

TO-220F-B Plastic-Encapsulate Diode

SBDF20H300CTB SCHOTTKY BARRIER RECTIFIER

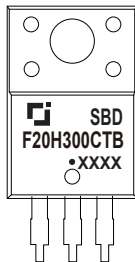
MAIN CHARACTERISTICS

I_o	20 (10×2) A
V_{RRM}	300 V
T_j	175 °C
$V_{F(typ)}$	0.7V (@Tj=150°C)

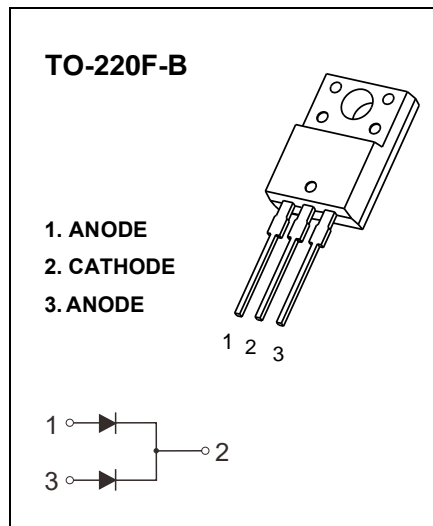
FEATURES

- Low Power Loss, High Efficiency
- Guard Ring Die Construction for Transient Protection
- High Current Capability and Low Forward Voltage Drop

MARKING



SBDF20H300CTB = Device code
 Solid dot = Green molding compound device
 if none, the normal device
 XXXX = Code



MAXIMUM RATINGS ($T_a=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	SBDF20H300CTB	Unit
V_{RRM}	Peak repetitive reverse voltage	300	V
V_{RWM}	Working peak reverse voltage		
V_R	DC blocking voltage		
$V_{R(RMS)}$	RMS reverse voltage	210	V
I_o	Average rectified output current	20	A
I_{FSM}	Non-Repetitive peak forward surge current (8.3ms half sine wave)	220	A
$R_{\theta Jc}$	Thermal resistance from junction to case , $T_c=25^\circ\text{C}$	4.8	$^\circ\text{C/W}$
$R_{\theta JA}$	Thermal resistance from junction to ambient	89	$^\circ\text{C/W}$
T_j	Junction temperature	175	$^\circ\text{C}$
T_{stg}	Storage temperature	-55~+175	$^\circ\text{C}$

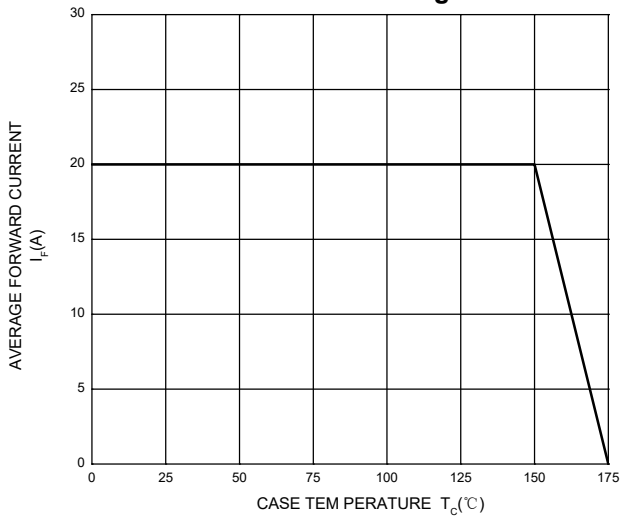
ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Reverse voltage	$V_{(BR)}$	$I_R=1\text{mA}$	300			V
Reverse current	I_R	$V_R=300\text{V}$	$T_j=25^\circ\text{C}$	30	500	nA
			$T_j=150^\circ\text{C}$	0.7		mA
Forward voltage	V_F	$I_F=10\text{A}$	$T_j=25^\circ\text{C}$	0.88	0.95	V
			$T_j=150^\circ\text{C}$	0.7		V
		$I_F=20\text{A}$	$T_j=25^\circ\text{C}$	0.95		V
			$T_j=150^\circ\text{C}$	0.8		V

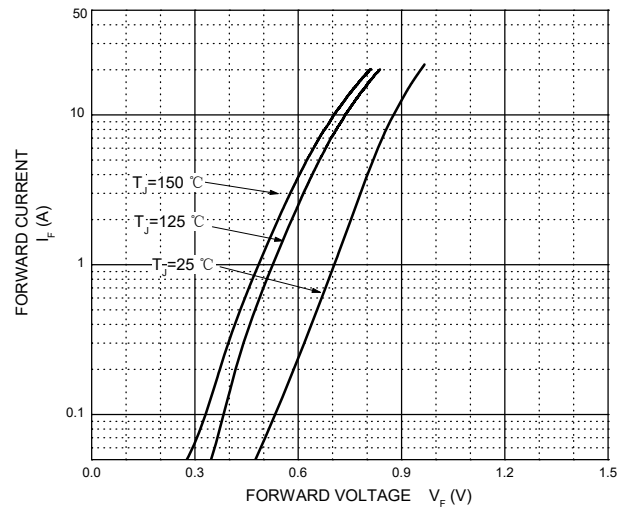
*Pulse test: pulse width $\leq 300\mu\text{s}$, duty cycles $\leq 2.0\%$.

Typical Characteristics

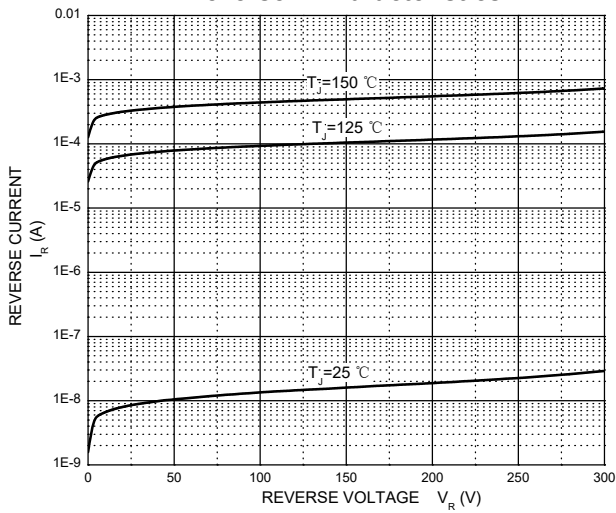
Forward Current Derating Curve



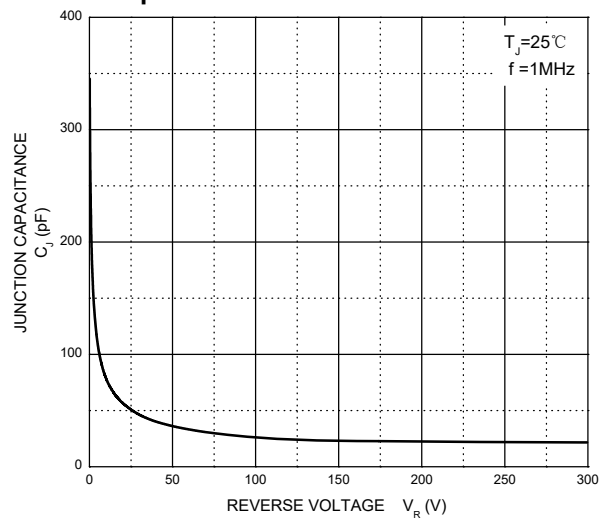
Forward Characteristics



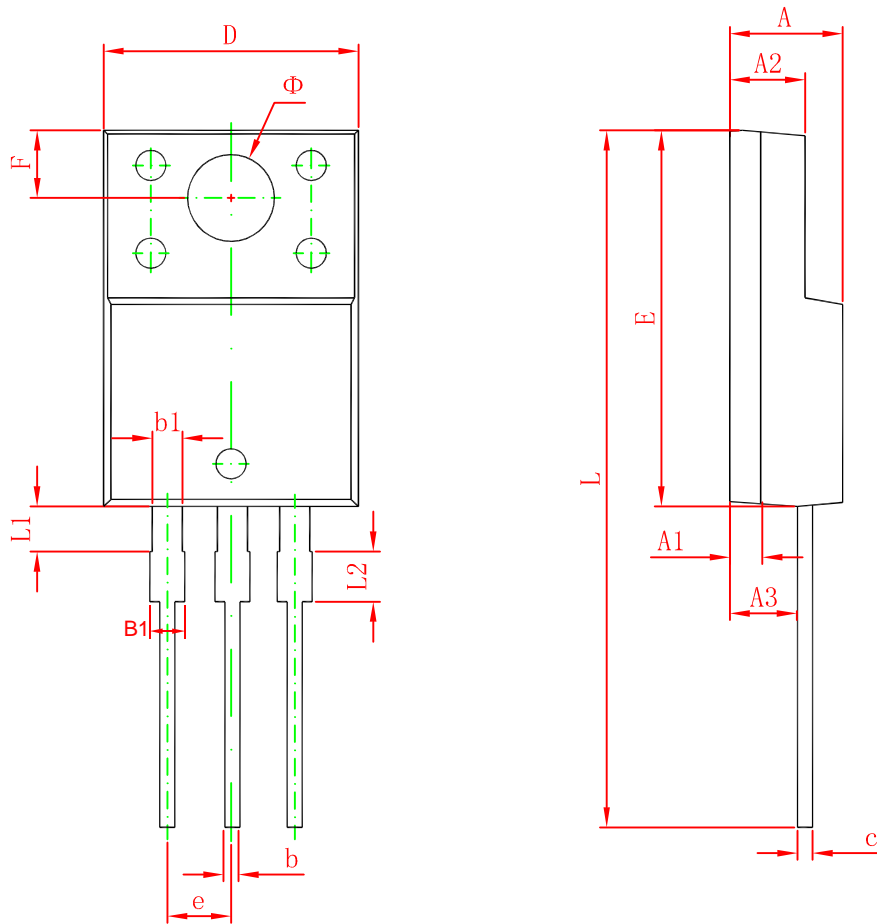
Reverse Characteristics



Capacitance Characteristics Per Diode



TO-220F-B Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	4.300	4.700	0.169	0.185
A1	1.200 REF.		0.047 REF.	
A2	2.800	3.200	0.110	0.126
A3	2.500	2.900	0.098	0.114
b	0.710	0.910	0.028	0.036
b1	1.100	1.350	0.043	0.053
B1	1.150	1.400	0.045	0.055
c	0.500	0.750	0.020	0.030
D	9.960	10.360	0.392	0.408
E	14.800	15.200	0.583	0.598
e	2.540 TYP.		0.100 TYP.	
F	2.700 REF.		0.106 REF.	
Φ	3.300	3.700	0.130	0.146
L	28.000	28.400	1.102	1.118
L1	2.100	2.400	0.082	0.094
L2	1.300	1.700	0.051	0.066