

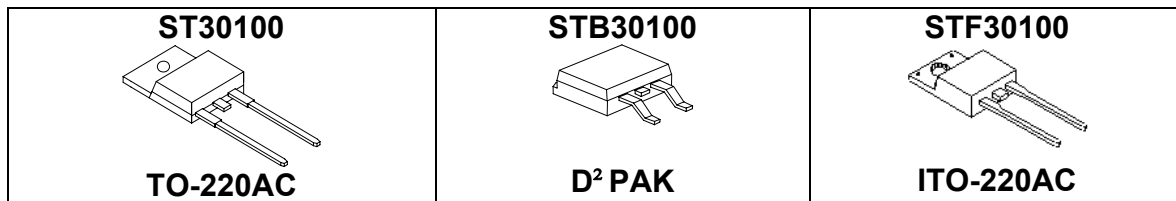
**ST30100/STB30100/STF30100**  
**SCHOTTKY RECTIFIER**

**Applications:**

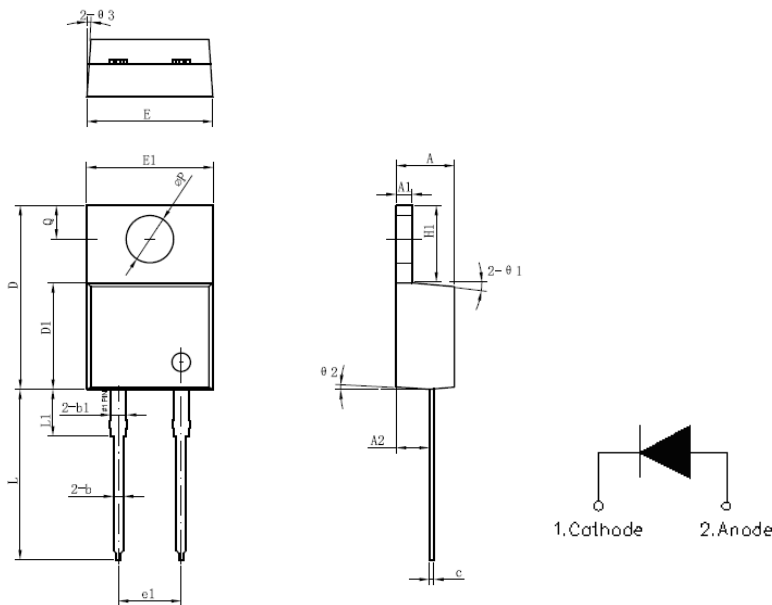
- Switching power supply
- Converters
- Free-Wheeling diodes
- Reverse battery protection
- Center tap configuration

**Features:**

- 150°C T<sub>J</sub> operation
- Center tap configuration
- Ultralow forward voltage drop
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- High frequency operation
- Trench MOS Schottky technology
- This is a Pb - Free Device
- All SMC parts are traceable to the wafer lot

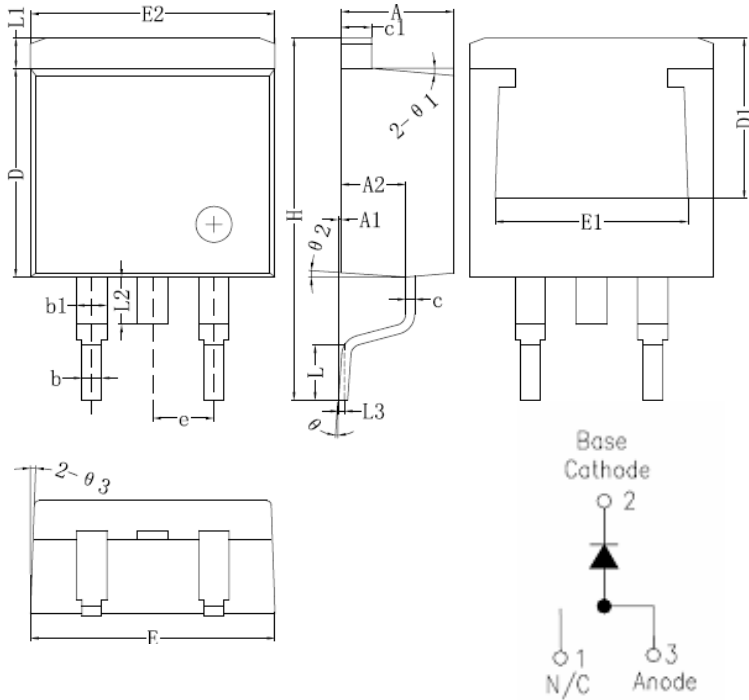


**Mechanical Dimensions: In Inches / mm**



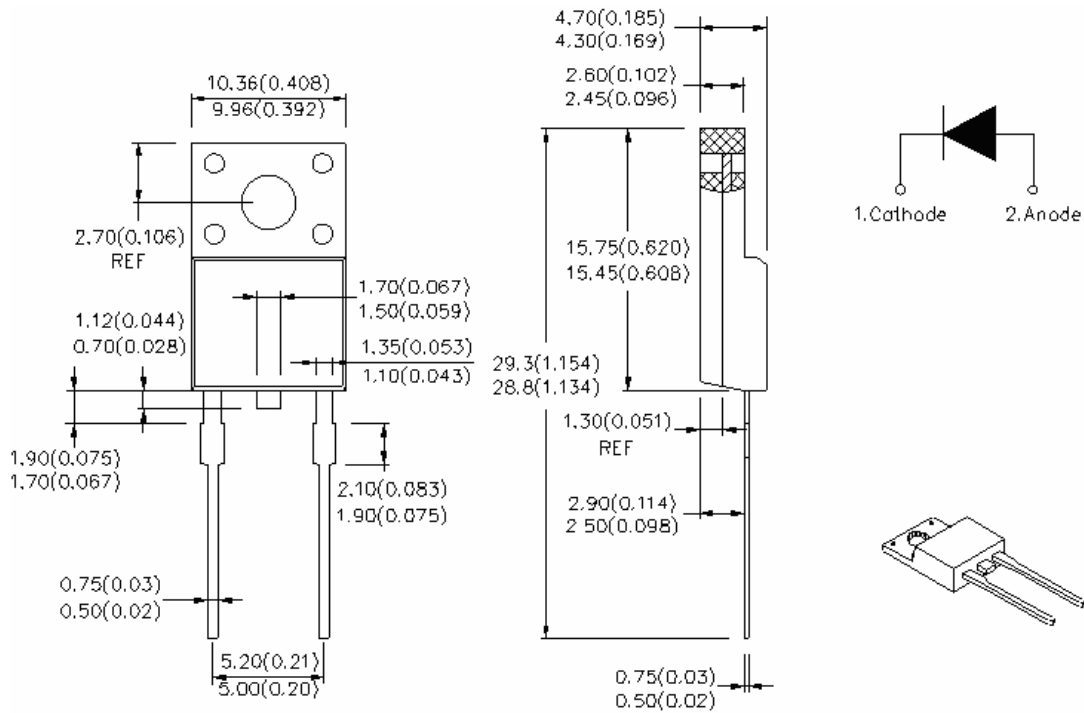
Symbol	Dimensions in millimeters		
	Min.	Typical	Max.
A	4.55	4.70	4.85
A1	1.17	1.27	1.37
A2	2.59	2.69	2.89
b	0.71	0.81	0.96
b1		1.27	
c	0.36	0.38	0.61
D	14.64	14.94	15.24
D1	8.55	8.07	8.85
E	10.01	10.16	10.31
E1	9.98	10.18	10.38
e1		5.08	
H1	6.04	6.24	6.44
L	13.00	13.86	14.08
L1		3.80	
ΦP	3.74	3.84	4.04
Q	2.54	2.74	2.94
Θ1		5°	
Θ2		4°	
Θ3		4°	

**TO-220AC**



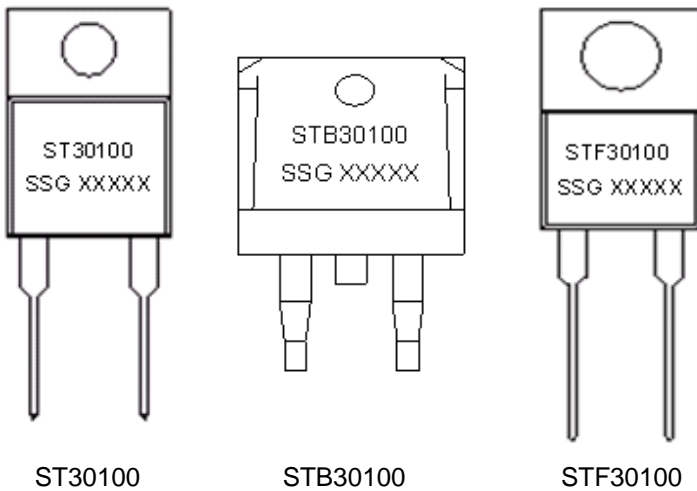
Symbol	Dimensions in millimeters		
	Min.	Typical	Max.
A	4.55	4.70	4.85
A1	0	0.10	0.25
A2	2.59	2.69	2.89
b	0.71	0.81	0.96
b1		1.27	
c	0.36	0.38	0.61
c1	1.17	1.27	1.37
D	8.55	8.70	8.85
D1	6.40		
E	10.01	10.16	10.31
E1	7.6		
E2	9.98	10.08	10.18
e		2.54	
H	14.6	15.1	15.6
L	2.00	2.30	2.70
L1	1.17	1.27	1.40
L2			2.20
L3		0.25BSC	
e	0	-	8°
e1		5°	
e2		4°	
e3		4°	

D<sup>2</sup>PAK



**ITO-220AC**

**Marking Diagram:**



Where XXXXX is YYWWL

ST                      = Device Type  
 B/F                    = Package type  
 30                     = Forward Current (30A)  
 100                    = Reverse Voltage (100V)  
 SSG                    = SSG  
 YY                     = Year  
 WW                    = Week  
 L                        = Lot Number

**Cautions:** Molding resin  
 Epoxy resin UL:94V-0

**Ordering Information:**

Device	Package	Shipping
ST30100	TO-220AC(Pb-Free)	50pcs/ tube
STB30100	D <sup>2</sup> PAK (Pb-Free)	800pcs / reel
STF30100	ITO-220AC(Pb-Free)	50pcs/ tube

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification.

**Maximum Ratings:**

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	-	100	V
Average Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_C=100^{\circ}C$ , rectangular wave form	30	A
Peak One Cycle Non-Repetitive Surge Current(per leg)	$I_{FSM}$	8.3 ms, half Sine pulse	300	A



**ST30100**  
**STB30100**  
**STF30100**

**Technical Data**  
**Data Sheet N1046, Rev. B**

**Green Products**

**Electrical Characteristics:**

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop (per leg)*	V <sub>F1</sub>	@ 5A, Pulse, T <sub>J</sub> = 25 °C	0.47	-	V
		@ 10A, Pulse, T <sub>J</sub> = 25 °C	0.54	-	
		@ 15A, Pulse, T <sub>J</sub> = 25 °C	0.61	0.68	
		@ 20A, Pulse, T <sub>J</sub> = 25 °C	0.68	-	
		@ 30A, Pulse, T <sub>J</sub> = 25 °C	0.82	0.90	
	V <sub>F2</sub>	@ 5A, Pulse, T <sub>J</sub> = 125 °C	0.38	-	V
		@ 10A, Pulse, T <sub>J</sub> = 125 °C	0.51	-	
		@ 15A, Pulse, T <sub>J</sub> = 125 °C	0.58	0.65	
		@ 20A, Pulse, T <sub>J</sub> = 125 °C	0.64	-	
		@ 30A, Pulse, T <sub>J</sub> = 125 °C	0.74	0.80	
Reverse Current at DC Condition (per leg)*	I <sub>R1</sub>	@ V <sub>R</sub> = 70V, T <sub>J</sub> = 25 °C	0.012	-	mA
		@ V <sub>R</sub> = 100V, T <sub>J</sub> = 25 °C	0.030	1	
	I <sub>R2</sub>	@ V <sub>R</sub> = 70V, T <sub>J</sub> = 125 °C	10	-	mA
		@ V <sub>R</sub> = 100V, T <sub>J</sub> = 125 °C	15	75	
Junction Capacitance (per leg)	C <sub>T</sub>	@ V <sub>R</sub> = 5V, T <sub>C</sub> = 25 °C f <sub>SIG</sub> = 1MHz	845	-	pF

\* Pulse Width < 300µs, Duty Cycle <2%

**Thermal-Mechanical Specifications:**

Characteristics	Symbol	ST30100	STB30100	STF30100	Units
Junction Temperature	T <sub>J</sub>	-55 to +150			°C
Storage Temperature	T <sub>stg</sub>	-55 to +150			°C
Typical Thermal Resistance Junction to Case(per leg)	R <sub>θJC</sub>	2.0	2.0	5.0	°C/W
Approximate Weight	wt	1.8	1.85	1.8	g
Case Style	TO-220AC/ D <sup>2</sup> PAK / ITO-220AC				

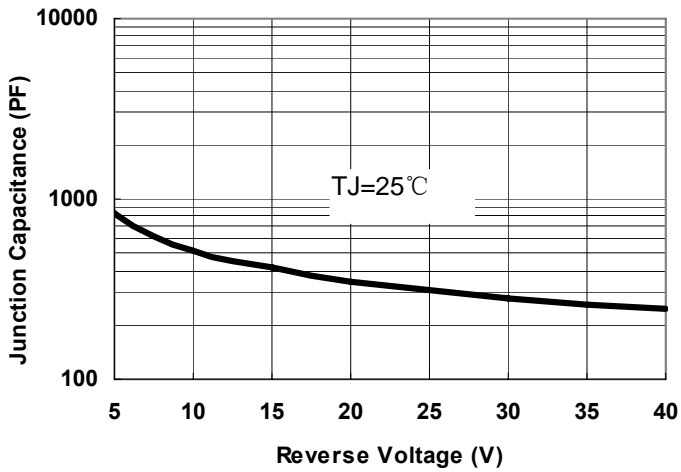


Fig.1-Typical Junction Capacitance

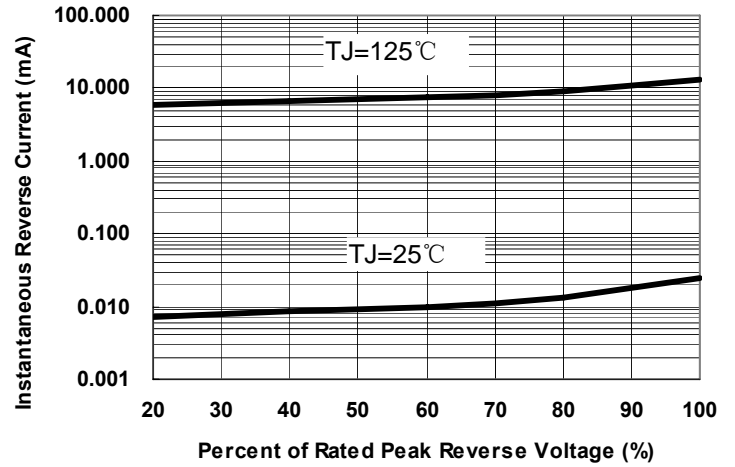


Fig.2-Typical Reverse Characteristics

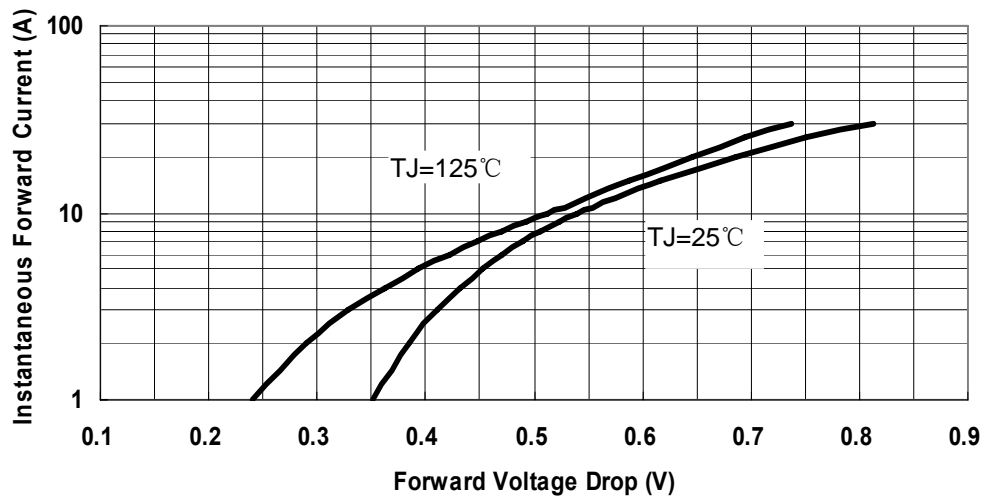


Fig.3-Typical Instantaneous Forward Voltage Characteristics



**ST30100**  
**STB30100**  
**STF30100**

**Technical Data**  
**Data Sheet N1046, Rev. B**

***Green Products***

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