

80A, 400V ULTRA-FAST RECOVERY RECTIFIER

GENERAL DESCRIPTION

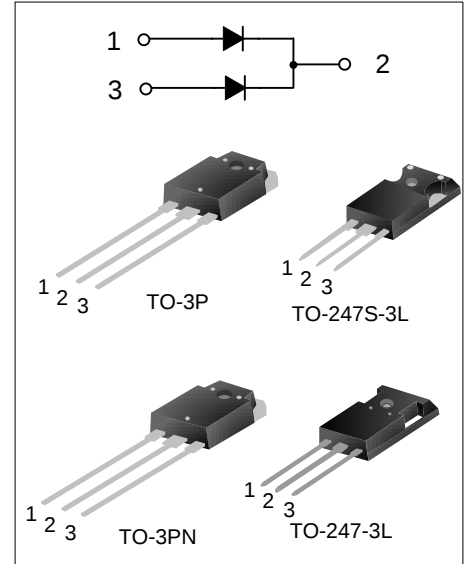
SFR80F40PN/PS/P7/PT is an Ultra-Fast Recovery Diode, fabricated in advanced silicon planar epitaxial technology. The process parameter and the device structure are fine tuned with optimized performance of forward voltage drop and reverse recovery time.

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

SFR80F40N 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
- ♦ Low Forward Voltage Drop
- ♦ Low Leakage Current
- ♦ 150°C Operating Junction Temperature



ORDERING INFORMATION

Part No.	Package	Marking	Hazardous Substance Control	Packing Type
SFR80F40PN	TO-3P	80F40	Pb free	Tube
SFR80F40PS	TO-247S-3L	80F40	Pb free	Tube
SFR80F40P7	TO-247-3L	80F40	Pb free	Tube
SFR80F40P7	TO-3PN	80F40	Pb free	Tube

ABSOLUTE MAXIMUM RATINGS

Characteristics		Symbol	Rating	Unit
Peak Repetitive Reverse Voltage		V_{RRM}	400	V
Average Rectified Forward Current ($T_C=110^{\circ}\text{C}$)	Per Leg	$I_{F(AV)}$	40	A
	Total Device		80	
Non Repetitive Peak Surge Current	Per Leg	I_{FSM}	400	A
Operation Junction Temperature Range		T_J	$-40\sim+150$	$^{\circ}\text{C}$
Storage Temperature Range		T_{stg}	$-40\sim+150$	$^{\circ}\text{C}$

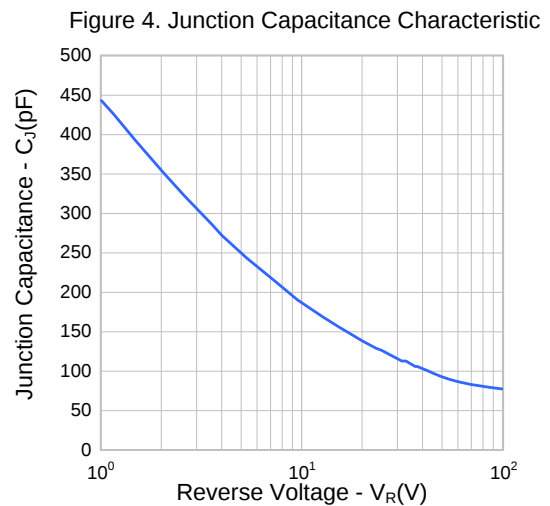
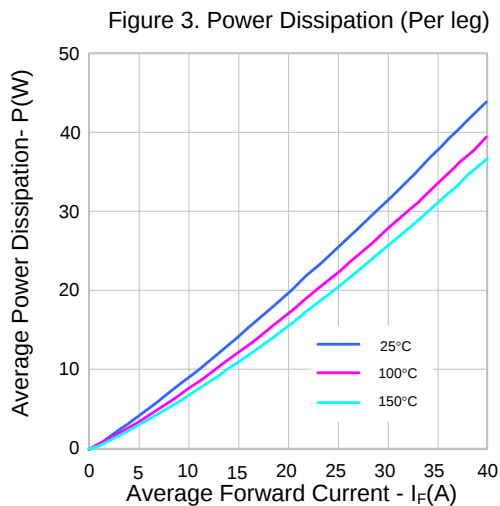
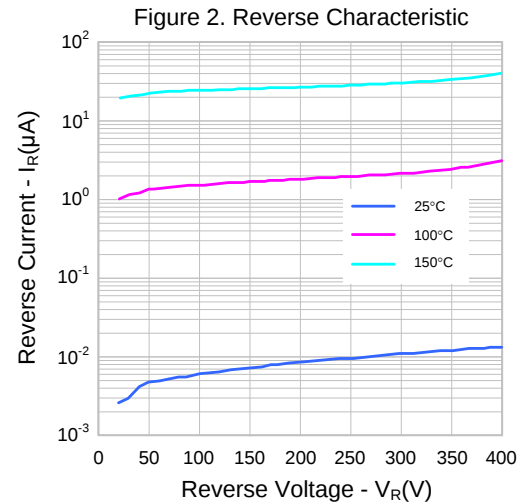
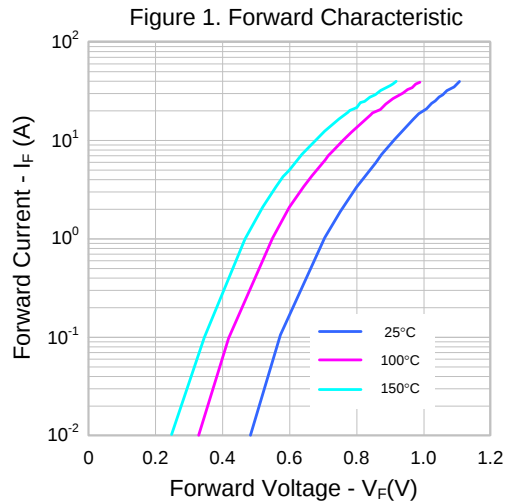
THERMAL CHARACTERISTICS (Per Leg)

Characteristics	Symbol	Rating	Unit
Thermal Resistance, Junction-to-Case(TO-3P)	$R_{\theta JC}$	0.8	$^{\circ}\text{C/W}$

ELECTRICAL CHARACTERISTICS (Per Leg)

Characteristics		Symbol	Min.	Typ.	Max.	Unit
Maximum Instantaneous Forward Voltage	$I_F=40.0\text{ Amps}, T_C=25^{\circ}\text{C}$	V_F	--	--	1.85	V
	$I_F=40.0\text{ Amps}, T_C=125^{\circ}\text{C}$		--	--	1.5	
Maximum Instantaneous Reverse Current	Rated dc Voltage, $T_C=25^{\circ}\text{C}$	I_R	--	--	10	μA
	Rated dc Voltage, $T_C=125^{\circ}\text{C}$		--	--	150	
Maximum Reverse Recovery Time ($I_F=0.5\text{ Amp}, I_R=1.0\text{ Amp}, I_{REC}=0.25\text{ Amp}$)		t_{rr}	--	--	60	ns

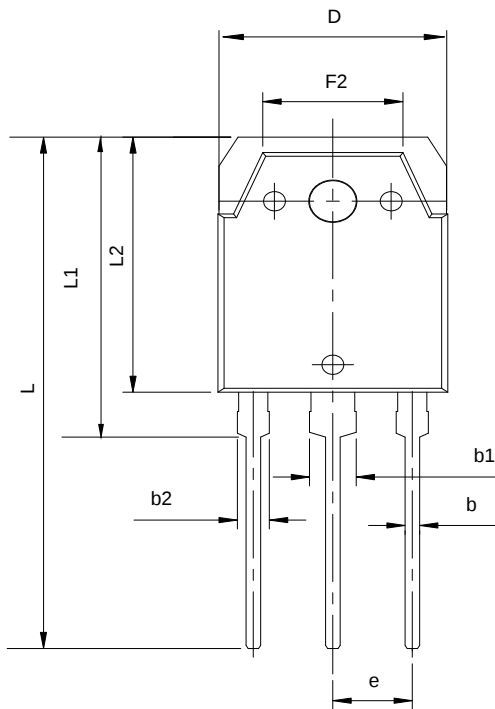
TYPICAL CHARACTERISTICS



PACKAGE OUTLINE

TO-3P

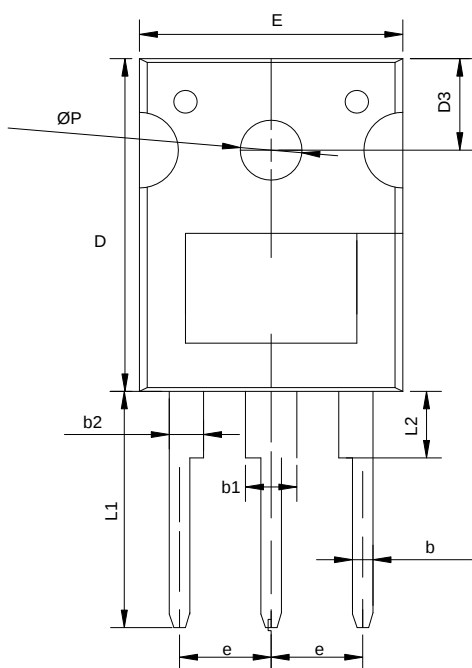
UNIT: mm



SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	4.4	—	5.2
c1	1.2	—	1.8
A1	1.2	—	2.0
b	0.7	1.0	1.3
b1	2.7	3.0	3.3
b2	1.7	2.0	2.3
D	15.0	15.5	16.0
c	0.4	0.6	0.8
F2	8.5	—	10.0
e	5.45 TYP		
L1	22.6	—	23.6
L	39.0	—	41.5
L2	19.5	—	21.0
P	3.0	—	3.4

TO-247S-3L

UNIT: mm

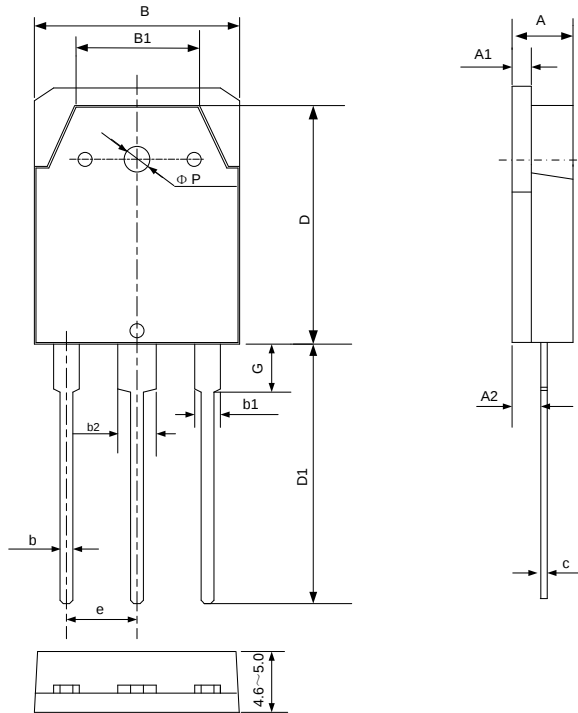


SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	4.80	5.00	5.20
A1	2.30	2.50	2.70
b	1.10	1.20	1.30
b1	2.90	3.10	3.30
b2	1.90	2.10	2.30
c2	5.50	6.00	6.50
c3	4.95	5.10	5.25
D	19.00	20.00	21.00
D3	5.30	5.50	5.70
e	5.34	5.44	5.54
E	15.40	15.60	15.80
L1	14.40	14.60	14.80
L2	3.85	4.00	4.15
L3	0.35	0.50	0.65
ØP	3.40	3.60	3.80

PACKAGE OUTLINE(CONTINUED)

TO-3PN

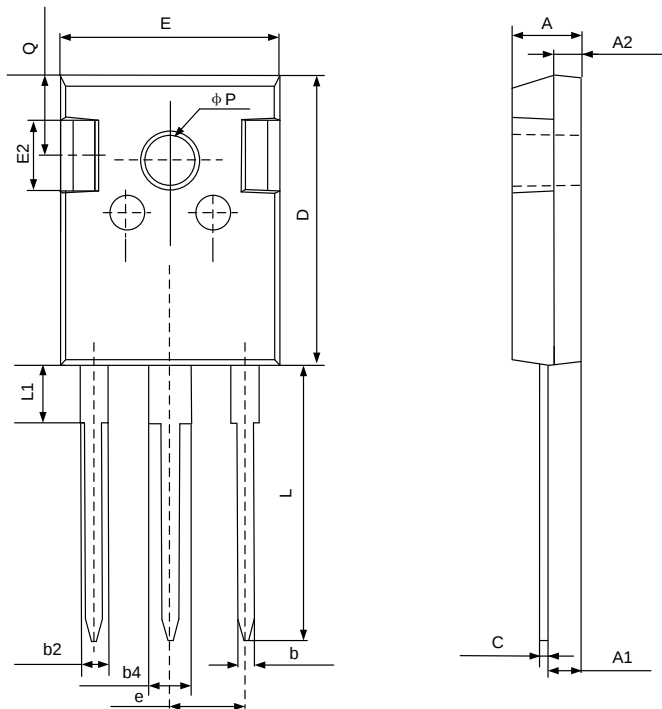
UNIT: mm



SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	4.60	4.80	5.00
A1	1.30	1.50	1.70
A2	2.20	2.40	2.60
b	0.80	1.00	1.20
b1	1.80	2.00	2.20
b2	2.90	3.10	3.30
B	15.20	15.60	16.00
B1	9.10	9.30	9.50
c	0.50	0.60	0.70
D	18.30	18.50	18.70
D1	19.00	19.50	20.00
e	5.25	5.45	5.65
G	2.80	3.00	3.20
ΦP	3.00	3.20	3.40

TO-247-3L

UNIT: mm



SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	4.80	5.00	5.20
A1	2.21	2.41	2.59
A2	1.85	2.00	2.15
b	1.11	—	1.36
b2	1.91	—	2.25
b4	2.91	—	3.25
c	0.51	—	0.75
D	20.80	21.00	21.30
E	15.50	15.80	16.10
E2	4.40	5.00	5.20
e	5.44 BSC		
L	19.72	19.92	20.22
L1	—	—	4.30
Q	5.60	5.80	6.00
P	3.40	—	3.80

Important notice :

1. The instructions are subject to change without notice!
2. Customers should obtain the latest relevant information before placing orders and should verify that such information is complete and current. Please read the instructions carefully before using our products, including the circuit operation precautions.
3. Our products are consumer electronic products or the other civil electronic products.
4. When using our products, please do not exceed the maximum rating of the products, otherwise the reliability of the whole machine will be affected. There is a certain possibility of failure or malfunction of any semiconductor product under specific conditions. The buyer is responsible for complying with safety standards and taking safety measures when using our products for system design, sample and whole machine manufacturing, so as to avoid potential failure risk that may cause personal injury or property loss.
5. It is strongly recommended to identify the trademark when buying our products. Please contact us if there is any question.
6. Product promotion is endless, our company will wholeheartedly provide customers with better products!
7. Website: <http://www.silan.com.cn>

Part No.:	SFR80F40PN/PS/P7/PT	Document Type:	Datasheet
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Rev.: 1.6

Revision History:

1. Add SFR80F40PT (TO-3PN) package
 2. Delete the naming convention
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Rev.: 1.5

Revision History:

1. Add the package outline of TO-247-3L
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Rev.: 1.4

Revision History:

1. Delete the package outline of TO-247-3L
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Rev.: 1.3

Revision History:

1. Update package outline of TO-247S-3L(1.1version)
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Rev.: 1.2

Revision History:

1. Add the package information of TO-247S-3L
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Rev.: 1.1

Revision History:

1. Add the package information of TO-247-3L
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Rev.: 1.0

Revision History:

1. First release
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