

Features

- Low Forward Voltage Drop.
- Excellent High Temperature Stability.
- Super Barrier Design.
- Soft, Fast Switching Capability.



Typical Applications

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

Mechanical Data

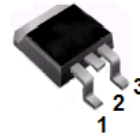
- Case: TO-220AB、ITO-220AB、TO-263.
- Molding compound, UL flammability classification rating 94V-0.
- Terminals: Matte tin plated leads, solderable per MIL-STD-202, Method 208.



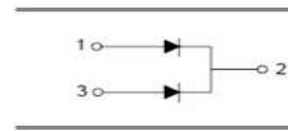
SBT30120VCT
TO-220AB



SBTF30120VCT
ITO-220AB



SBTB30120VCT
TO-263



Ordering Information

Part Number	Package	Shipping	Marking Code
SBT30120VCT□	TO-220AB	50/Tube	SBT30120VCT
SBTF30120VCT□	ITO-220AB	50/Tube	SBTF30120VCT
SBTB30120VCT□	TO-263	50/Tube or 800/Tape Reel	SBTB30120VCT

□: none is for Lead Free package;

“G” is for Halogen Free package.

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

Characteristic	Symbol	Value	Units
Peak repetitive reverse voltage	V_{RRM}	120	V
DC Blocking Voltage	V_{RM}	120	
Working Peak Reverse Voltage	V_{RWM}	120	V
Average Rectified Forward Current Per device	I_o	30	A
Peak Repetitive Reverse Surge Current (2 μ S-1Khz)	I_{RRM}	1	A
Peak forward surge current, 8.3ms single half-sine-wave	I_{FSM}	200	A
Non-repetitive avalanche energy at $T_J=25^{\circ}\text{C}$, $L=10\text{mH}$, $I=7.5\text{A}$, per diode	EAS	250	mJ

Thermal Characteristics

Parameter	Symbol	SBT30120VCT	SBTF30120VCT	SBTB30120VCT	Units
Typical thermal resistance per leg	$R_{\theta JC}$	2	4	3	$^{\circ}\text{C}/\text{W}$
Operating junction temperature range	T_J	150			$^{\circ}\text{C}$
Storage temperature range	T_{STG}	-65 to +150			$^{\circ}\text{C}$

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

Parameter	Symbol	Test conditions	Min.	Typ.	Max.	Units
Forward Voltage	V_F^*	$I_F=5\text{A}, T_J=25^\circ\text{C}$	-	0.54	-	V
		$I_F=15\text{A}, T_J=25^\circ\text{C}$	-	0.82	0.88	
		$I_F=5\text{A}, T_J=125^\circ\text{C}$	-	0.50	-	
		$I_F=15\text{A}, T_J=125^\circ\text{C}$	-	0.65	-	
Maximum Peak Reverse Current	I_R^*	$V_R = \text{Rated } V_{RRM}, T_J=25^\circ\text{C}$	-	-	100	μA
		$V_R = \text{Rated } V_{RRM}, T_J=125^\circ\text{C}$	-	14	-	m A
Reverse Recovery Time	T_{rr}	$I_F=0.5 I_R=1\text{A } I_{rr}=0.25\text{A}$	-	20	-	ns

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

Ratings and Characteristic Curves ($T_A=25^\circ\text{C}$ unless otherwise noted)

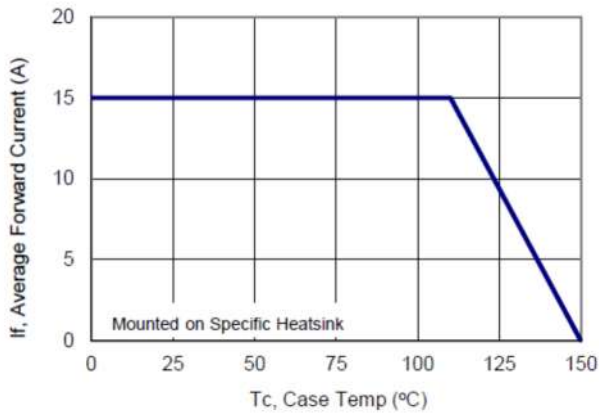


Figure 1: Current Derating, Case

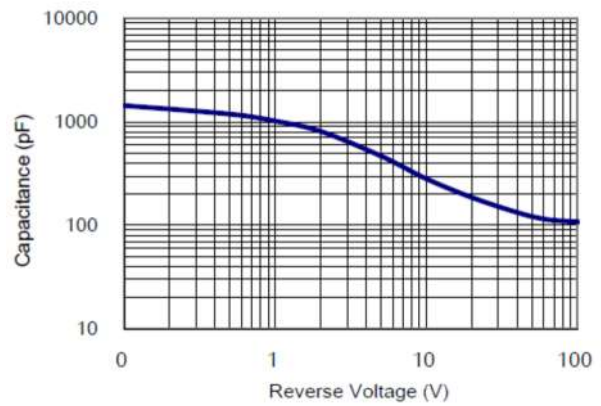


Figure 2: Typical Junction Capacitance

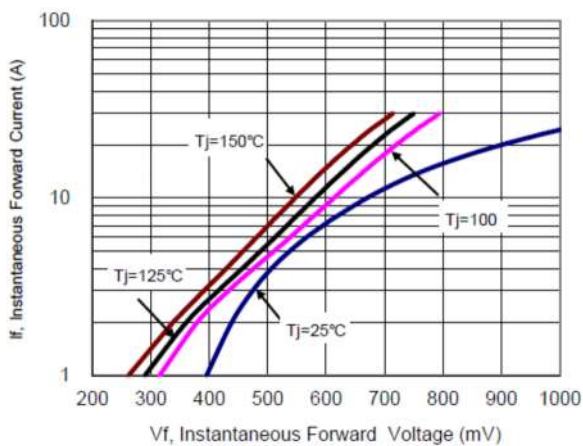


Figure 3: Typical Forward Voltage

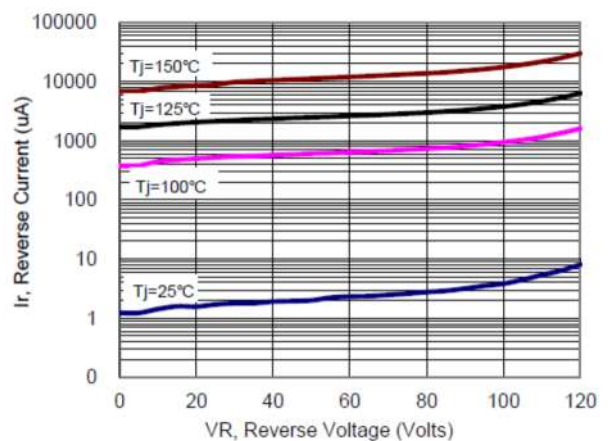
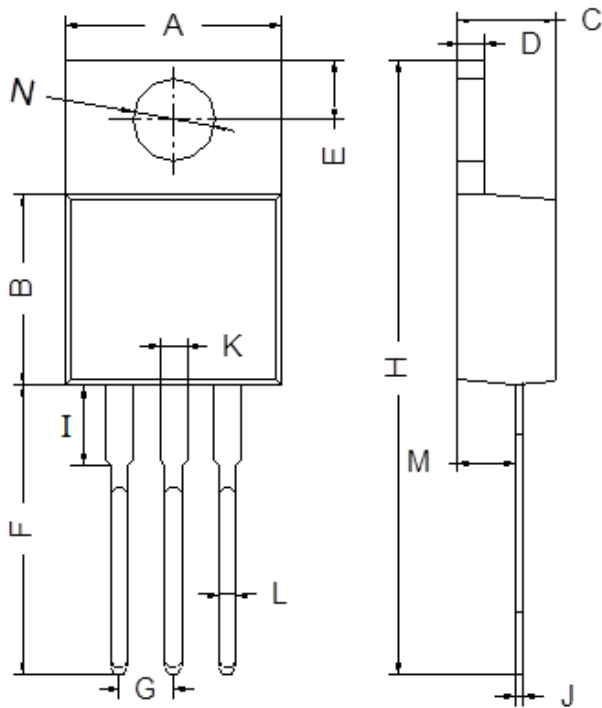


Figure 4: Typical Reverse Current

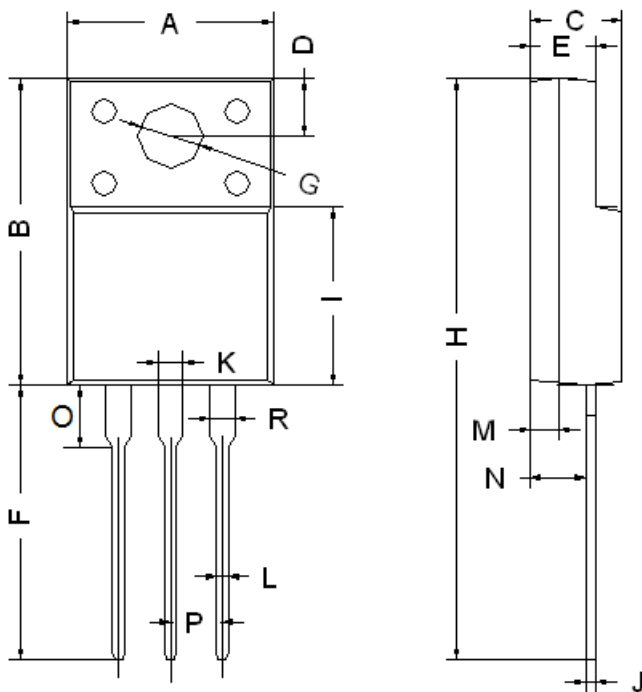
Package Outline Dimensions (unit:mm)

TO-220AB



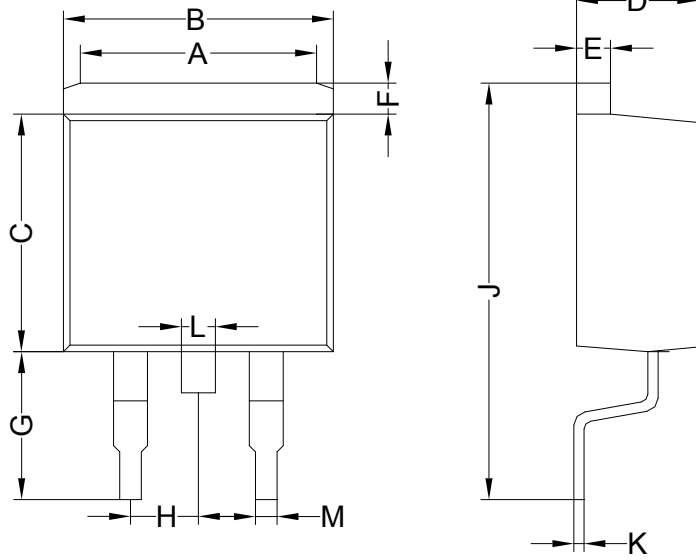
TO-220AB		
Dim	Min	Max
A	9.80	10.30
B	8.70	9.10
C	4.37	4.77
D	1.07	1.47
E	2.64	2.84
F	13.14	13.74
G	2.44	2.64
H	28.03	28.83
I	3.50	4.00
J	0.28	0.48
K	1.22	1.32
L	0.71	0.91
M	2.40	2.60
N	3.76	3.96

ITO-220AB



ITO-220AB		
Dim	Min	Max
A	9.90	10.30
B	14.80	15.20
C	4.30	4.70
D	2.50	2.90
E	2.80	3.30
F	13.00	13.60
G	3.10	3.30
H	28.00	28.60
I	7.90	8.90
J	0.40	0.60
L	0.70	0.90
M	1.30	1.50
N	2.60	2.80
O	2.60	3.10
P	2.45	2.65
K/R	1.10	1.30

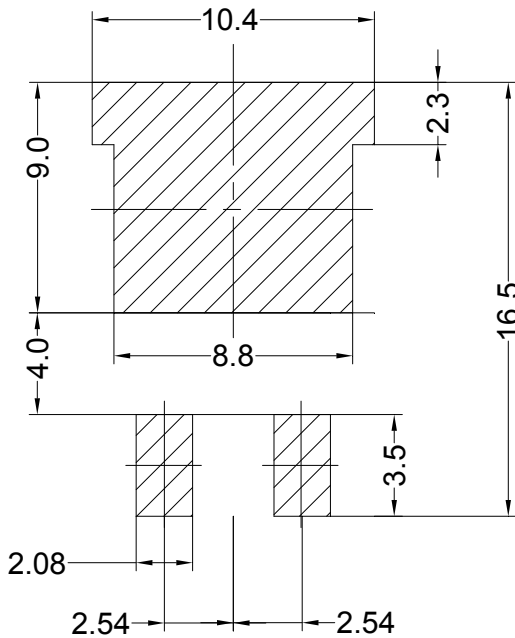
TO-263



TO-263		
A	7.30	7.70
B	9.90	10.30
C	8.70	9.10
D	4.37	4.77
E	1.07	1.47
F	1.06	1.26
G	5.34	5.74
H	2.44	2.64
J	15.30	15.90
K	0.28	0.48
L	1.17	1.37
M	0.71	0.91

Mounting Pad Layout(unit:mm)

TO-263



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