forward Characteristics



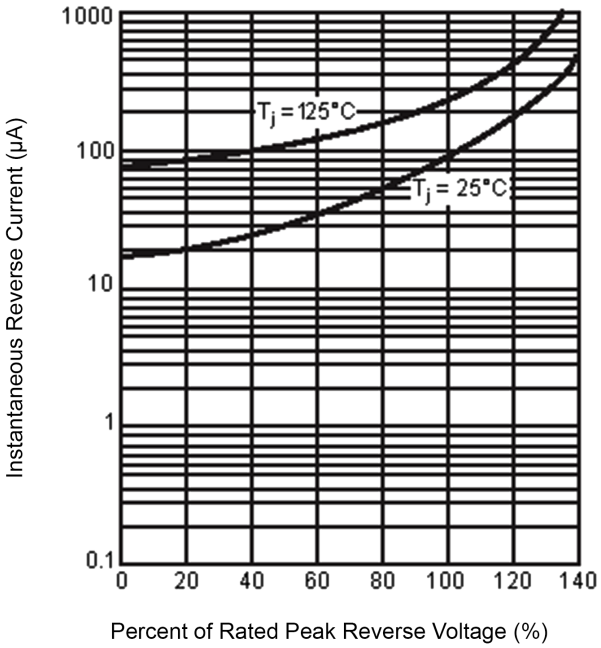
Maximum Non-Repetitive Forward Surge Current



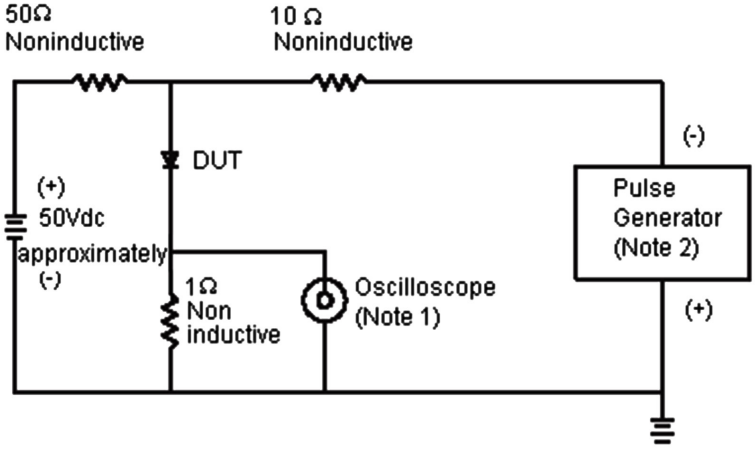
Typical Junction Capacitance

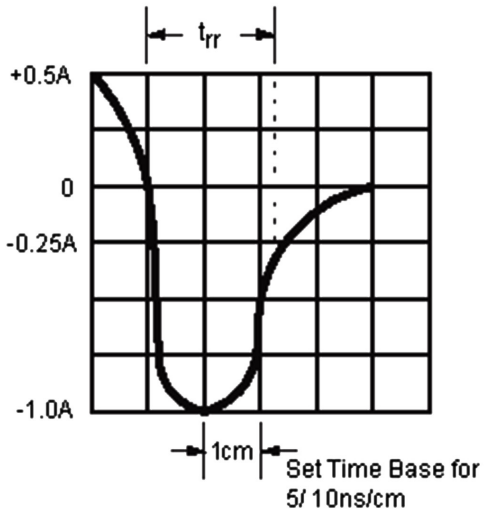


Typical Reverse Characteristics



Reverse Recovery Time Characteristic and Test Circuit Diagram





Note: 1. Rise Time = 7ns Maximum. Input Impedance = 1MΩ 22pf
Note: 2. Rise Time = 10ns Maximum Source Impedance = 50Ω

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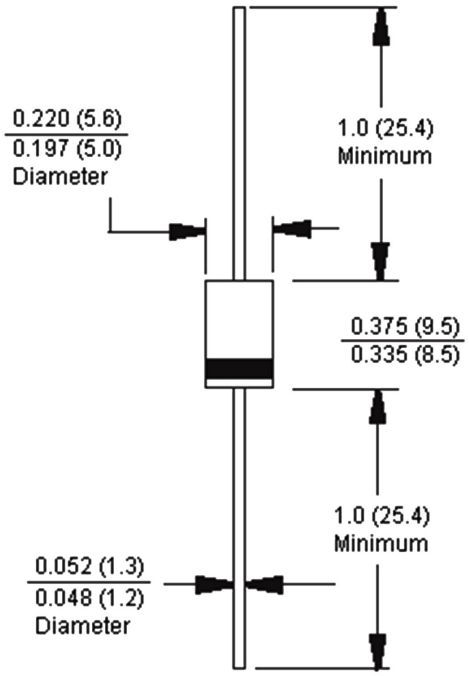

Dimensions : Inches (Millimetres)

Part Number Table

Description	Part Number
Diode, Ultra-Fast, 3A, 400V	31DF4
Diode, Ultra-Fast, 3A, 600V	31DF6