

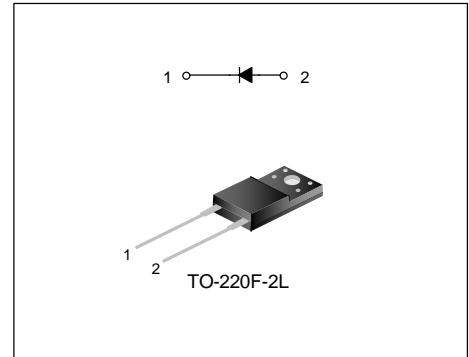
35A, 600V SUPER-FAST RECOVERY RECTIFIER

GENERAL DESCRIPTION

SFR35F60F2 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.

This device 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.



FEATURES

- ♦ Ultrafast 60 Nanosecond Recovery Time
- ♦ High Current Capability
- ♦ Low Forward Voltage Drop
- ♦ High surge current capability
- ♦ Low reverse current leakage
- ♦ 175°C Operating Junction Temperature

ORDERING INFORMATION

Part No.	Package	Marking	Hazardous Substance Control	Packing Type
SFR35F60F2	TO-220F-2L	35F60F2	Pb free	Tube

ABSOLUTE MAXIMUM RATINGS

Characteristics	Symbol	Rating	Unit
Peak Repetitive Reverse Voltage	V_{RRM}	600	V
Average Rectified Forward Current	$I_{F(AV)}$	35	A
Peak Forward Surge Current @8.3ms	I_{FSM}	200	A
Power Dissipation($T_C=25^{\circ}C$)	P_D	230	W
Single avalanche energy	EAS	100	mJ
Operation Junction Temperature Range	T_J	-40~+175	$^{\circ}C$
Storage Temperature Range	T_{stg}	-40~+175	$^{\circ}C$

THERMAL CHARACTERISTICS (PER LEG)

Characteristics	Symbol	Min.	Typ.	Max.	Unit
Thermal Resistance, Junction-to-Case	$R_{\theta JC}$	--	--	3.5	$^{\circ}C/W$

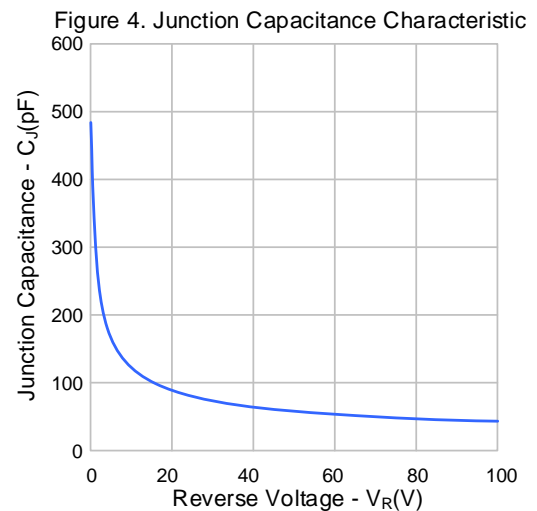
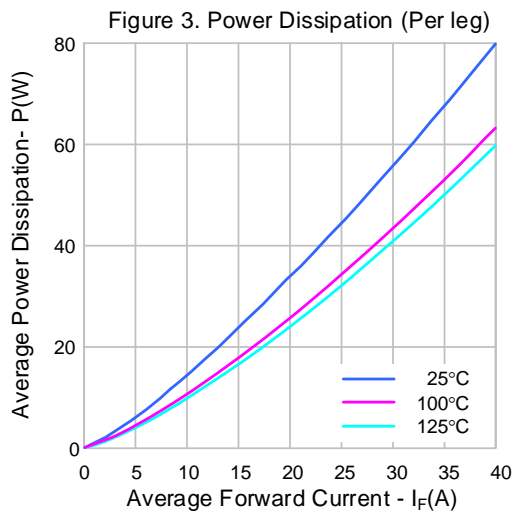
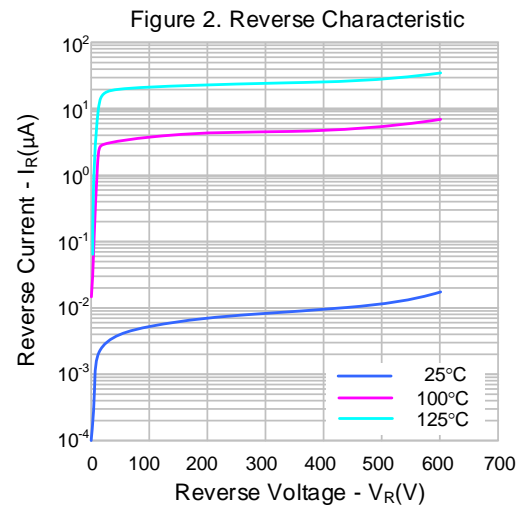
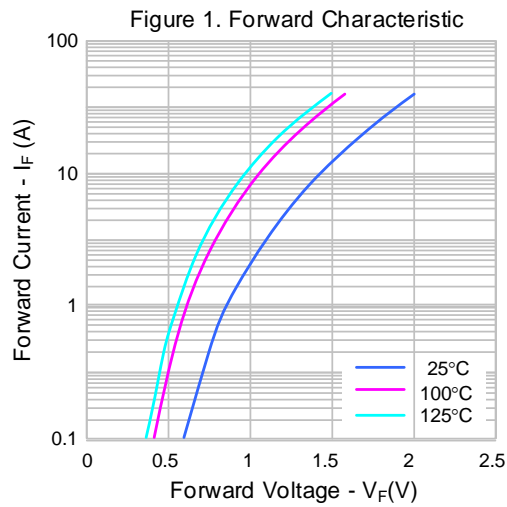
ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Conditions	Min.	Typ.	Max.	Unit
Maximum Forward Voltage	V_F	$I_F=30.0Amps, T_C=25^{\circ}C$	--	1.80	2.55	V
		$I_F=35.0Amps, T_C=25^{\circ}C$	--	1.85	2.60	V
		$I_F=30.0Amps, T_C=125^{\circ}C$	--	1.40	2.05	V
		$I_F=35.0Amps, T_C=125^{\circ}C$	--	1.45	2.2	V
Maximum Instantaneous Reverse Current	I_R	$V_R=600V, T_C=25^{\circ}C$	--	--	5.0	μA
		$V_R=600V, T_C=125^{\circ}C$	--	--	500	μA

SWITCH CHARACTERISTIC

Characteristics	Symbol	Conditions	Min.	Typ.	Max.	Unit
Reverse Recovery Time	T_{RR}	$I_F=1A, dI_F/dt=100A/\mu s, V_R=30V$	--	30	--	ns
		$I_F=30A, dI_F/dt=100A/\mu s, V_R=30V$	--	32	--	ns
Reverse Recovery Time	T_{RR}	$I_F=30A, dI_F/dt=200A/\mu s, V_R=390V, T_C=25^{\circ}C$	--	60	--	ns
Reverse Recovery Current	I_{RRM}		--	3.2	--	A
Reverse Recovery Charge	Q_{RR}		--	90	--	nC

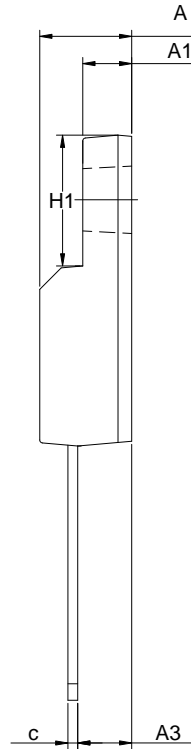
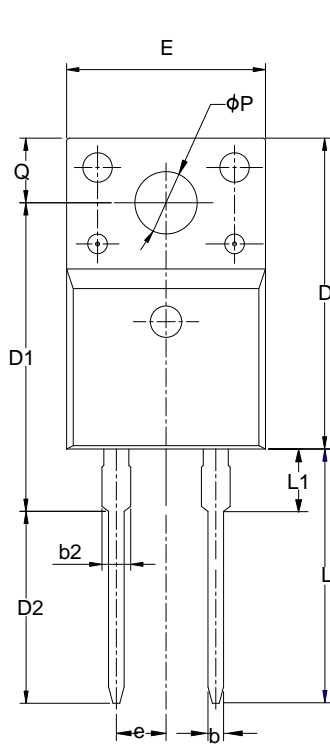
TYPICAL CHARACTERISTICS



PACKAGE OUTLINE

TO-220F-2L

UNIT: mm



SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	4.42	4.70	5.02
A1	2.30	2.54	2.80
A3	2.50	2.76	3.10
b	0.70	0.80	0.90
b2	—	—	1.47
c	0.35	0.50	0.65
D	15.25	15.87	16.25
D1	15.30	15.75	16.30
D2	9.30	9.80	10.30
E	9.73	10.16	10.36
e	2.54BCS		
H1	6.40	6.68	7.00
L	12.48	12.98	13.48
L1	—	—	3.50
ϕP	3.00	3.18	3.40
Q	3.05	3.30	3.55



MOS DEVICES OPERATE NOTES:

Electrostatic charges may exist in many things. Please take following preventive measures to prevent effectively the MOS electric circuit as a result of the damage which is caused by discharge:

- The operator must put on wrist strap which should be earthed to against electrostatic.
- Equipment cases should be earthed.
- All tools used during assembly, including soldering tools and solder baths, must be earthed.
- MOS devices should be packed in antistatic/conductive containers for transportation.

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1. Silan reserves the right to make changes of this instruction without notice.
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Rev.: 1.2

Revision History:

1. Modify the parameter
 2. Update the important notice
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Rev.: 1.1

Revision History:

1. Update maximum junction temperature and storage temperature
 2. Modify the important notice
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Rev.: 1.0

Revision History:

1. First release
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