

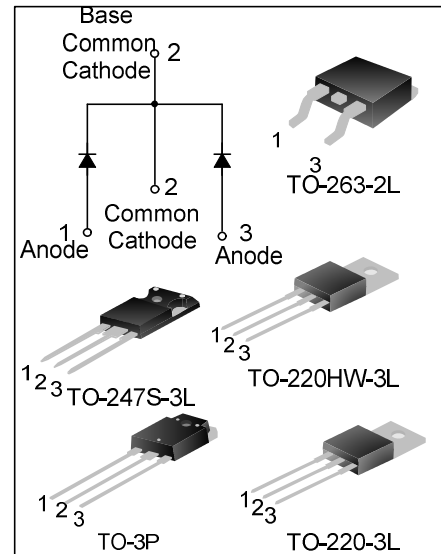
30A, 45V SCHOTTKY RECTIFIER

DESCRIPTION

SBD30C45T/PN/S/PS is Schottky rectifier fabricated in silicon epitaxial planar technology, and is widely used in switching power supplies, protection circuits, etc.

FEATURES

- ◆ Guard ring for Stress Protection
- ◆ High Current Surge Capacity
- ◆ Low power loss, high efficiency
- ◆ Low Forward Voltage Drop



ORDERING INFORMATION

Part No.	Package	Marking	Hazardous Substance Control	Packing
SBD30C45T	TO-220-3L	SBD30C45T	Pb free	Tube
SBD30C45PN	TO-3P	30C45	Pb free	Tube
SBD30C45S	TO-263-2L	SBD30C45S	Halogen free	Tube
SBD30C45STR	TO-263-2L	SBD30C45S	Halogen free	Tape & Reel
SBD30C45T	TO-220HW-3L	SBD30C45T	Pb free	Tube
SBD30C45PS	TO-247S-3L	30C45	Pb free	Tube

ABSOLUTE MAXIMUM RATINGS (T_c=25°C unless otherwise noted)

Characteristics	Symbol	Ratings	Unit
Maximum Repetitive Peak Reverse Voltage	V _{RRM}	45	V
Average Forward Rectified Current	I _{FAV}	30	A
Peak Forward Surge Current@8.3ms	I _{FSM}	200	A
Operation Junction Temperature Range(Note 1)	T _J	-55~150	°C
Storage Temperature Range	T _{STG}	-55~150	°C

Note 1: $\frac{dP_{tot}}{dT_J} < \frac{1}{R_{th(j-a)}}$ Condition to avoid thermal runaway for a diode on its own heatsink

THERMAL CHARACTERISTICS

Characteristic	Symbol	Value	Unit
Thermal Resistance, Junction-to-Case(TO-220-3L\TO-220HW-3L)	R _{θJC}	2.0	°C/W

ELECTRICAL CHARACTERISTICS

Characteristics	Symbol	Test Condition	Min.	Max.	Unit
Forward Voltage	V_F	$I_F=15A(T_C=25^{\circ}C)$	--	0.70	V
		$I_F=15A(T_C=125^{\circ}C)$	--	0.65	V
Reverse Leakage Current	I_R	$V_R=45V(T_C=25^{\circ}C)$	--	100	μA
		$V_R=45V(T_C=125^{\circ}C)$	--	35	mA

TYPICAL CHARACTERISTIC CURVE

Figure1. Typical forward characteristics

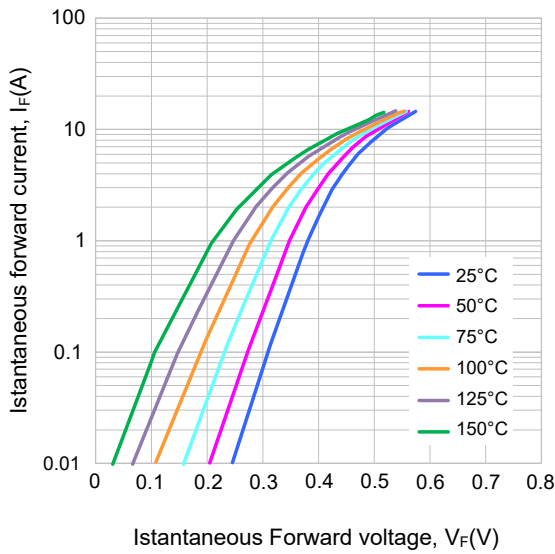


Figure2. Typical reverse characteristics

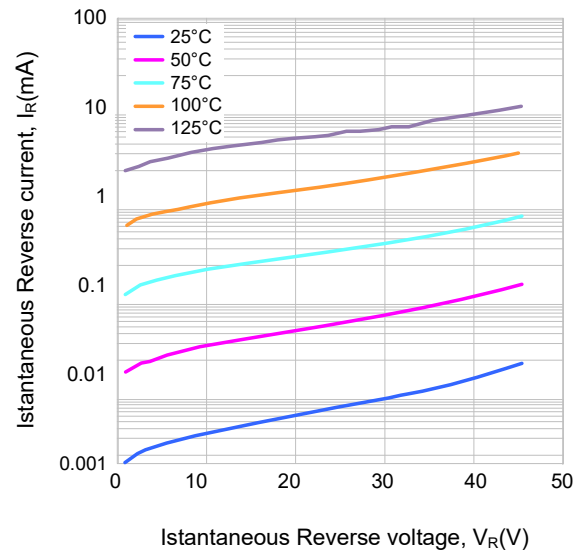


Figure3. Capacitance characteristics

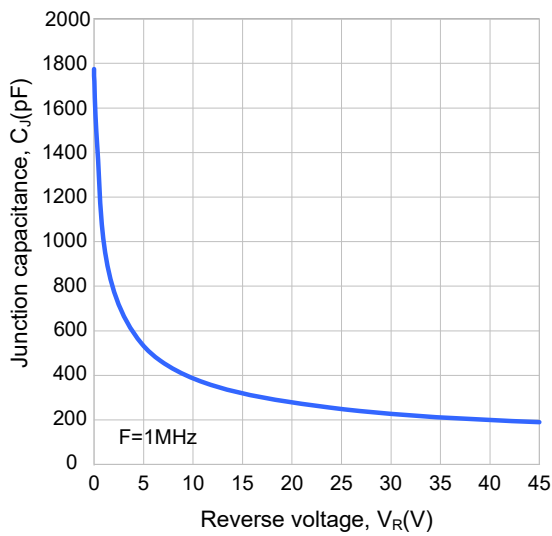
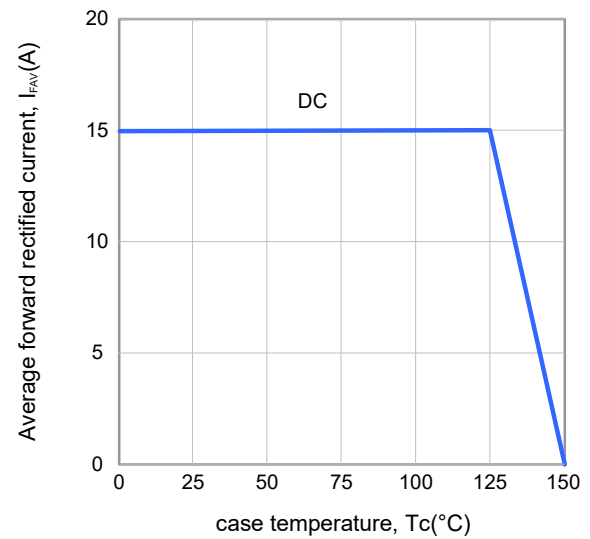


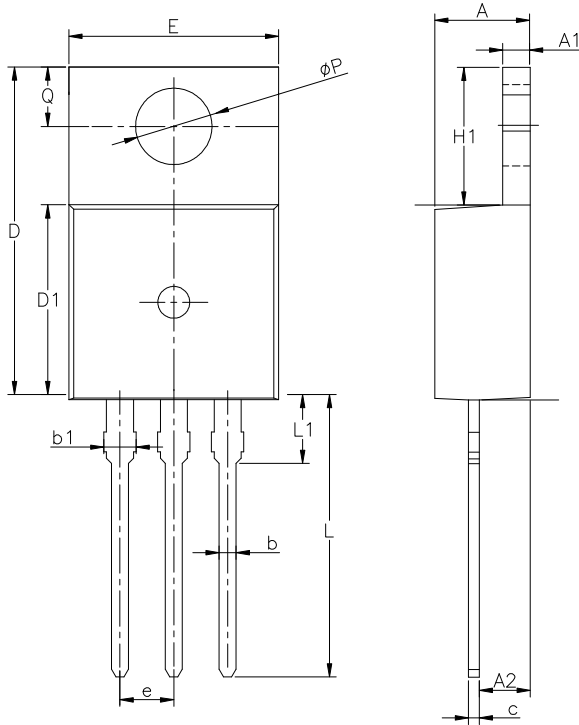
Figure4. Typical forward current derating curve



PACKAGE OUTLINE

TO-220-3L

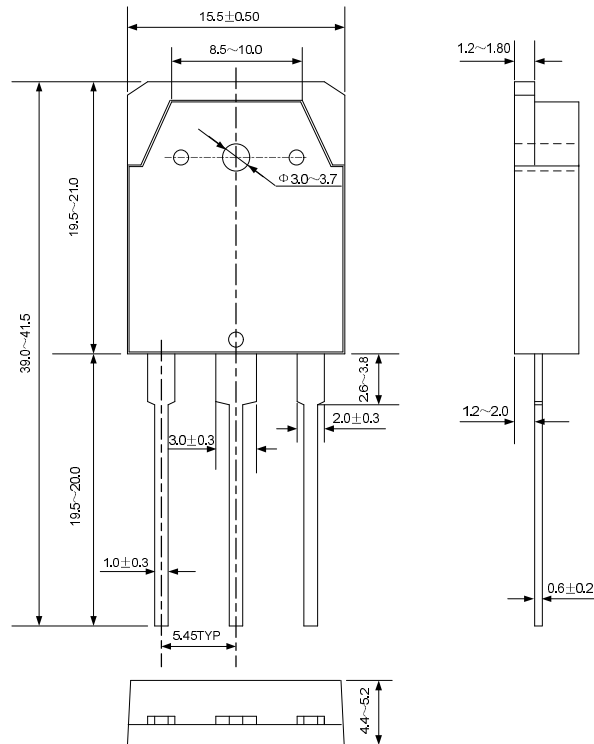
UNIT: mm



SYMBOL	MIN	NOM	MAX
A	4.30	4.50	4.70
A1	1.00	1.30	1.50
A2	1.80	2.40	2.80
b	0.60	0.80	1.00
b1	1.00	—	1.60
c	0.30	—	0.70
D	15.10	15.70	16.10
D1	8.10	9.20	10.00
E	9.60	9.90	10.40
e	2.54BSC		
H1	6.10	6.50	7.00
L	12.60	13.08	13.60
L1	—	—	3.95
ϕP	3.40	3.70	3.90
Q	2.60	—	3.20

TO-3P

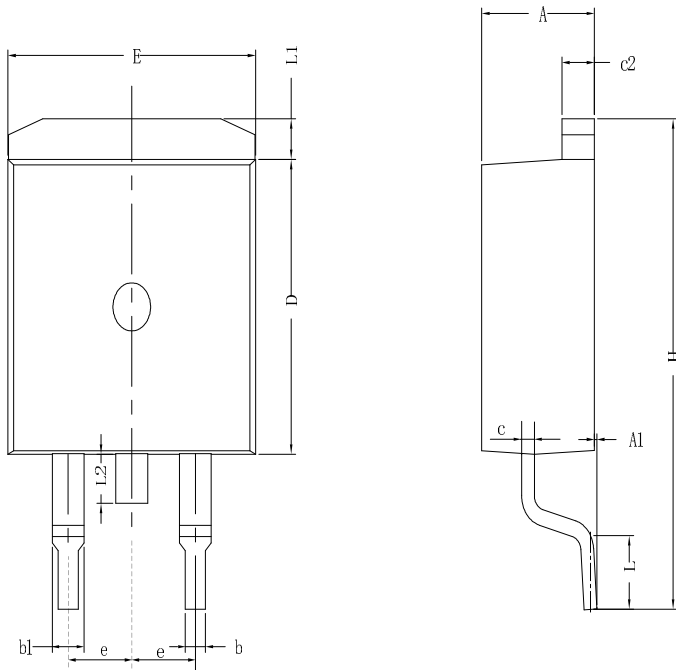
UNIT: mm



PACKAGE OUTLINE(continued)

TO-263-2L

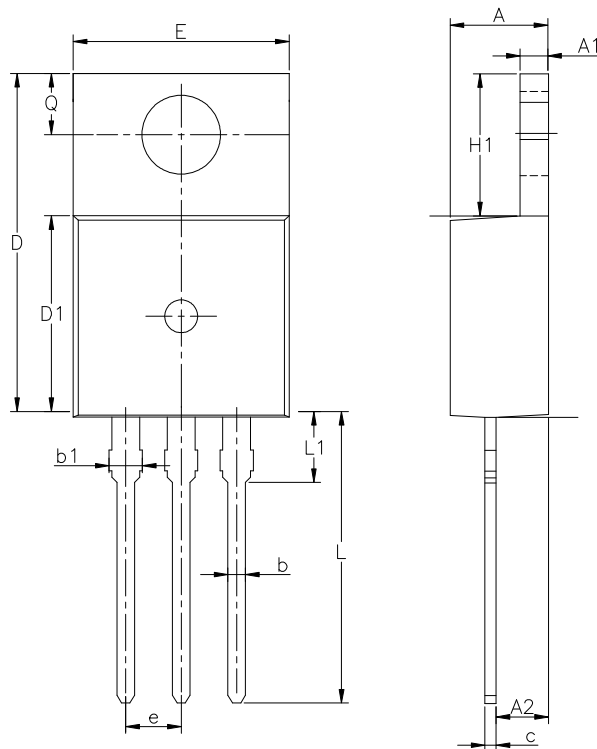
UNIT: mm



SYMBOL	MIN	NOM	MAX
A	4.30	4.57	4.72
A1	0	0.10	0.25
b	0.71	0.81	0.91
c	0.30	---	0.60
c2	1.17	1.27	1.37
D	8.50	---	9.35
E	9.80	---	10.45
e	2.54BSC		
H	14.70	---	15.75
L	2.00	2.30	2.74
L1	1.12	1.27	1.42
L2	---	---	1.75

TO-220HW-3L

UNIT: mm

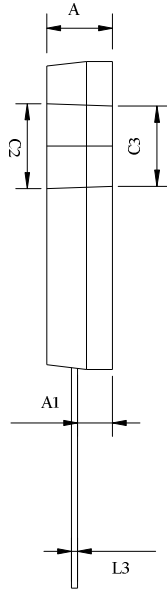
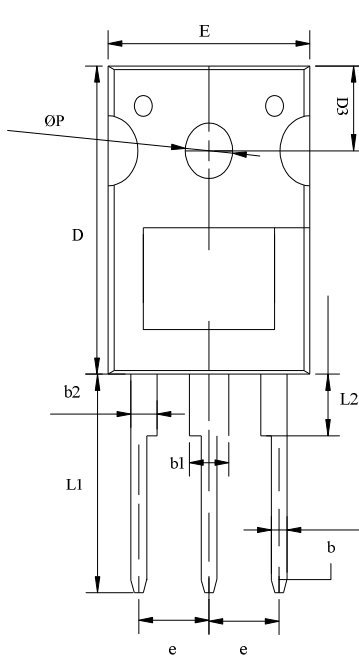


SYMBOL	MIN	NOM	MAX
A	4.30	4.50	4.70
A1	1.25	1.27	1.40
A2	1.80	2.50	2.80
b	0.70	0.80	0.95
b1	1.26	1.42	1.50
c	0.33	0.38	0.40
D	15.10	15.70	16.10
D1	8.80	9.15	9.40
E	9.60	10.20	10.40
e	2.54		
H1	6.10	6.50	7.00
L	12.60	13.10	13.60
L1	---	---	3.50
Q	2.70	---	2.90

PACKAGE OUTLINE(continued)

TO-247S-3L

UNIT: mm



SYMBOL	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
OP	3,40	3,60	3,80

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Rev.: 1.7 Author: Yin Zi

Revision History:

1. Update package outline of TO-247S-3L
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Rev.: 1.6 Author: Yin Zi

Revision History:

1. Add TO-247S-3L
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Rev.: 1.5 Author: Yin Zi

Revision History:

1. Modify the absolute maximum ratings
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Rev.: 1.4 Author: Yin Zi

Revision History:

1. Modify the typical characteristics curve
 2. Modify the package outline of TO-263-2L
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Rev.: 1.3 Author: Yin Zi

Revision History:

1. Add the package information of TO-220HW-3L
 2. Modify the package information of TO-220-3L
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Rev.: 1.2 Author: Yin Zi

Revision History:

1. Add the Figure 3 and 4
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Rev.: 1.1 Author: Yin Zi

Revision History:

1. Add the package of TO-263-2L
-

Rev.: 1.0 Author: Yin Zi

Revision History:

1. First release
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