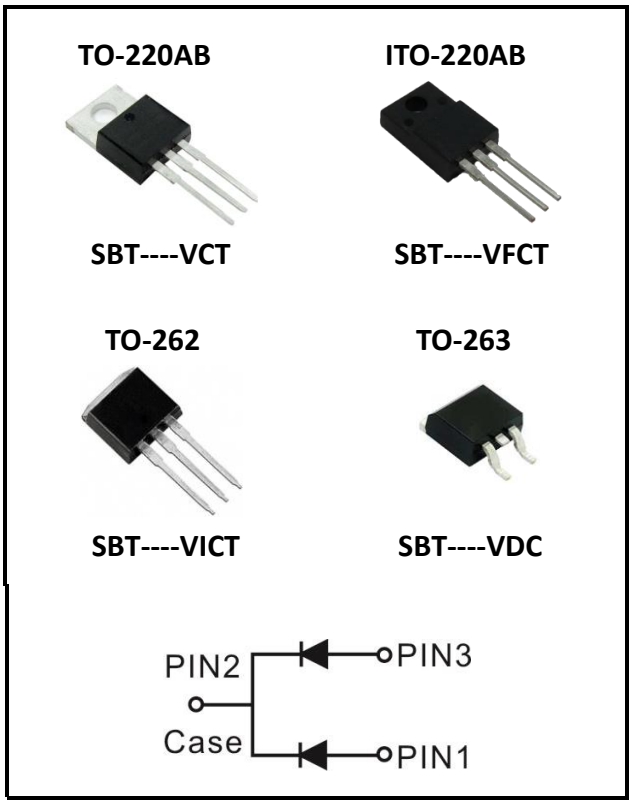
CURRENT 30 Ampere
VOLTAGE RANG 45 to 150 Volts

SBT3045VCT THRU SBT30150VFCT



Features

- Low Forward Voltage Drop
- Reliable High Temperature Operation
- Softest, Fast Switching Capability
- 150℃ Operating Junction Temperature
- Lead Free Finish, RoHS Compliant

Typical Applications

Device optimized for ultra-low forward voltage drop to maximize efficiency in Power Supply applications

Charact eristics

Maximum Ratings Characteristics (T_A = 25℃ unless otherwise specified)

Parameter	Symbol	SBT3045 VCT/VFCT	SBT3060 VCT/VFCT	SBT30100 VCT/VFCT	SBT30150 VCT/VFCT	Units
DC Blocking Voltage	V_{RM}	45	60	100	150	Volts
Peak Repetitive Reverse Voltage	V_{RRM}					
Average Rectified Forward Current Per device 15A*2	I_o	30				Amps
(Rated V_R-20Khz Square Wave) - 50% duty cycle						
Peak Forward Surge Current - 1/2 60hz	I_{FSM}	250				Amps
Peak Repetitive Reverse Surge Current (2uS-1Khz)	IRRM	2				Amps
Typical Thermal Resistance (per leg) Package = TO-220AB Package = TO-262 TO-263 Package = ITO-220AB	$R_{\theta Jc}$	2 3 4				℃/W
Human Body Model ESD Protection (TO-220)	ESD HBM	8				KV
Maximum Rate of Voltage Change (at Rated V_R)	dv/dt	10000				V/uS
Operating Junction Temperature	T_J	- 65 to +150				℃
Storage Junction Temperature	T_{STG}	- 65 to +150				℃

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Electrical Characteristics - (per leg) (T_A = 25℃ unless otherwise specified)

	Parameter	Test Conditions	Symbol		Typ.	Max.	Units
SBT3045VCT/VFCT	Instantaneous Forward Voltage	I_F =6 A	Tj=25℃	V_F*	0.34	-----	Volts
		I_F =15 A			0.45	0.49	
		I_F =6 A	Tj=125℃		0.30	-----	
		I_F =15 A			0.40	0.45	
	Instantaneous Reverse Current	V_R =36 V	Tj=25℃	I_R*	8	-----	uA
		V_R =45 V			18	80	uA
		V_R =36 V	Tj=125℃		-----	-----	mA
		V_R =45 V			-----	10	mA
SBT3060VCT/VFCT	Instantaneous Forward Voltage	I_F =6 A	Tj=25℃	V_F*	0.40	-----	Volts
		I_F =15 A			0.50	0.54	
		I_F =6 A	Tj=125℃		0.34	-----	
		I_F =15 A			0.44	0.48	
	Instantaneous Reverse Current	V_R =42 V	Tj=25℃	I_R*	8	-----	uA
		V_R =60 V			18	80	uA
		V_R =42 V	Tj=125℃		-----	-----	mA
		V_R =60 V			-----	10	mA
SBT30100VCT/VFCT	Instantaneous Forward Voltage	I_F =6 A	Tj=25℃	V_F*	0.52	-----	Volts
		I_F =15 A			0.64	0.70	
		I_F =6 A	Tj=125℃		0.44	-----	
		I_F =15 A			0.58	0.62	
	Instantaneous Reverse Current	V_R =70 V	Tj=25℃	I_R*	8	-----	uA
		V_R =100 V			20	80	uA
		V_R =70 V	Tj=125℃		-----	-----	mA
		V_R =100 V			-----	10	mA
SBT30150VCT/VFCT	Instantaneous Forward Voltage	I_F =6 A	Tj=25℃	V_F*	0.63	-----	Volts
		I_F =15 A			0.73	0.78	
		I_F =6 A	Tj=125℃		0.49	-----	
		I_F =15 A			0.70	0.75	
	Instantaneous Reverse Current	V_R =105 V	Tj=25℃	I_R*	8	-----	uA
		V_R =150 V			20	80	uA
		V_R =105 V	Tj=125℃		-----	-----	mA
		V_R =150 V			-----	10	mA

* Pulse width < 300 uS, Duty cycle < 2%

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SBT3045VCT THRU SBT30150VFCT

RATING AND CHRACTERISTIC CURVES

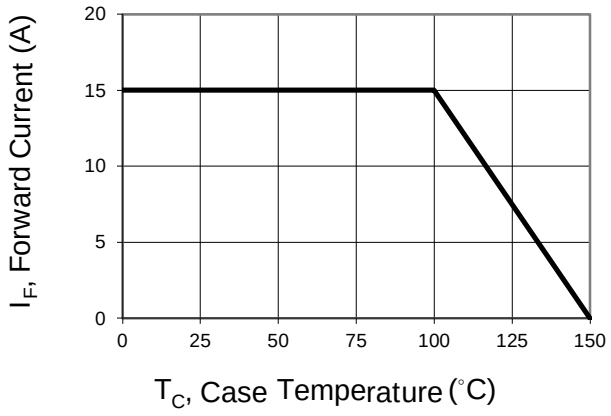

Fig.1 Forward Current Derating Curve

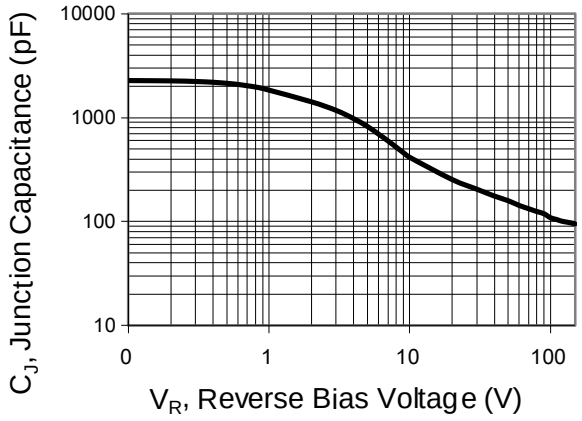

Fig.2 Typical Junction Capacitance

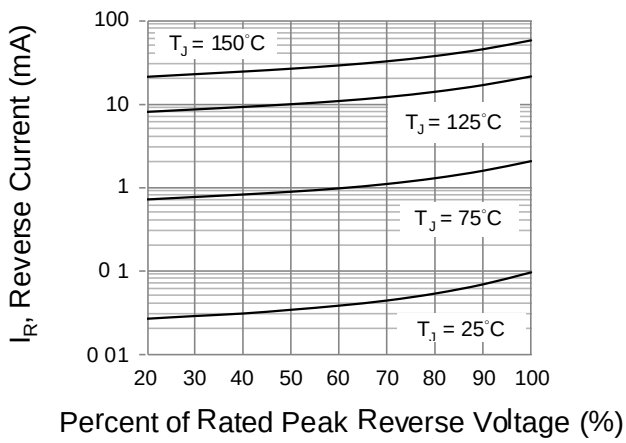

Fig.3 Typical Reverse Characteristics

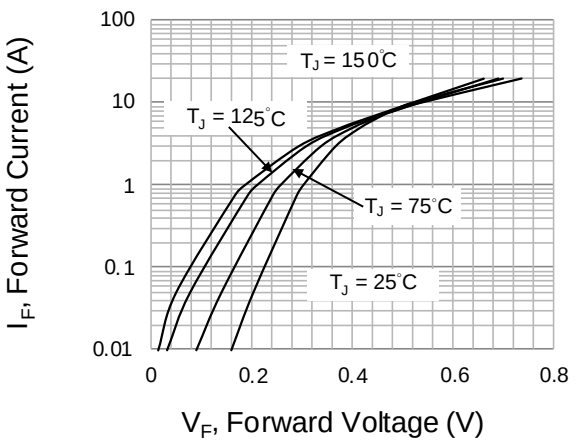

Fig.4 Typical Forward Characteristics

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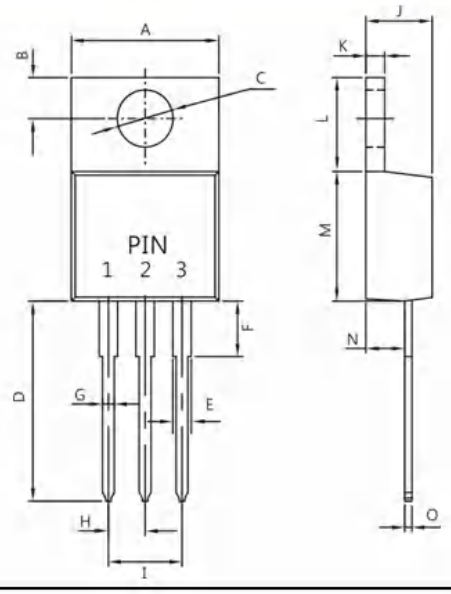
SBT3045VCT THRU SBT30150VFCT

Package information

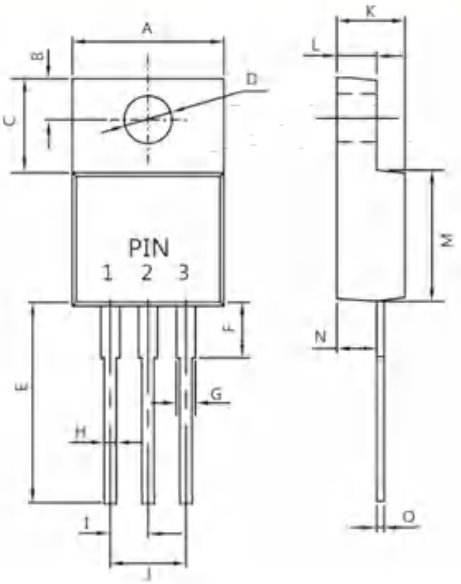
Package outline Dimensions millimeters

TO-220AB



Dim.	Min.	Max.
A	-----	10.50
B	2.50	3.50
C	3.50	4.10
D	13.10	13.90
E	1.15	1.49
F	-----	6.35
G	0.65	0.95
H	2.29	2.79
I	4.80	5.30
J	4.40	4.80
K	1.14	1.40
L	5.84	6.86
M	8.50	9.60
N	2.03	2.92
O	0.30	0.64
All Dimensions in millimeter		

ITO-220AB



Dim.	Min.	Max.
A	-----	10.50
B	2.60	3.00
C	6.70	7.10
D	2.90	3.50
E	13.10	13.90
F	-----	4.00
G	1.11	1.45
H	0.40	0.80
I	2.40	2.80
J	5.00	5.40
K	4.30	4.70
L	2.90	3.30
M	8.20	9.00
N	2.50	2.90
O	0.40	0.80
All Dimensions in millimeter		

CURRENT 30 Ampere
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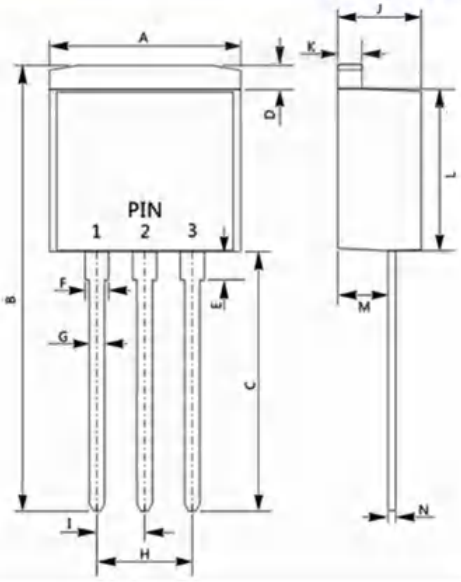
SBT3045VCT THRU SBT30150VFCT

Package information

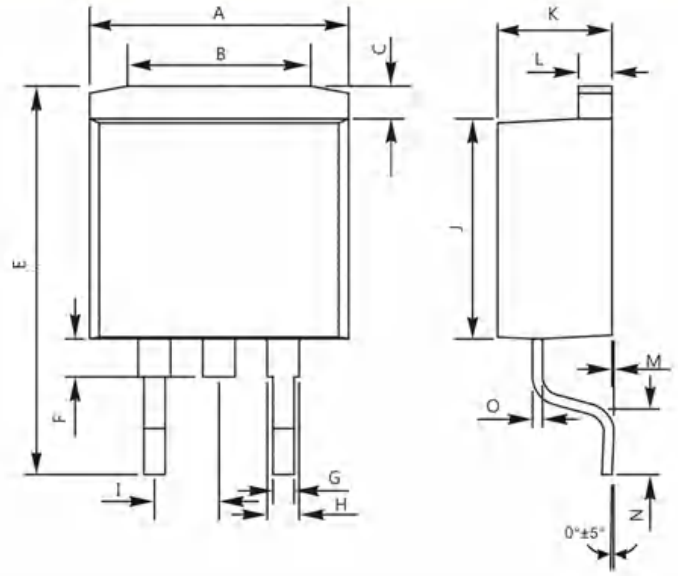
Package outline Dimensions millimeters

TO-262 (I²PAK)



Dim.	Min.	Max.
A	-----	10.40
B	23.44	24.20
C	13.25	14.25
D	1.27 Ref.	
E	-----	4.10
F	1.14	1.40
G	0.76	1.00
H	4.95	5.20
I	2.54 Ref.	
J	4.40	4.80
K	1.25	1.45
L	8.60	9.00
M	2.50	2.80
N	0.35	0.56
All Dimensions in millimeter		

TO-263 (D²PAK)



Dim.	Min.	Max.
A	9.65	10.69
B	7.30 Ref.	
C	1.30 Ref.	
E	14.70	15.90
F	1.5 Ref.	
G	0.76	1.00
H	1.14	1.70
I	2.54 Ref.	
J	8.55	9.50
K	4.40	4.85
L	1.25	1.50
M	----	0.25
N	2.30	2.80
O	0.36	0.60
All Dimensions in millimeter		