

CURRENT 10 Ampere
VOLTAGE RANG 45 to 150 Volts

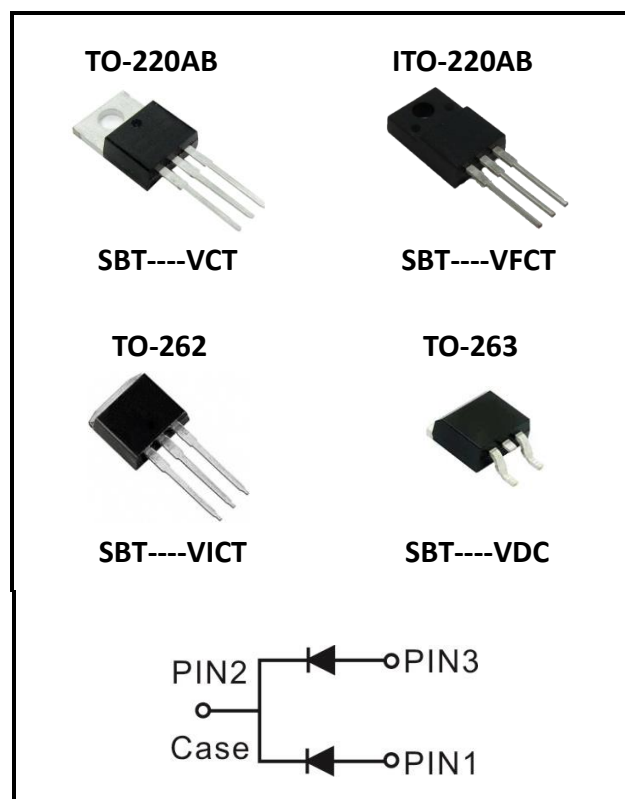
SBT1045VCT THRU SBT10150VFCT

Features

- Low Forward Voltage Drop
- Reliable High Temperature Operation
- Softest, Fast Switching Capability
- 150°C 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



Characteristics

Maximum Ratings Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	SBT1045 VCT/VFCT	SBT1060 VCT/VFCT	SBT10100 VCT/VFCT	SBT10150 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 5A*2	I _o	10				Amps
(Rated V _R -20Khz Square Wave) - 50% duty cycle						
Peak Forward Surge Current - 1/2 60hz	I _{FSM}	150				Amps
Peak Repetitive Reverse Surge Current (2uS-1Khz)	I _{RRM}	2				Amps
Typical Thermal Resistance (per leg) Package = TO-220AB Package = TO-262 TO-263 Package = ITO-220AB	R _{θJc}	2 3 4				℃/W
Human Body Model ESD Protection (TO-220)	ESD HBM	8				
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				℃

CURRENT 10 Ampere

VOLTAGE RANG 45 to 150 Volts

SBT1045VCT THRU SBT10150VFCT

Electrical Characteristics - (per leg) ($T_A = 25^\circ\text{C}$ unless otherwise specified)

	Parameter	Test Conditions	Symbol		Typ.	Max.	Units
SBT1045VCT/VFCT	Instantaneous Forward Voltage	I _F =2 A	T _j =25℃	V _F *	0.28	-----	Volts
		I _F =5 A			0.40	0.44	
		I _F =2 A	T _j =125℃				
		I _F =5 A			0.35	0.39	
	Instantaneous Reverse Current	V _R =36 V	T _j =25℃	I _R *	3	-----	uA
		V _R =45 V			12	50	uA
		V _R =36 V	T _j =125℃		-----	-----	mA
		V _R =45 V			-----	5	mA
SBT1060VCT/VFCT	Instantaneous Forward Voltage	I _F =2 A	T _j =25℃	V _F *	0.33	-----	Volts
		I _F =5 A			0.46	0.50	
		I _F =2 A	T _j =125℃		0.24	-----	
		I _F =5 A			0.40	0.42	
	Instantaneous Reverse Current	V _R =42 V	T _j =25℃	I _R *	4	-----	uA
		V _R =60 V			12	60	uA
		V _R =42 V	T _j =125℃		-----	-----	mA
		V _R =60 V			-----	5	mA
SBT10100VCT/VFCT	Instantaneous Forward Voltage	I _F =2 A	T _j =25℃	V _F *	0.42	-----	Volts
		I _F =5 A			0.58	0.63	
		I _F =2 A	T _j =125℃		0.35	-----	
		I _F =5 A			0.52	0.54	
	Instantaneous Reverse Current	V _R =70 V	T _j =25℃	I _R *	4	-----	uA
		V _R =100 V			12	60	uA
		V _R =70 V	T _j =125℃		-----	-----	mA
		V _R =100 V			-----	5	mA
SBT10150VCT/VFCT	Instantaneous Forward Voltage	I _F =2 A	T _j =25℃	V _F *	0.50	-----	Volts
		I _F =5 A			0.67	0.71	
		I _F =2 A	T _j =125℃		0.40	-----	
		I _F =5 A			0.63	0.66	
	Instantaneous Reverse Current	V _R =105 V	T _j =25℃	I _R *	4	-----	uA
		V _R =150 V			12	60	uA
		V _R =105 V	T _j =125℃		-----	-----	mA
		V _R =150 V			-----	5	mA

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

CURRENT 10 Ampere

VOLTAGE RANG 45 to 150 Volts

SBT1045VCT THRU SBT10150VFCT

RATING AND CHARACTERISTIC CURVES

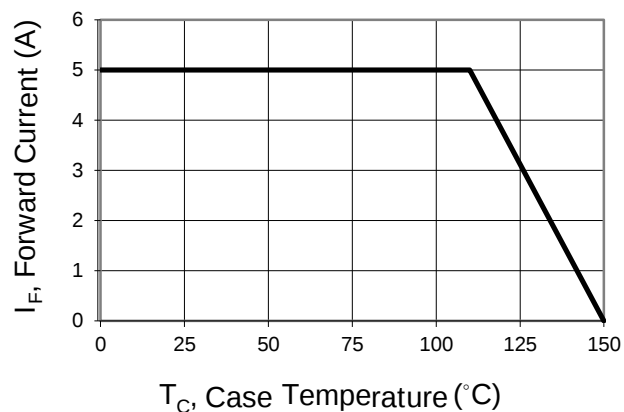


Fig.1 Forward Current Derating Curve

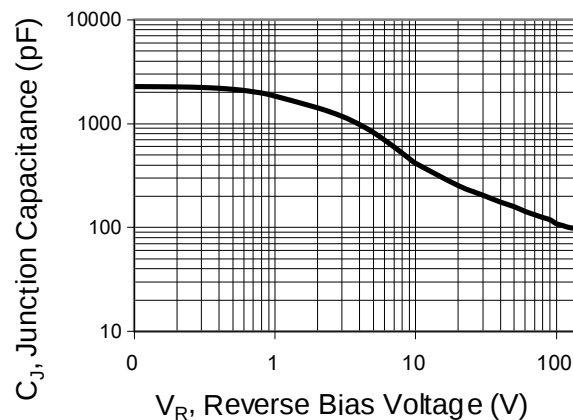


Fig.2 Typical Junction Capacitance

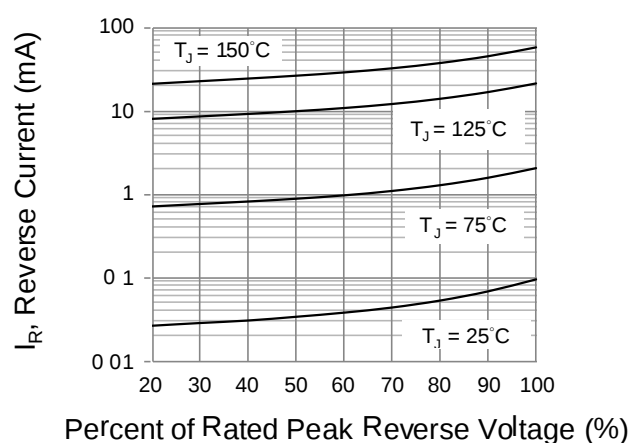


Fig.3 Typical Reverse Characteristics

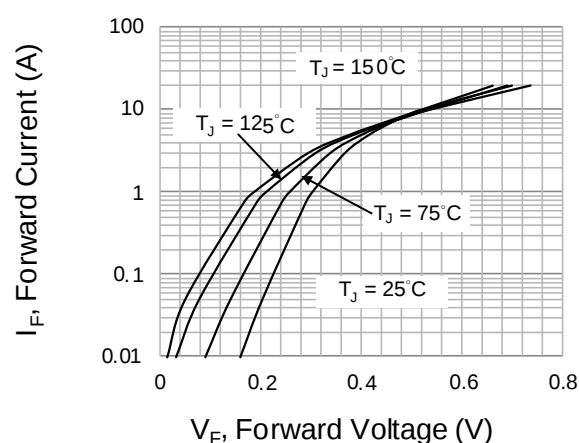


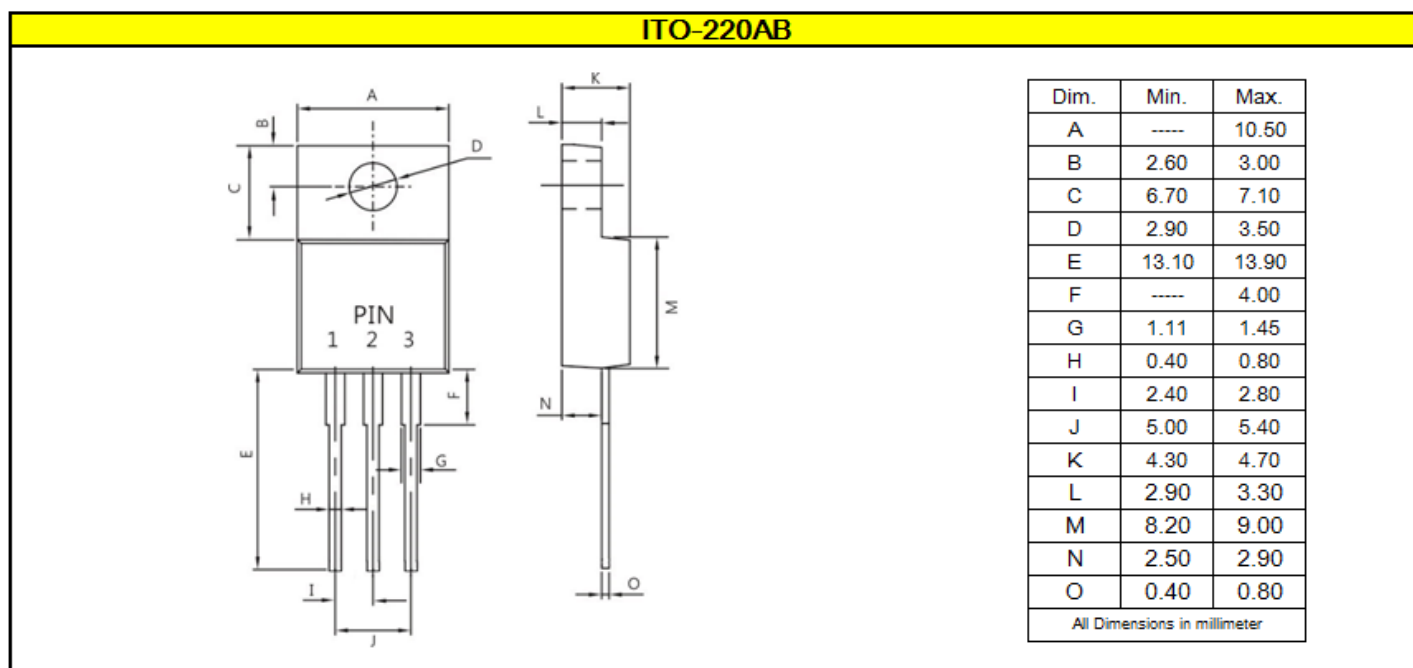
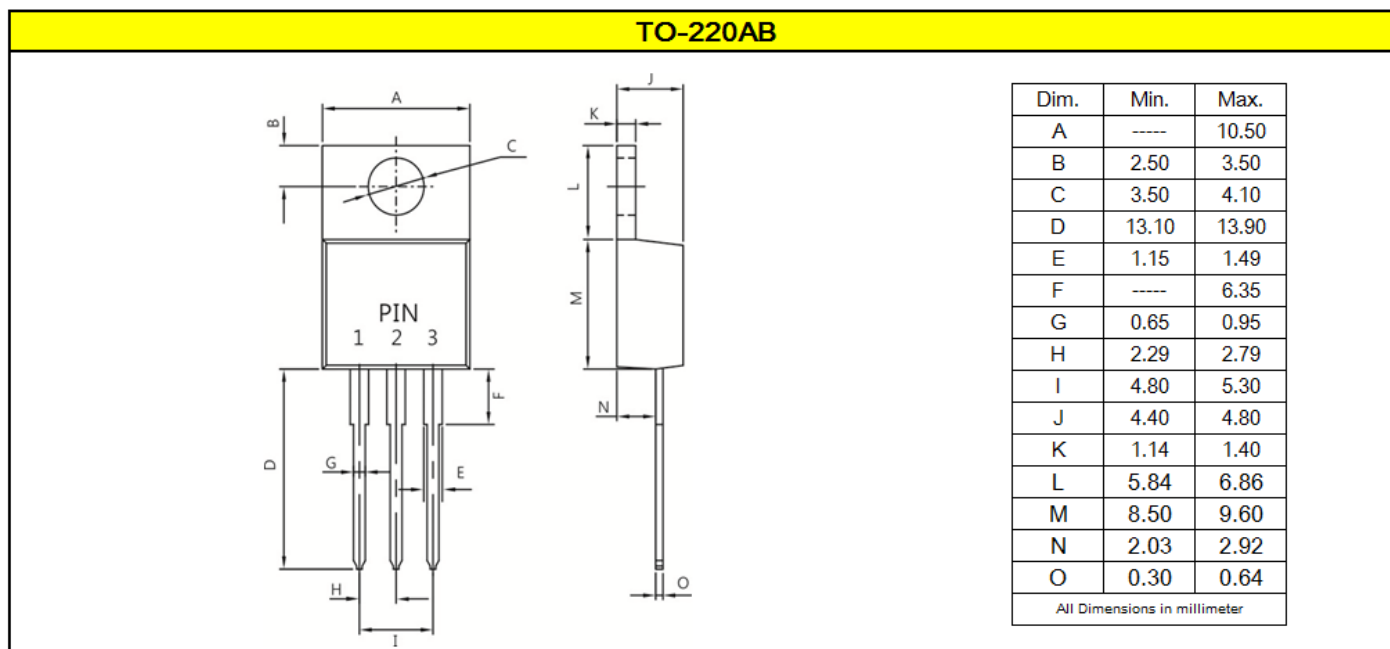
Fig.4 Typical Forward Characteristics

CURRENT 10 Ampere
VOLTAGE RANG 45 to 150 Volts

SBT1045VCT THRU SBT10150VFCT

Package information

Package outline Dimensions millimeters



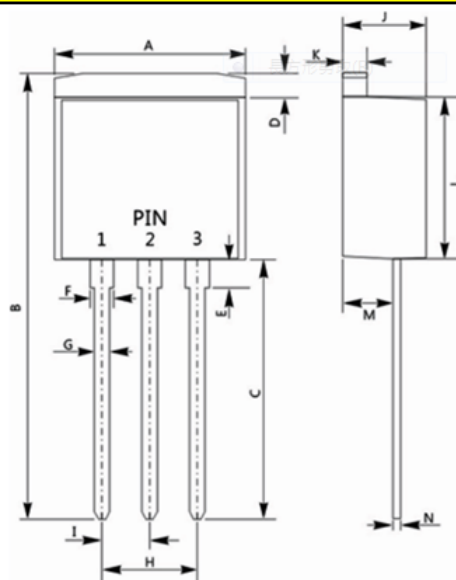
CURRENT 10 Ampere
VOLTAGE RANG 45 to 150 Volts

SBT1045VCT THRU SBT10150VFCT

Package information

Package outline Dimensions millimeters

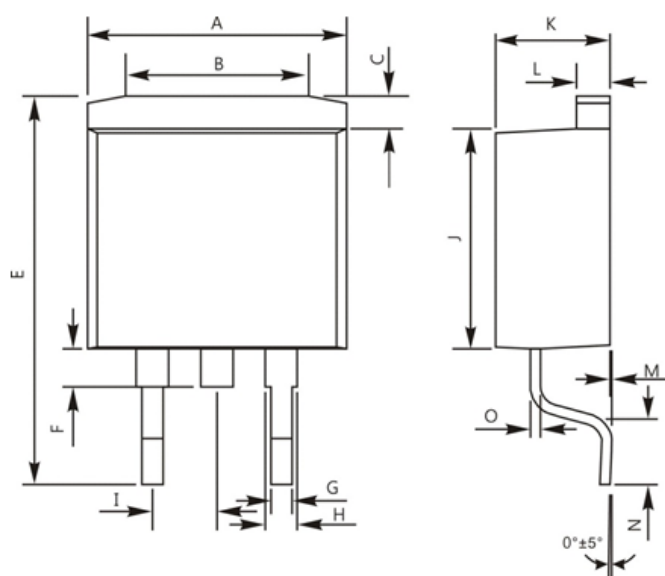
TO-262 (I²PAK)



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