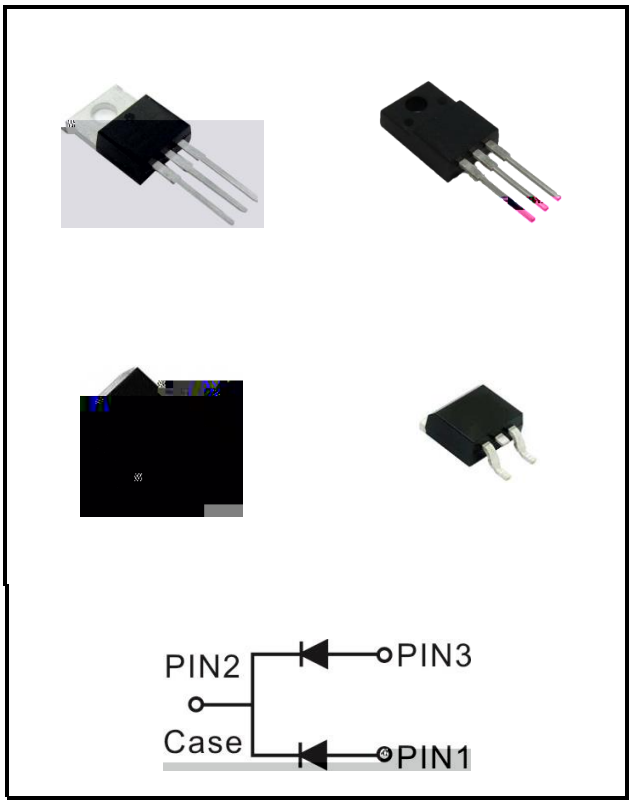
CURRENT 40 Ampere
VOLTAGE RANG 45 to 150 Volts

SBT4045VCT THRU SBT40150VFCT



Features

- Â Low Forward Voltage Drop
- Â Reliable High Temperature Operation
- Â Softest, Fast Switching Capability
- Â 150 Operating Junction Temperature
- Â 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	SBT4045 VCT/VFCT	SBT4060 VCT/VFCT	SBT40100 VCT/VFCT	SBT40150 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 20A*2	I_o	40				Amps
(Rated V_R-20Khz Square Wave) - 50% duty cycle						
D	D					
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	$R_{\theta Jc}$	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					
Storage Junction Temperature	T_{STG}					

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

	Parameter	Test Conditions	Symbol		Typ.	Max.	Units
SBT4045VCT/VFCT	Instantaneous Forward Voltage	I_F =8 A	T_j=25	V_F*	0.35	-----	Volts
		I_F =20 A			0.48	0.52	
		I_F =8 A	T_j=125		0.32	-----	
		I_F =20 A			0.42	0.47	
	Instantaneous Reverse Current	V_R =36 V	T_j=25	I_R*	10	-----	uA
		V_R =45 V			20	100	uA
		V_R =36 V	T_j=125		-----	-----	mA
		V_R =45 V			-----	10	mA
SBT4060VCT/VFCT	Instantaneous Forward Voltage	I_F =8 A	T_j=25	V_F*	0.42	-----	Volts
		I_F =20 A			0.54	0.58	
		I_F =8 A	T_j=125		0.36	-----	
		I_F =20 A			0.48	0.50	
	Instantaneous Reverse Current	V_R =42 V	T_j=25	I_R*	10	-----	uA
		V_R =60 V			20	100	uA
		V_R =42 V	T_j=125		-----	-----	mA
		V_R =60 V			-----	10	mA
SBT40100VCT/VFCT	Instantaneous Forward Voltage	I_F =8 A	T_j=25	V_F*	0.54	-----	Volts
		I_F =20 A			0.68	0.74	
		I_F =8 A	T_j=125		0.48	-----	
		I_F =20 A			0.62	0.68	
	Instantaneous Reverse Current	V_R =70 V	T_j=25	I_R*	10	-----	uA
		V_R =100 V			22	100	uA
		V_R =70 V	T_j=125		-----	-----	mA
		V_R =100 V			-----	10	mA
SBT40150VCT/VFCT	Instantaneous Forward Voltage	I_F =8 A	T_j=25	V_F*	0.65	-----	Volts
		I_F =20 A			0.78	0.82	
		I_F =8 A	T_j=125		0.52	-----	
		I_F =20 A			0.72	0.77	
	Instantaneous Reverse Current	V_R =105 V	T_j=25	I_R*	10	-----	uA
		V_R =150 V			22	100	uA
		V_R =105 V	T_j=125		-----	-----	mA
		V_R =150 V			-----	10	mA

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

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RATING AND CHRACTERISTIC CURVES

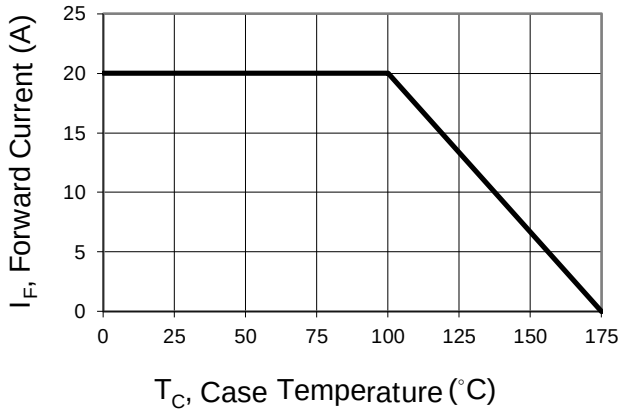

Fig.1 Forward Current Derating Curve

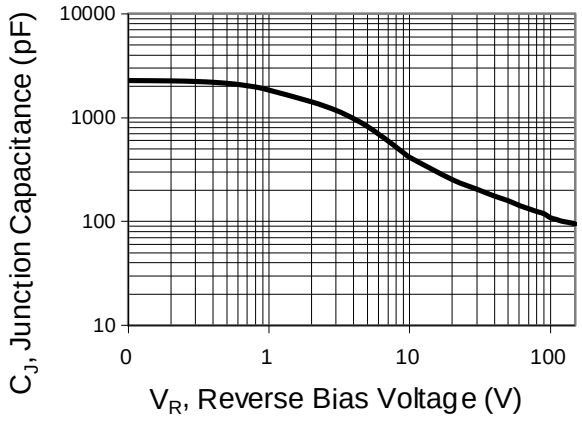

Fig.2 Typical Junction Capacitance

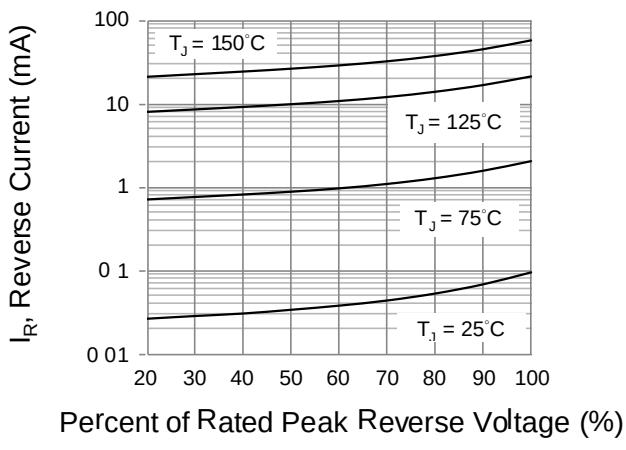

Fig.3 Typical Reverse Characteristics

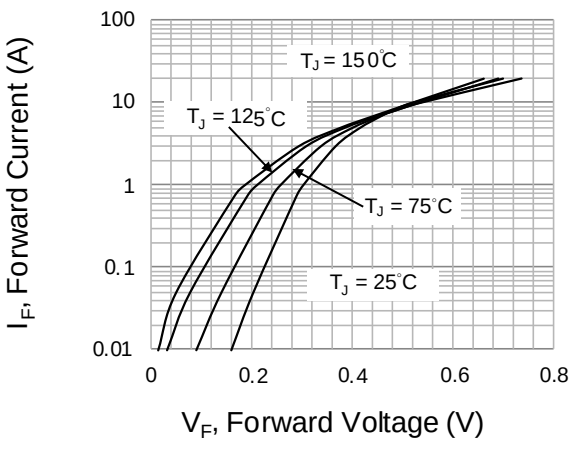

Fig.4 Typical Forward Characteristics

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Package information

Package outline Dimensions millimeters

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