




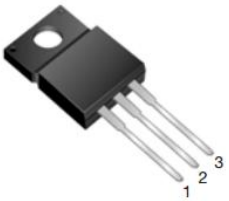
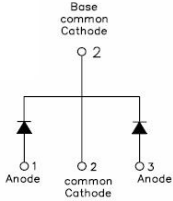
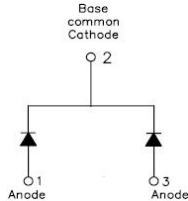
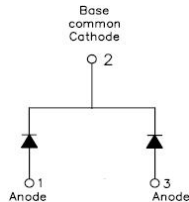
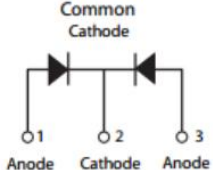
# ST15100C/STB15100C/STF15100C/STD15100C SCHOTTKY RECTIFIER

## Applications

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

## Features

- 150 °C T<sub>J</sub> operation
- Ultralow forward voltage drop
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- High frequency operation
- Terminals finish: Tin Lead-free plated
- Trench MOS Schottky technology
- This is a Pb – Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

ST15100C	STB15100C	STD15100C	STF15100C
			
			
TO-220AB	D <sup>2</sup> PAK	DPAK	ITO-220AB

## Maximum Ratings(limiting values, at 25 °C unless otherwise specified)

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V <sub>RRM</sub> V <sub>RWM</sub> V <sub>R</sub>	-	100	V
Average Rectified Forward Current	I <sub>F (AV)</sub>	T <sub>c</sub> =134°C(TO-220AB, D2PAK) T <sub>c</sub> =139°C(DPAK) T <sub>c</sub> =119°C(ITO-220AB), In DC	7.5(Per Leg) 15(Per Device)	A
Peak One Cycle Non-Repetitive Surge Current(Per Leg)	I <sub>FSM</sub>	8.3ms, Half Sine pulse	120	A

- China - Germany - Korea - Singapore - United States •
- <http://www.smc-diodes.com> - [sales@smc-diodes.com](mailto:sales@smc-diodes.com) •

## Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop(Per Leg)*	$V_{F1}$	@ 7.5A, Pulse, $T_J = 25\text{ }^{\circ}\text{C}$	0.67	0.75	V
	$V_{F2}$	@ 7.5A, Pulse, $T_J = 125\text{ }^{\circ}\text{C}$	0.58	0.70	V
Reverse Current(Per Leg)*	$I_{R1}$	@ $V_R = \text{rated } V_R$ $T_J = 25\text{ }^{\circ}\text{C}$	0.008	0.18	mA
	$I_{R2}$	@ $V_R = \text{rated } V_R$ $T_J = 125\text{ }^{\circ}\text{C}$	6	30	mA
Junction Capacitance	$C_T$	@ $V_R = 5\text{V}$ , $T_C = 25\text{ }^{\circ}\text{C}$ $f_{\text{SIG}} = 1\text{MHz}$	377	-	pF

\* Pulse width < 300  $\mu\text{s}$ , duty cycle < 2%

## Thermal-Mechanical Specifications:

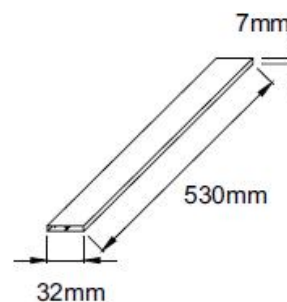
Characteristics	Symbol	ST15100C	STB15100C	STD15100C	STF15100C	Units
Junction Temperature	$T_J$	-55 to +150				$^{\circ}\text{C}$
Storage Temperature	$T_{\text{stg}}$	-55 to +150				$^{\circ}\text{C}$
Typical Thermal Resistance Junction to Case(Per Leg)	$R_{\theta\text{JC}}$	2.8	2.8	2.0	5.5	$^{\circ}\text{C/W}$

## Tube Specification

Device	Package	Weight	Shipping
ST15100C	TO-220AB	2.0	50pcs / tube
STB15100C	D <sup>2</sup> PAK	1.85	800pcs / reel
STD15100C	DPAK	0.39	2500pcs / reel
STF15100C	ITO-220AB	2.0	50pcs / tube

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

## Tube Specification(TO-220AB/ITO-220AB)



## Ratings and Characteristics Curves

Figure 1 Typical Forward Characteristics

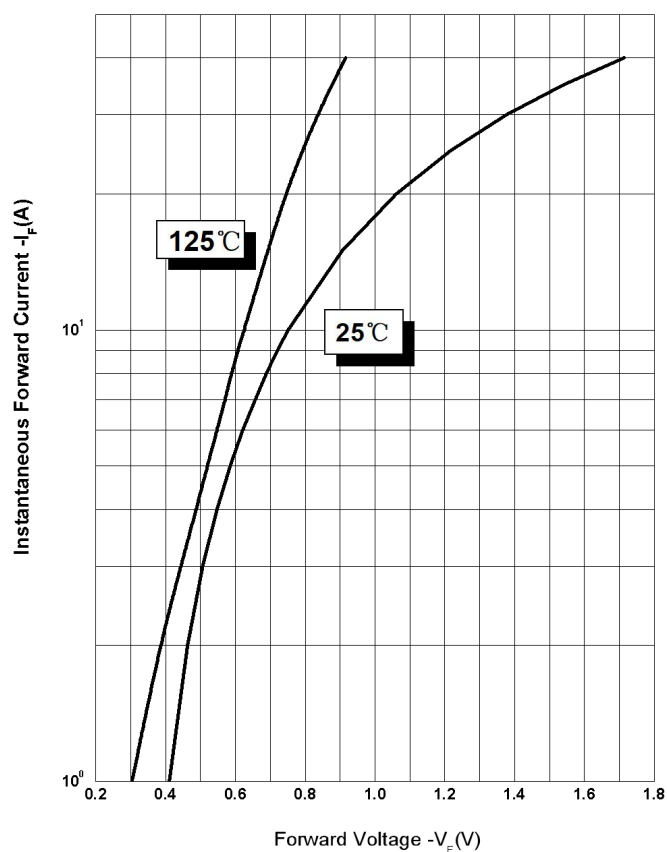


Figure 2 Typical Reverse Characteristics

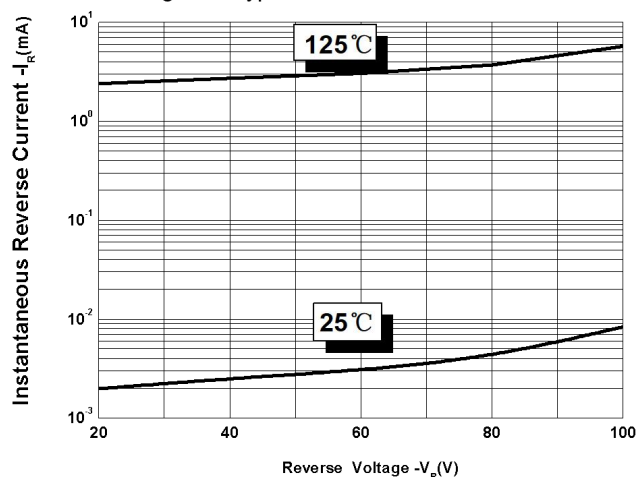
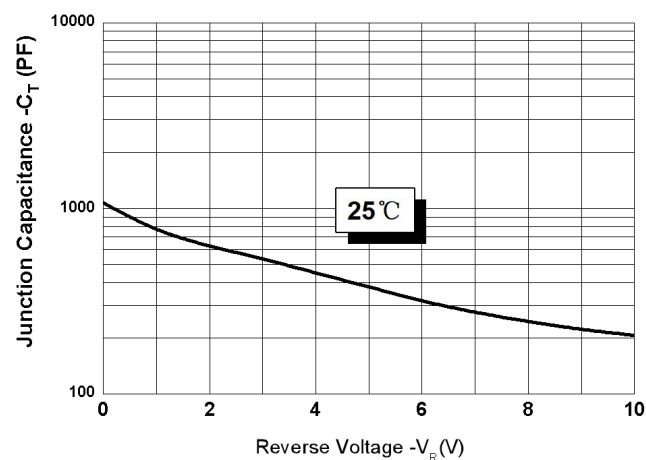
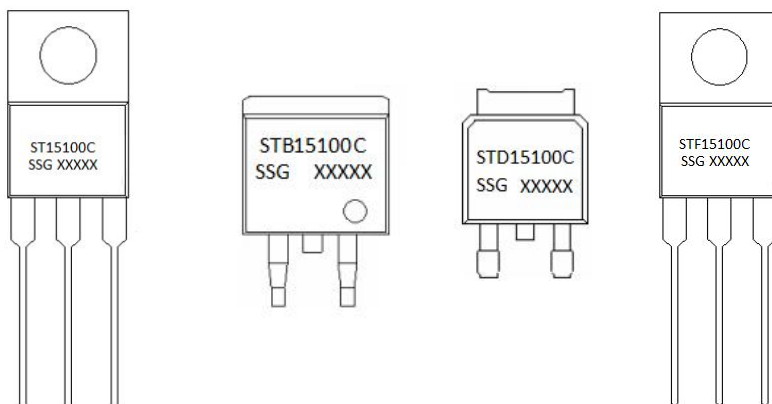


Figure 3 Typical Junction Capacitance



## Marking Diagram

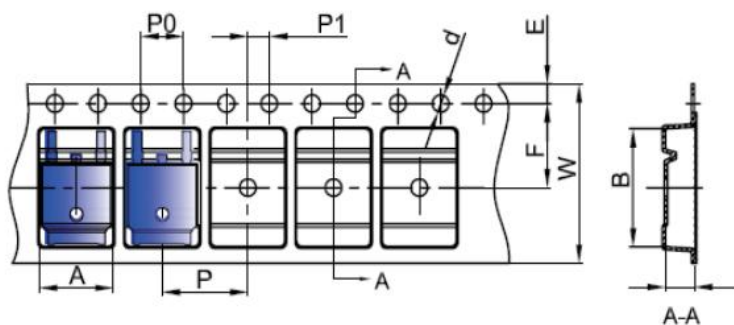


Where XXXXX is YYWWL

ST = Device Type  
 B/D/F = Package type  
 15 = Forward Current (15A)  
 100 = Reverse Voltage (100V)  
 C = Configuration  
 SSG = SSG  
 YY = Year  
 WW = Week  
 L = Lot Number

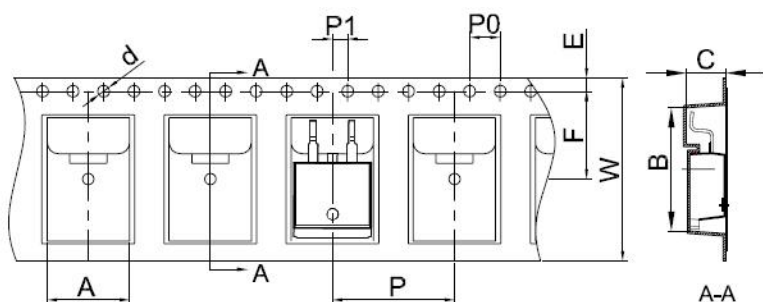
**Cautions:** Molding resin  
 Epoxy resin UL:94V-0

## Carrier Tape Specification DPAK



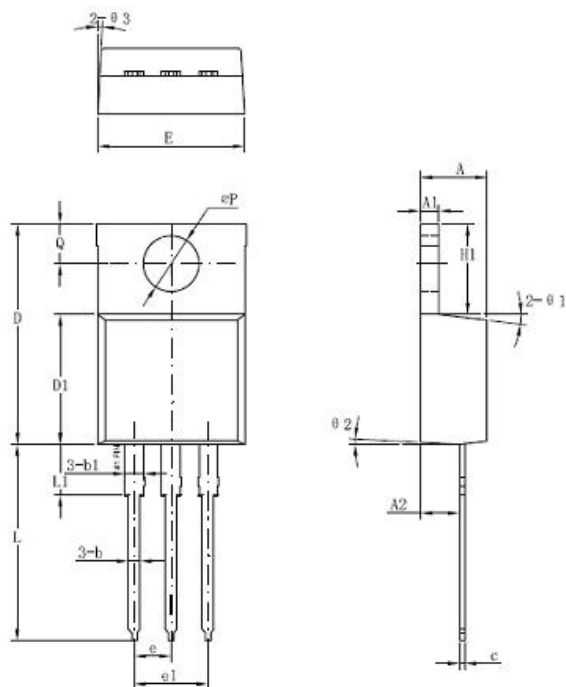
SYMBOL	Millimeters	
	Min.	Max.
A	6.80	7.00
B	10.40	10.60
C	2.60	2.80
d	Φ1.45	Φ1.65
E	1.65	1.85
F	7.40	7.60
P0	3.90	4.10
P	7.90	8.10
P1	1.90	2.10
W	15.90	16.30

## Carrier Tape Specification D2PAK



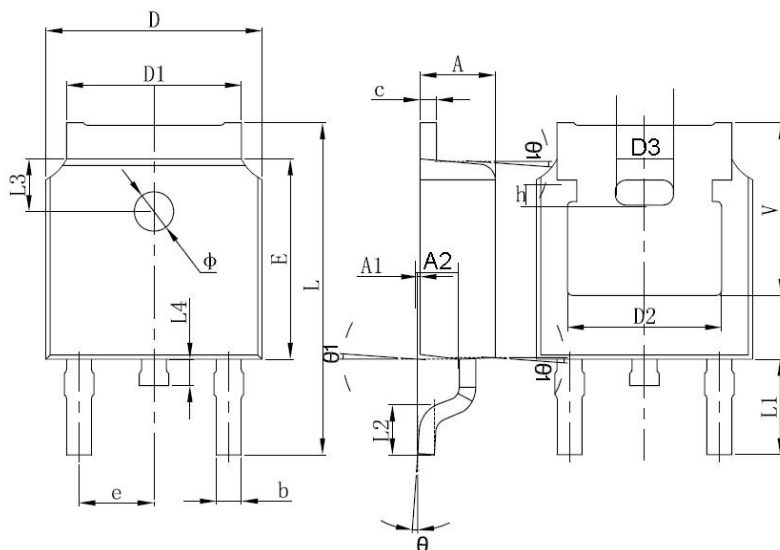
SYMBOL	Millimeters	
	Min.	Max.
A	10.70	10.90
B	16.03	16.23
C	5.11	5.31
d	1.45	1.65
E	1.65	1.85
F	11.40	11.60
P0	3.90	4.10
P	15.90	16.10
P1	1.90	2.10
W	23.90	24.30

## Mechanical Dimensions TO-220AB



Symbol	Dimensions in millimeters		
	Min	Typical	Max
A	3.56	-	4.83
A1	0.51	-	1.4
A2	2.03	-	2.92
b	0.38	-	1.02
b1	1.14	-	1.78
c	0.31	-	0.61
D	14.22	-	16.51
D1	8.38	-	9.42
E	9.65	-	10.67
e	-	2.54	-
e1	-	5.08	-
H1	5.84	-	6.86
L	12.7	-	14.73
L1	-	-	6.35
ΦP	-	3.56	-
Q	2.54	-	3.43

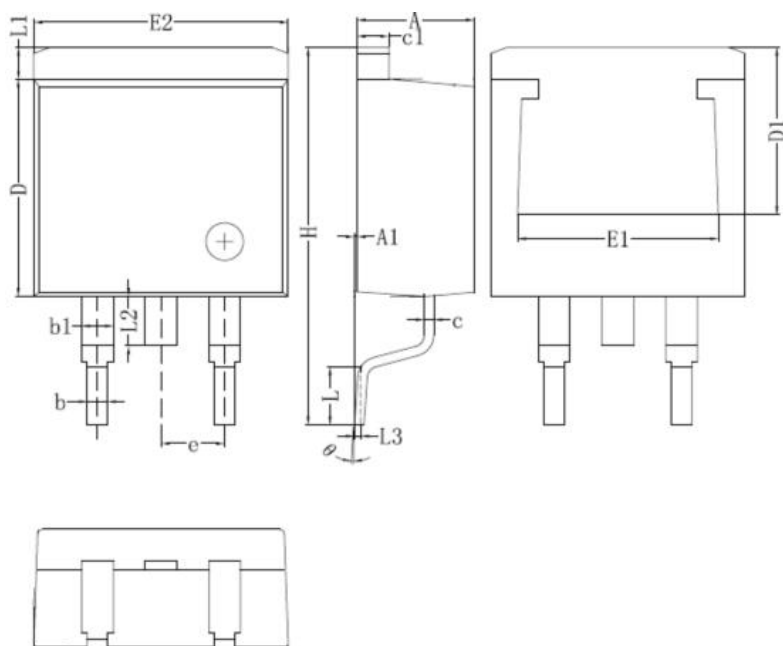
## Mechanical Dimensions DPAK



Symbol	Dimensions in millimeters		
	Min.	Typical	Max.
A	2.18	-	2.39
A1	-	-	0.13
b	0.64	-	0.89
c	0.46	-	0.89
D	6.35	-	6.73
D1	4.95	-	5.46
D2	4.32	-	-
E	5.97	6.1	6.22
e	2.29BSC		
L	9.4	-	10.41
L1	2.90 REF.		
L2	1.4	1.52	1.78
L3	1.60 REF.		
L4	-	-	1.02
Φ	1.1	-	1.3
Θ	0°	-	10°
V	5.21	-	-

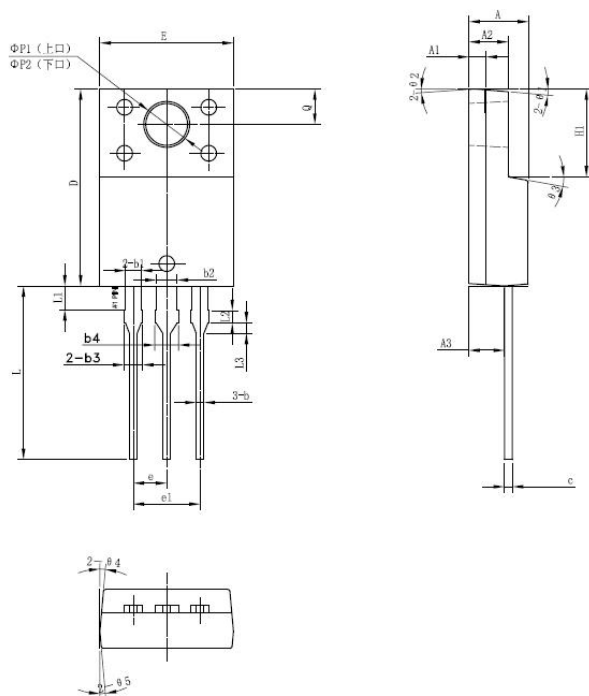
The outline from different package houses may have slight differences. So the outline above is just schematic. The dimensions are controlled per specifications.

## Mechanical Dimensions D<sup>2</sup>PAK



Symbol	Dimensions in millimeters	
	Min.	Max.
A	4.06	4.83
A1	0	0.26
b	0.51	0.99
b1	1.14	1.78
c	0.31	0.74
c1	1.14	1.65
D	8.38	9.65
D1	6.4	
E1	6.22	
E2	9.65	10.67
e	2.54BSC	
H	14.6	15.88
L	1.78	2.8
L1	-	1.68
L2	-	2.2
L3	0.255BSC	
Θ	0	8°

## Mechanical Dimensions ITO-220AB



Symbol	Dimensions in millimeters		
	Min.	Typical	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	0.50	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
ΦP1(上口)	3.30	3.50	3.70
ΦP2(下口)	2.99	3.19	3.39
Q	2.50	2.70	2.90
Θ1		5°	
Θ2		4°	
Θ3		10°	
Θ4		5°	
Θ5		5°	

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