Ultra Fast Diode

RoHS Compliant

Features:

- High efficiency, low VF
- High current capability
- High reliability
- High surge current capability
- Low power loss
- For use in low voltage, high frequency inventor, free wheeling, and polarity protection application

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 inch, (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%.

Parameters	Symbol	SF32	SF34	SF36	SF37	SF38	Units
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	100	200	400	500	600	V
Maximum RMS Voltage	V_{RMS}	70	140	280	350	420	
Maximum DC Blocking Voltage	V_{DC}	100	200	400	500	600	
Maximum Average Forward Rectified Current 0.375 inch (9.5mm) Lead Length at T_A = 55°C	$I_{(AV)}$	3					A
Peak Forward Surge Current, 8.3ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method)	I_{FSM}	125					
Maximum Instantaneous Forward Voltage at 3A	V_F	0.95		1.3		1.7	V

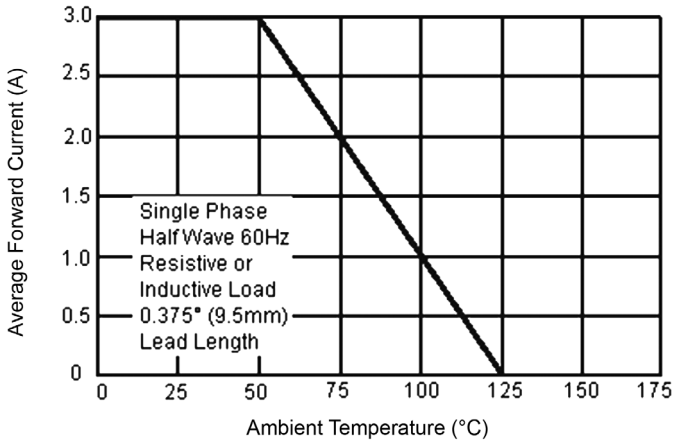
Parameters	Symbol	SF32	SF34	SF36	SF37	SF38	Units
Maximum DC Reverse Current at T_A = 25°C at Rated DC Blocking Voltage at T_A = 100°C	I_R	5 100					µA µA
Maximum Reverse Recovery Time (Note 1)	T_{rr}	35					nS
Typical Junction Capacitance (Note 2)	C_j	80		70			pF
Typical Thermal Resistance	$R_{\theta JA}$	35					°C/W
Operating Temperature Range	T_J	-65 to +125					°C
Storage Temperature Range	T_{STG}	-65 to +150					

Notes

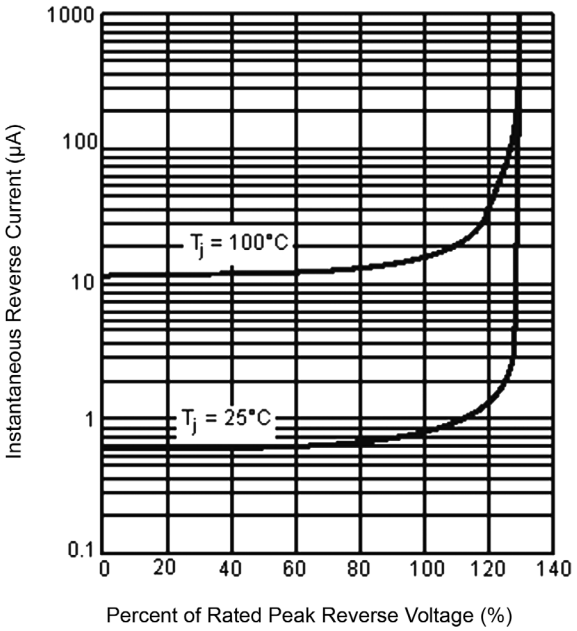
1. Reverse Recovery Test Conditions: I_F = 0.5A, I_R = 1A, I_{RR} = 0.25A.
2. Measured at 1MHz and Applied Reverse Voltage of 4V DC.
3. Mount on Cu-Pad Size 16mm × 16mm on PCB.

Ratings and Characteristic Curves

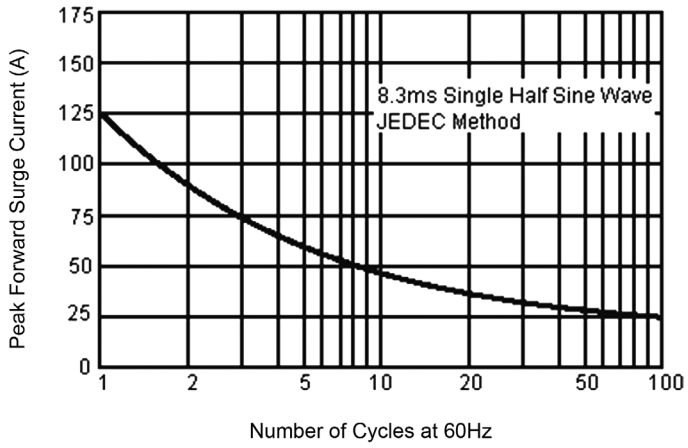
Maximum Forward Current Derating Curve



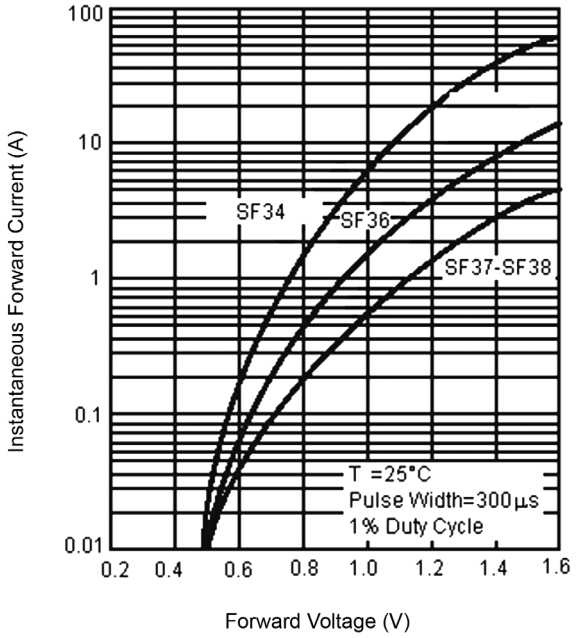
Typical Reverse Characteristics



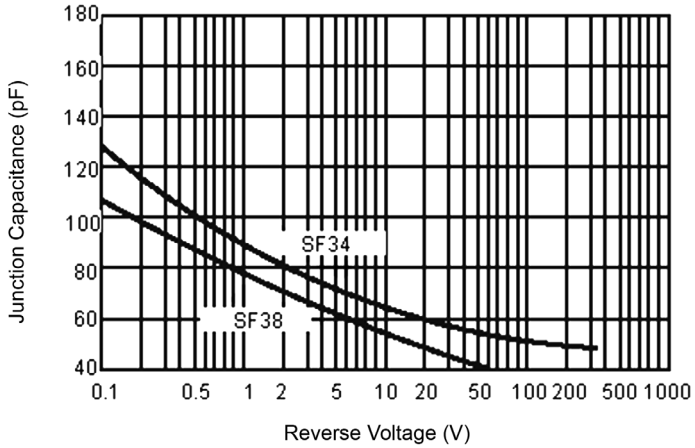
Maximum Non-Repetitive Forward Surge Current



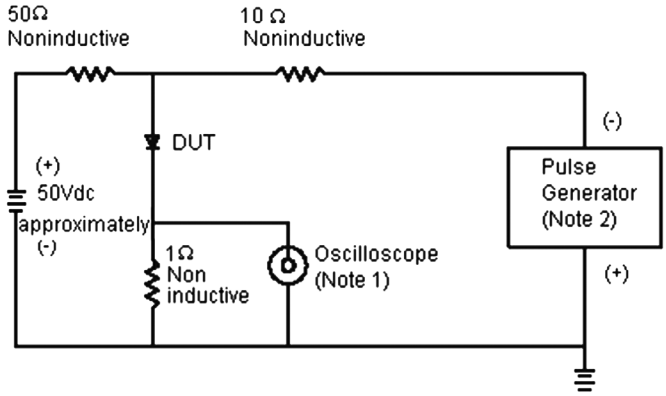
Typical Forward Characteristics

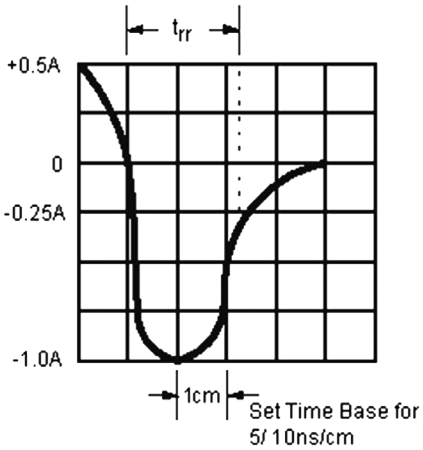


Typical Junction Capacitance



Reverse Recovery Time Characteristic and Test Circuit Diagram





Notes:

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

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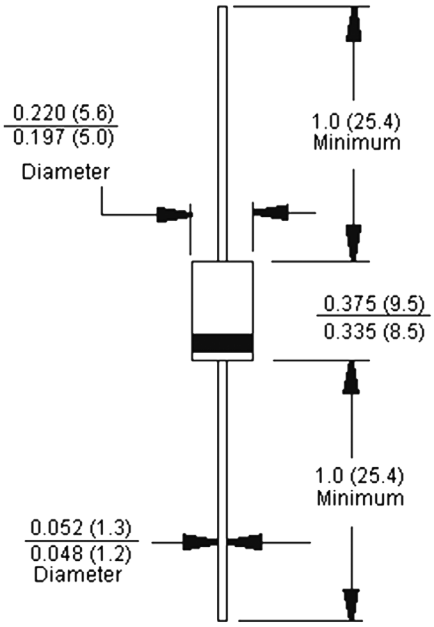

Dimensions : Inches (Millimetres)

Part Number Table

Description	Part Number
Diode, Ultra-Fast, 3A, 100V	SF32
Diode, Ultra-Fast, 3A, 200V	SF34
Diode, Ultra-Fast, 3A, 400V	SF36
Diode, Ultra-Fast, 3A, 500V	SF37
Diode, Ultra-Fast, 3A, 600V	SF38