

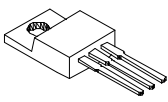
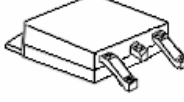
## ST10120C/STB10120C/STD10120C SCHOTTKY RECTIFIER

### Applications:

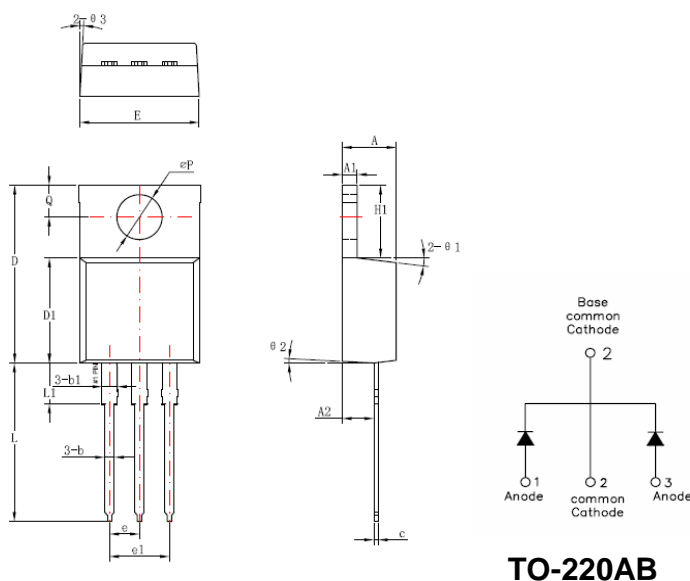
- Switching power supply
- Converters
- Free-Wheeling diodes
- Reverse battery protection

### Features:

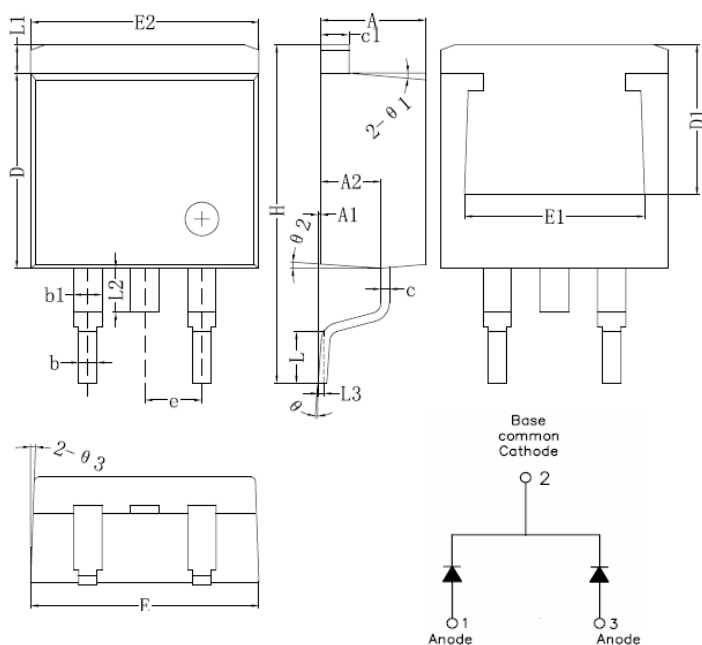
- 150 °C T<sub>J</sub> operation
- Center tap configuration
- Ultralow forward voltage drop
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- This is a Pb – Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

Case styles		
<p><b>ST10120C</b></p>  <p><b>TO-220AB</b></p>	<p><b>STB10120C</b></p>  <p><b>D²PAK</b></p>	<p><b>STD10120C</b></p>  <p><b>DPAK</b></p>

Mechanical Dimensions: In Inches / mm



Symbol	Dimensions in millimeters		
	Min	Typical	Max
A	4.42	4.57	4.72
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	14.94	15.24	15.54
D1	8.85	9.00	9.15
E	10.01	10.16	10.31
e		2.54	
e1		5.06	
H1	6.04	6.24	6.44
L	12.7	13.56	13.78
L1		3.5	
ΦP	3.74	3.84	4.04
Q	2.54	2.74	2.94
θ1		7°	
θ2		3°	
θ3		4°	

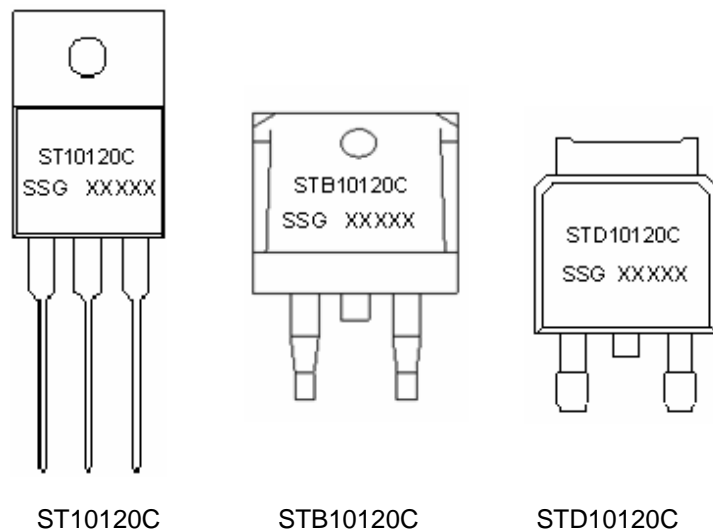


Symbol	Dimensions in millimeters		
	Min.	Typical	Max.
A	4.55	4.70	4.85
A1	0	0.10	0.25
A2	2.59	2.69	2.89
b	0.71	0.81	0.96
b1		1.27	
c	0.36	0.38	0.61
c1	1.17	1.27	1.37
D	8.55	8.70	8.85
D1	6.40		
E	10.01	10.16	10.31
E1	7.6		
E2	9.98	10.08	10.18
e		2.54	
H	14.6	15.1	15.6
L	2.00	2.30	2.70
L1	1.17	1.27	1.40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

**D<sup>2</sup>PAK**



**Marking Diagram:**



Where XXXXX is YYWWL

ST = Device Type  
 B/D = Package type  
 10 = Forward Current (10A)  
 120 = Reverse Voltage (120V)  
 C = Configuration  
 SSG = SSG  
 YY = Year  
 WW = Week  
 L = Lot Number

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

**Ordering Information:**

Device	Package	Shipping
ST10120C	TO-220AB(Pb-Free)	50pcs / tube
STB10120C	D <sup>2</sup> PAK(Pb-Free)	800pcs / reel
STD10120C	DPAK(Pb-Free)	2500pcs / reel

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 Inverse Voltage	$V_{RWM}$	-	120	V
Average Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_C=100^{\circ}C$ , rectangular wave form	10	A
Peak One Cycle Non-Repetitive Surge Current (per leg)	$I_{FSM}$	8.3 ms, half Sine pulse	120	A

**Electrical Characteristics:**

Characteristics	Symbol	Condition	Max.	Units
Forward Voltage Drop (per leg)*	V <sub>F1</sub>	@ 5A, Pulse, T <sub>J</sub> = 25 °C	0.88	V
	V <sub>F2</sub>	@ 5A, Pulse, T <sub>J</sub> = 125 °C	0.71	V
Reverse Current (per leg)*	I <sub>R1</sub>	@V <sub>R</sub> = rated V <sub>R</sub> T <sub>J</sub> = 25 °C	0.5	mA
	I <sub>R2</sub>	@V <sub>R</sub> = rated V <sub>R</sub> T <sub>J</sub> = 125 °C	35	mA
Junction Capacitance (per leg)	C <sub>T</sub>	@V <sub>R</sub> = 5V, T <sub>C</sub> = 25 °C f <sub>SIG</sub> = 1MHz	300	pF
Voltage Rate of Change	dv/dt	-	10,000	V/μs

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

**Thermal-Mechanical Specifications:**

Characteristics	Symbol	ST10120C	STB10120C	STD10120C	Units
Junction Temperature	T <sub>J</sub>	-55 to +150			°C
Storage Temperature	T <sub>stg</sub>	-55 to +150			°C
Maximum Thermal Resistance Junction to Case(per leg)*	R <sub>θJC</sub>	3.0	3.0	2.4	°C/W
Approximate Weight	wt	2	1.85	0.39	g
Case Style	TO-220AB/ D <sup>2</sup> PAK/ DPAK				



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