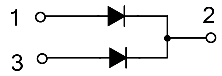
16A, 400V SUPER-FAST RECOVERY RECTIFIER

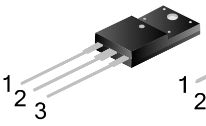
GENERAL DESCRIPTION

SFR16S40T/F is a Super-Fast Recovery Diode, fabricated in advanced silicon planar epitaxial technology. The process parameter and the device structure are fine tuned with optimized performance of forward voltage drop and reverse recovery time.

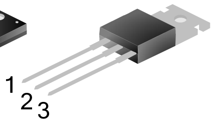
Accuracy epitaxial dope control, advanced planar junction terminal structure and the platinum doped life control, guarantee the best overall performance, ruggedness and reliability characteristics.

SFR16S40T/F is intended for use in the output rectification stage of SMPS, UPS, DC-DC converters as well as free-wheeling diode in low voltage inverters and chopper motor drivers.





TO-220F-3L

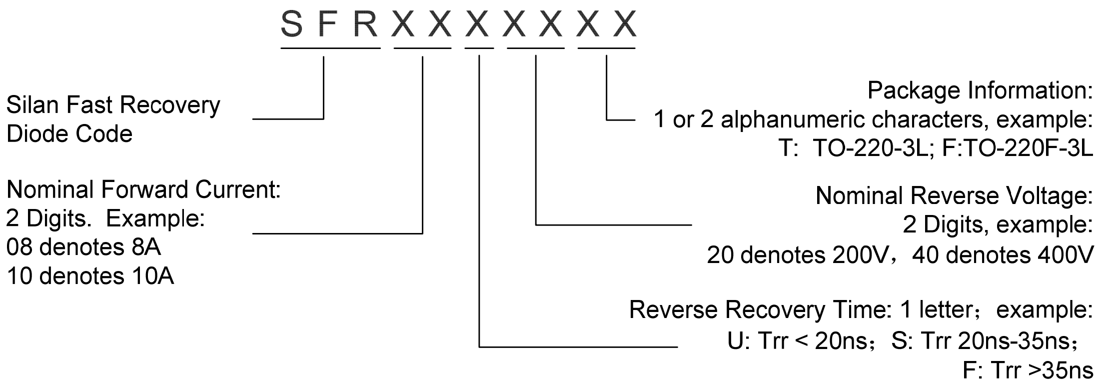


TO-220-3L

FEATURES

- Ultrafast 35 Nanosecond Recovery Time
- Low Forward Voltage Drop
- Low Leakage Current
- 175 °C Operating Junction Temperature

NOMENCLATURE



Silan Fast Recovery
Diode Code

Nominal Forward Current:
2 Digits. Example:
08 denotes 8A
10 denotes 10A

Package Information:
1 or 2 alphanumeric characters, example:
T: TO-220-3L; F:TO-220F-3L

Nominal Reverse Voltage:
2 Digits, example:
20 denotes 200V，40 denotes 400V

Reverse Recovery Time: 1 letter；example:
U: Trr < 20ns；S: Trr 20ns-35ns；
F: Trr >35ns

ORDERING INFORMATION

Part No.	Package	Marking	Material	Packing
SFR16S40T	TO-220-3L	SFR16S40T	Pb free	Tube
SFR16S40F	TO-220F-3L	SFR16S40F	Pb free	Tube

ABSOLUTE MAXIMUM RATINGS

Characteristics	Symbol	Ratings	Unit
Peak Repetitive Reverse Voltage	V_{RRM}	400	V
Average Rectified Forward Cuttent Per Leg Total Device	$I_{F(AV)}$	8.0 16	A
Non Repetitive Peak Surge Current Per Leg	I_{FSM}	100	A
Operation Junction Temperature	T_J	-40～+175	°C
Storage Temperature	T_{stg}	-65～+175	°C

THERMAL CHARACTERISTICS(Per Leg)

Characteristics	Symbol	Ratings	Unit
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	3.0	°C/W

ELECTRICAL CHARACTERISTICS(Per Leg)

Characteristics	Symbol	Min.	Typ.	Max.	Unit
Maximum Instantaneous Forward Voltage (Note 1) (I_F=8.0 Amps, Tc=150°C) (I_F=8.0 Amps, Tc=25°C)	V_F	--	--	1.03 1.25	V
Maximum Instantaneous Reverse Current(Note 1) (Rated dc Voltage, Tc=150°C) (Rated dc Voltage, Tc=25°C)	I_R	--	--	250 5.0	μA
Maximum Reverse Recovery Time (I_F=1.0 Amp, di/dt=50Amps/μS) (I_F=0.5 Amp, I_R=1.0Amp, I_{REC}=0.25Amp)	t_{rr}	--	--	35 25	ns

Notes:

1. Pulse Test: Pulse Width=300μS, Duty Cycle≤2.0%

TYPICAL CHARACTERISTICS

Figure 1. Instantaneous reverse leakage current vs. Percent of rated peak reverse voltage

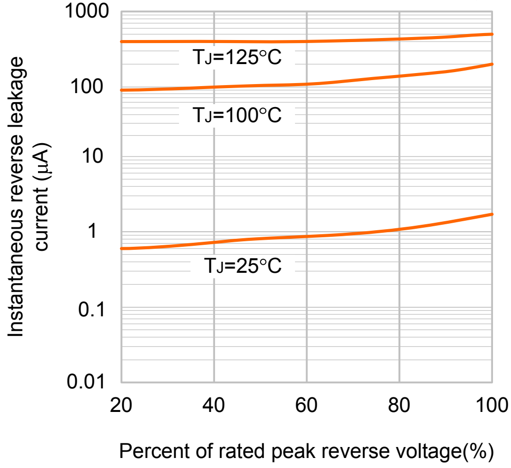


Figure 2. Junction capacitance vs. Reverse voltage

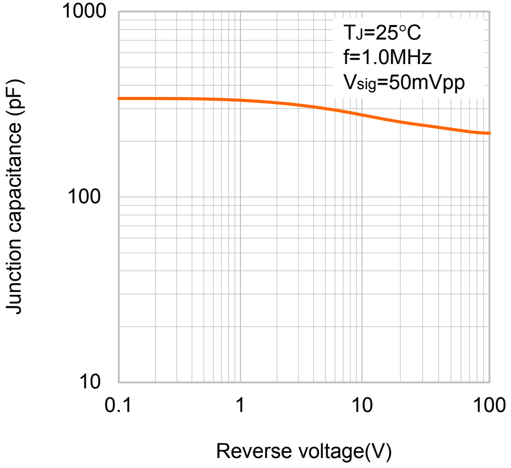
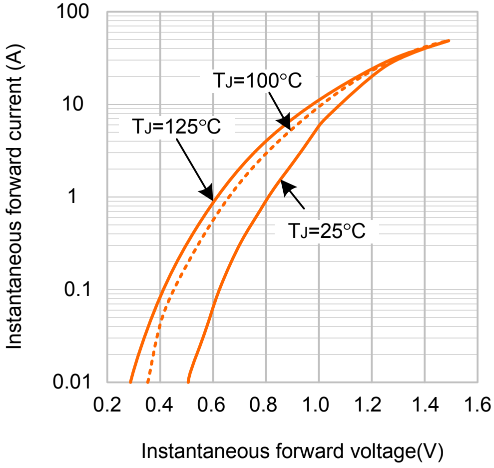


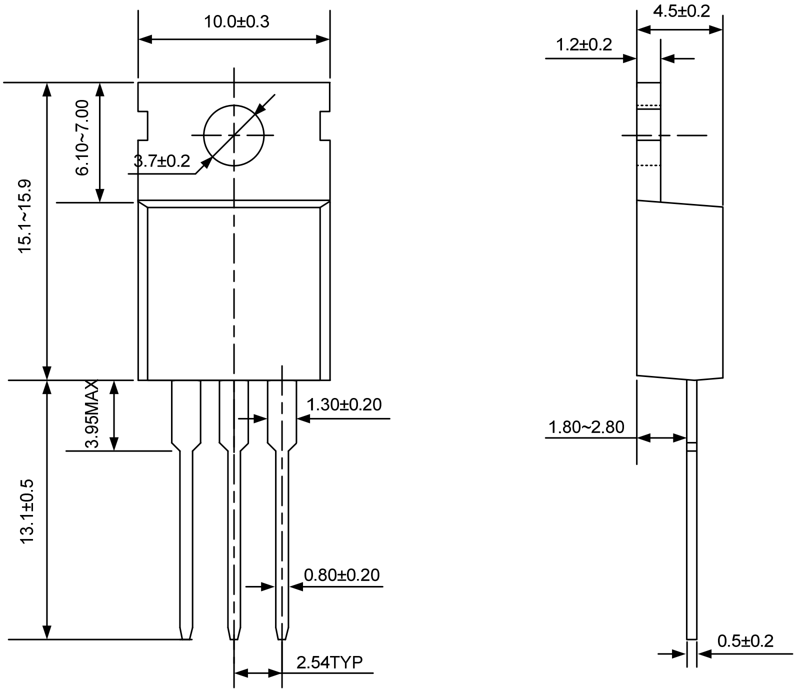
Figure 3. Instantaneous forward current vs. Instantaneous forward voltage



PACKAGE OUTLINE

TO-220-3L

UNIT: mm



TO-220F-3L

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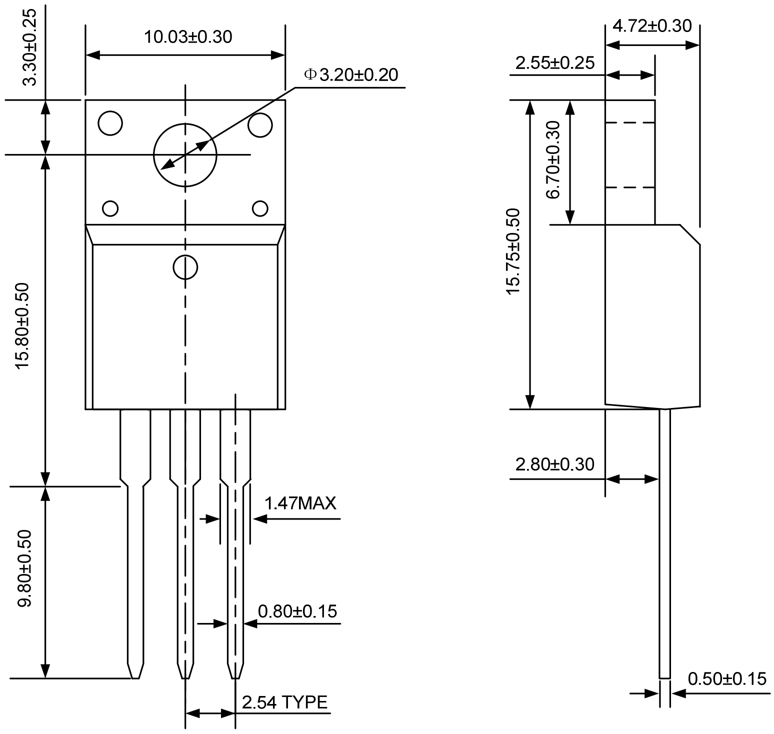

Disclaimer:

ATTACHMENT

Revision History

Date	REV	Description	Page
2011.04.28	1.0	Original	