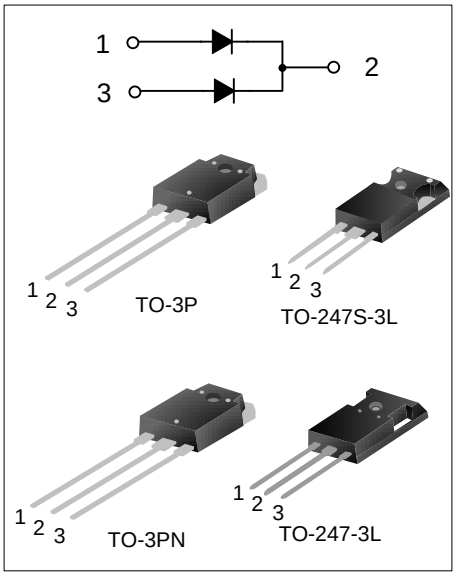
80A, 400V ULTRA-FAST RECOVERY RECTIFIER

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 Cuttent (T_C=110°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～+150	°C
Storage Temperature Range		T_{stg}	-40～+150	°C

THERMAL CHARACTERISTICS (Per Leg)

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

ELECTRICAL CHARACTERISTICS (Per Leg)

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

TYPICAL CHARACTERISTICS

Figure 1. Forward Characteristic

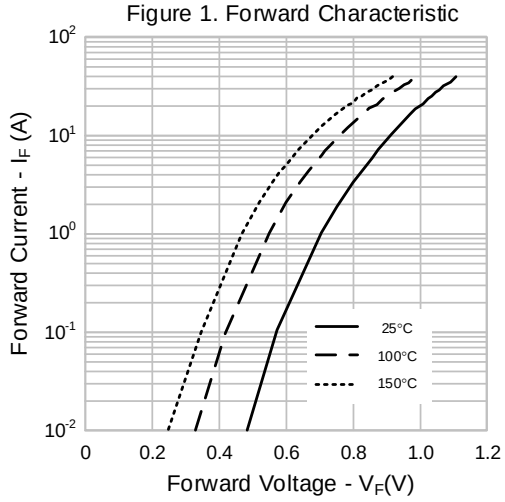


Figure 2. Reverse Characteristic

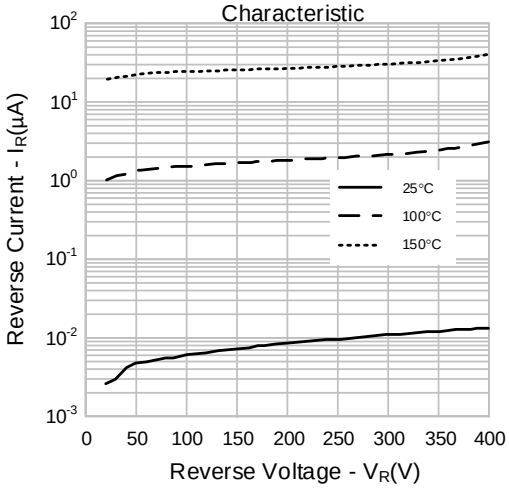


Figure 3. Power Dissipation (Per leg)

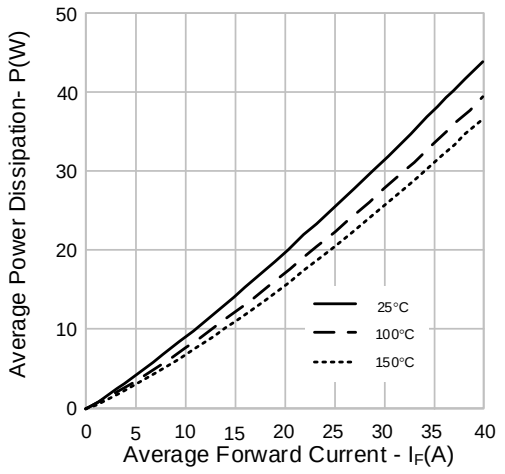
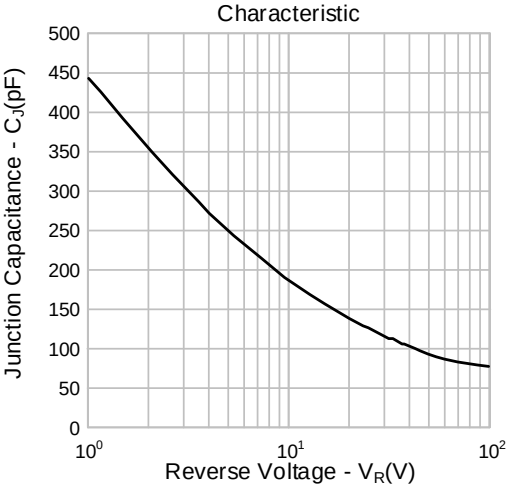
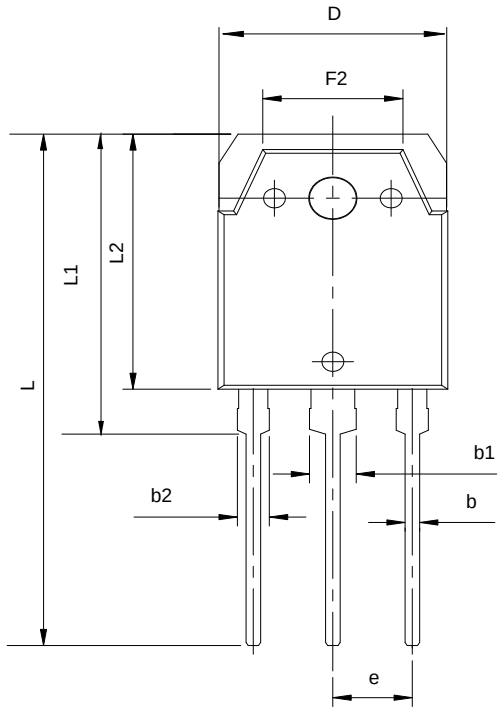


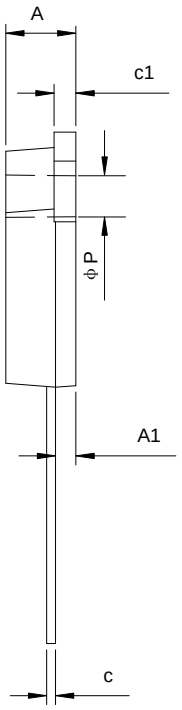
Figure 4. Junction Capacitance Characteristic



PACKAGE OUTLINE

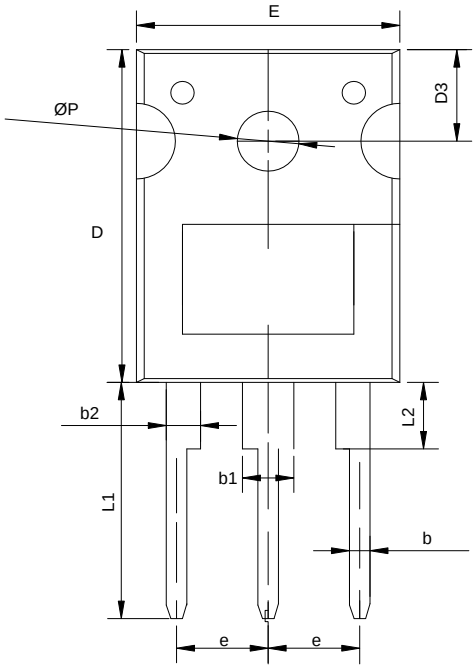
TO-3P **UNIT: mm**

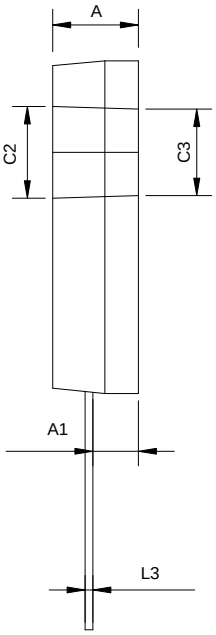




SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	4.4	—	5.2
c1	1.2	—	1.8
A1	1.2	—	2.0
b	0.7	1.0	1.3
b1	2.7	3.0	3.3
b2	1.7	2.0	2.3
D	15.0	15.5	16.0
c	0.4	0.6	0.8
F2	8.5	—	10.0
e	5.45 TYP		
L1	22.6	—	23.6
L	39.0	—	41.5
L2	19.5	—	21.0
P	3.0	—	3.4

TO-247S-3L **UNIT: mm**

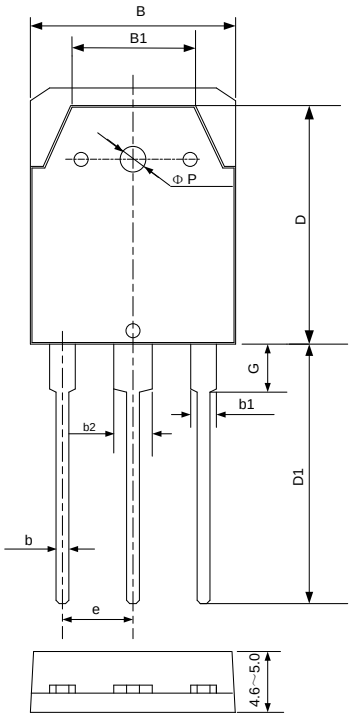




SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	4.80	5.00	5.20
A1	2.30	2.50	2.70
b	1.10	1.20	1.30
b1	2.90	3.10	3.30
b2	1.90	2.10	2.30
c2	5.50	6.00	6.50
c3	4.95	5.10	5.25
D	19.00	20.00	21.00
D3	5.30	5.50	5.70
e	5.34	5.44	5.54
E	15.40	15.60	15.80
L1	14.40	14.60	14.80
L2	3.85	4.00	4.15
L3	0.35	0.50	0.65
ØP	3.40	3.60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

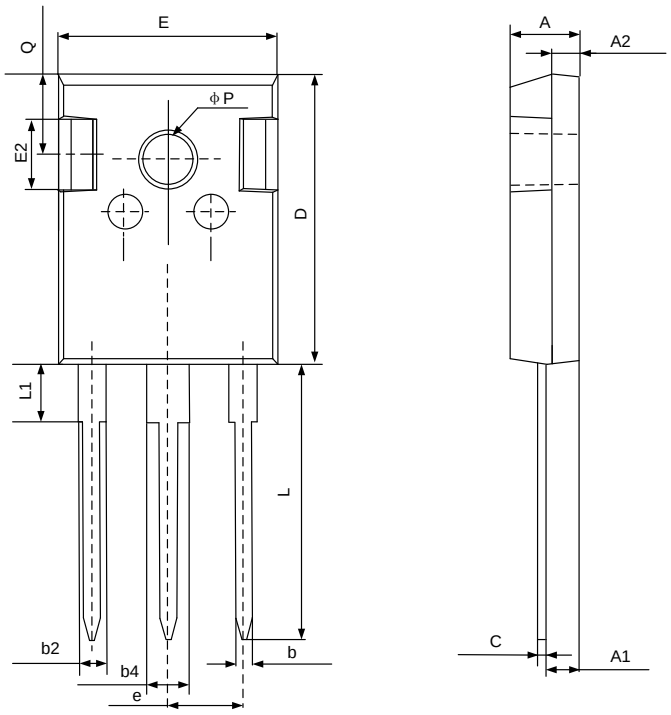
PACKAGE OUTLINE(CONTINUED)

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
ØP	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

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Rev.: 1.6

Revision History:

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

Rev.: 1.5

Revision History:

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

Rev.: 1.4

Revision History:

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

Rev.: 1.3

Revision History:

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

Rev.: 1.2

Revision History:

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

Rev.: 1.1

Revision History:

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

Rev.: 1.0

Revision History:

1. First release