

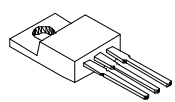
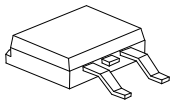
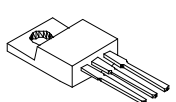
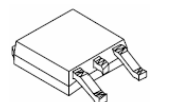
## ST12100C/STB12100C/STF12100C/STD12100C SCHOTTKY RECTIFIER

### Applications:

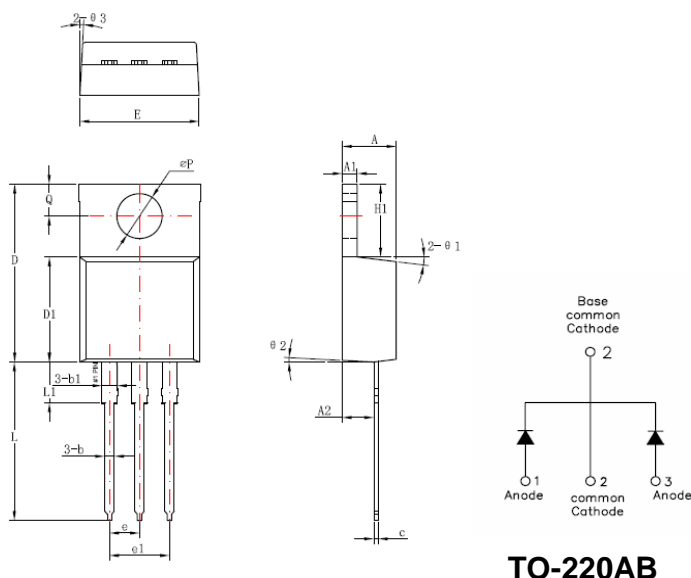
- Switching power supply
- Converters
- Free-Wheeling diodes
- Reverse battery protection

### Features:

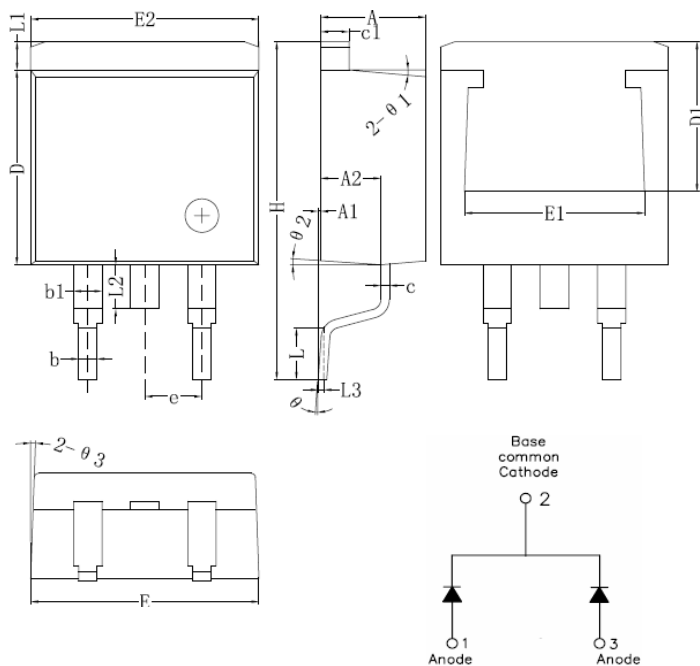
- 150 °C T<sub>J</sub> operation
- Center tap configuration
- Ultralow forward voltage drop
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- This is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

Case styles			
<p><b>ST12100C</b></p>  <p><b>TO-220AB</b></p>	<p><b>STB12100C</b></p>  <p><b>D<sup>2</sup>PAK</b></p>	<p><b>STF12100C</b></p>  <p><b>ITO-220AB</b></p>	<p><b>STD12100C</b></p>  <p><b>DPAK</b></p>

Mechanical Dimensions: In Inches / mm

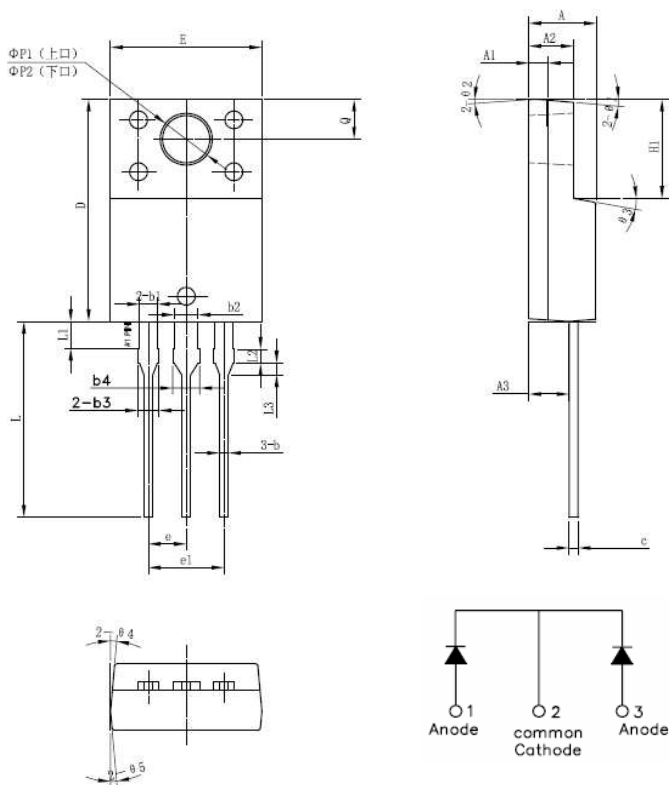


Symbol	Dimensions in millimeters		
	Min	Typical	Max
A	4.42	4.57	4.72
A1	1.17	1.27	1.37
A2	2.59	2.69	2.89
b	0.71	0.81	0.96
b1		1.27	
c	0.36	0.38	0.61
D	14.94	15.24	15.54
D1	8.85	9.00	9.15
E	10.01	10.16	10.31
e		2.54	
e1		5.06	
H1	6.04	6.24	6.44
L	12.7	13.56	13.78
L1		3.5	
ΦP	3.74	3.84	4.04
Q	2.54	2.74	2.94
θ1		7°	
θ2		3°	
θ3		4°	



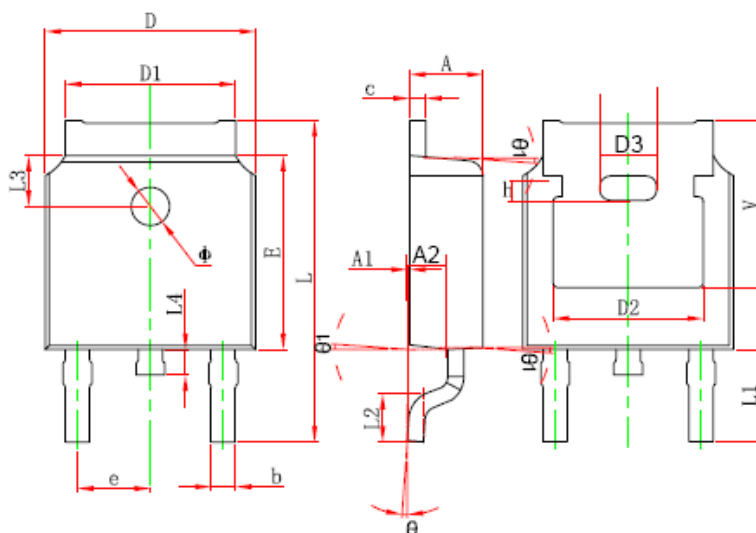
Symbol	Dimensions in millimeters		
	Min.	Typical	Max.
A	4.55	4.70	4.85
A1	0	0.10	0.25
A2	2.59	2.69	2.89
b	0.71	0.81	0.96
b1		1.27	
c	0.36	0.38	0.61
c1	1.17	1.27	1.37
D	8.55	8.70	8.85
D1	6.40		
E	10.01	10.16	10.31
E1	7.6		
E2	9.98	10.08	10.18
e		2.54	
H	14.6	15.1	15.6
L	2.00	2.30	2.70
L1	1.17	1.27	1.40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

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

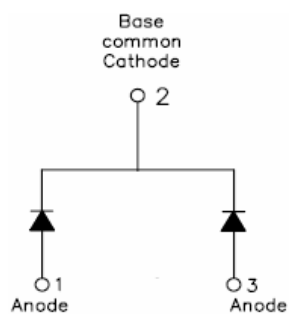


SYMBOL	MIN.	TYP.	MAX.
A	4.30	4.50	4.70
A1	1.10	1.30	1.50
A2	2.80	3.00	3.20
A3	2.50	2.70	2.90
b	0.50	0.60	0.75
b1	1.10	1.20	1.35
b2	1.50	1.60	1.75
b3	1.20	1.30	1.45
b4	1.60	1.70	1.85
c	0.55	0.60	0.75
D	14.80	15.00	15.20
E	9.96	10.16	10.36
e		2.55	
e1		5.10	
H1	6.50	6.70	6.90
L	12.70	13.20	13.70
L1	1.60	1.80	2.00
L2	0.80	1.00	1.20
L3	0.60	0.80	1.00
$\phi P1$ (上孔)	3.30	3.50	3.70
$\phi P2$ (下孔)	2.99	3.19	3.39
Q	2.50	2.70	2.90
$\theta 1$		5°	
$\theta 2$		4°	
$\theta 3$		10°	
$\theta 4$		5°	
$\theta 5$		5°	

ITO-220AB

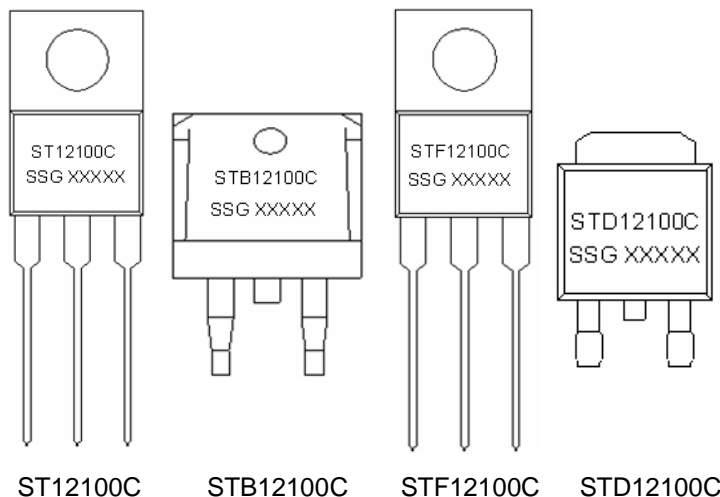


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.380	0.087	0.094
A1	0.000	0.100	0.000	0.004
b	0.710	0.810	0.028	0.032
c	0.480	0.560	0.018	0.022
D	6.500	6.700	0.256	0.264
D1	5.130	5.460	0.202	0.215
D2	4.830 REF.		0.190 REF.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	0.086	0.094
L	9.800	10.400	0.386	0.409
L1	2.900 REF.		0.114 REF.	
L2	1.400	1.700	0.055	0.067
L3	1.600 REF.		0.063 REF.	
L4	0.600	1.000	0.024	0.039
Φ	1.100	1.300	0.043	0.051
θ	0°	8°	0°	8°
A2	0.910	1.110	0.036	0.044
V	5.350 REF.		0.211 REF.	
D3	1.776 REF.		0.070 REF.	
h	0.762 REF.		0.030 REF.	
θ1	7°		7°	



**DPAK**

**Marking Diagram:**



Where XXXXX is YYWWL

ST	= Device Type
B/F/D	= Package type
12	= Forward Current (12A)
100	= Reverse Voltage (100V)
C	= Configuration
SSG	= SSG
YY	= Year
WW	= Week
L	= Lot Number

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

**Ordering Information:**

Device	Package	Shipping
ST12100C	TO-220AB(Pb-Free)	50pcs / tube
STB12100C	D <sup>2</sup> PAK(Pb-Free)	800pcs / reel
STF12100C	ITO-220AB(Pb-Free)	50pcs / tube
STD12100C	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	$V_{RWM}$	-	100	V
Average Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_C=100^\circ\text{C}$ , rectangular wave form	12	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>	@ 6A, Pulse, T <sub>J</sub> = 25 °C	0.75	V
	V <sub>F2</sub>	@ 6A, Pulse, T <sub>J</sub> = 125 °C	0.70	V
Reverse Current (per leg)*	I <sub>R1</sub>	@ V <sub>R</sub> = rated V <sub>R</sub> T <sub>J</sub> = 25 °C	0.15	mA
	I <sub>R2</sub>	@ V <sub>R</sub> = rated V <sub>R</sub> T <sub>J</sub> = 125 °C	25	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	400	pF
Voltage Rate of Change	dv/dt	-	10,000	V/μs

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

### Thermal-Mechanical Specifications:

Characteristics	Symbol	ST12100C	STB12100C	STD12100C	STF12100C	Units
Max. Junction Temperature	T <sub>J</sub>	-55 to +150				°C
Max. 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	5.5	°C/W
Approximate Weight	wt	2	1.85	0.39	2	g
Case Style		TO-220AB/ D <sup>2</sup> PAK/ DPAK/ ITO-220AB				

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