

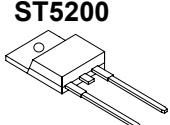



## ST5200/STB5200/STF5200/STD5200 SCHOTTKY RECTIFIER

### Applications:

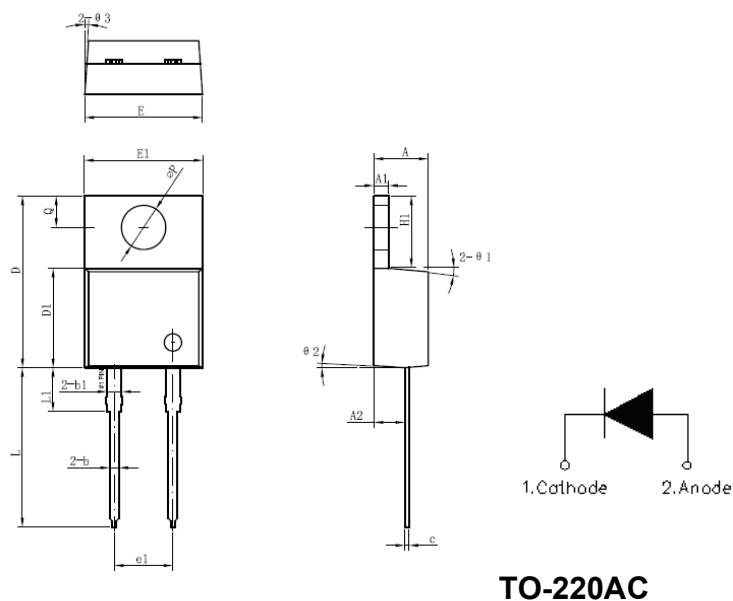
- Switching power supply
- Converters
- Free-Wheeling diodes
- Reverse battery protection

### Features:

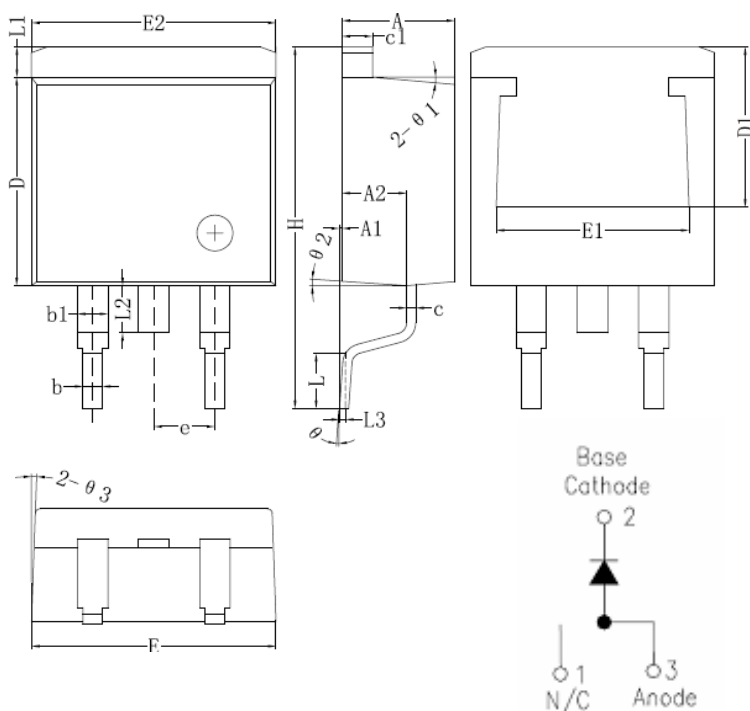
- 150 °C T<sub>J</sub> operation
- Center tap configuration
- Ultralow forward voltage drop
- High purity, high temperature epoxy encapsulation for enhanced mechanical strength and moisture resistance
- High frequency operation
- Guard ring for enhanced ruggedness and long term reliability
- This is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

Case styles			
 <b>ST5200</b> <b>TO-220AC</b>	 <b>STB5200</b> <b>D<sup>2</sup>PAK</b>	 <b>STF5200</b> <b>ITO-220AC</b>	 <b>STD5200</b> <b>DPAK</b>

Mechanical Dimensions: In Inches / mm

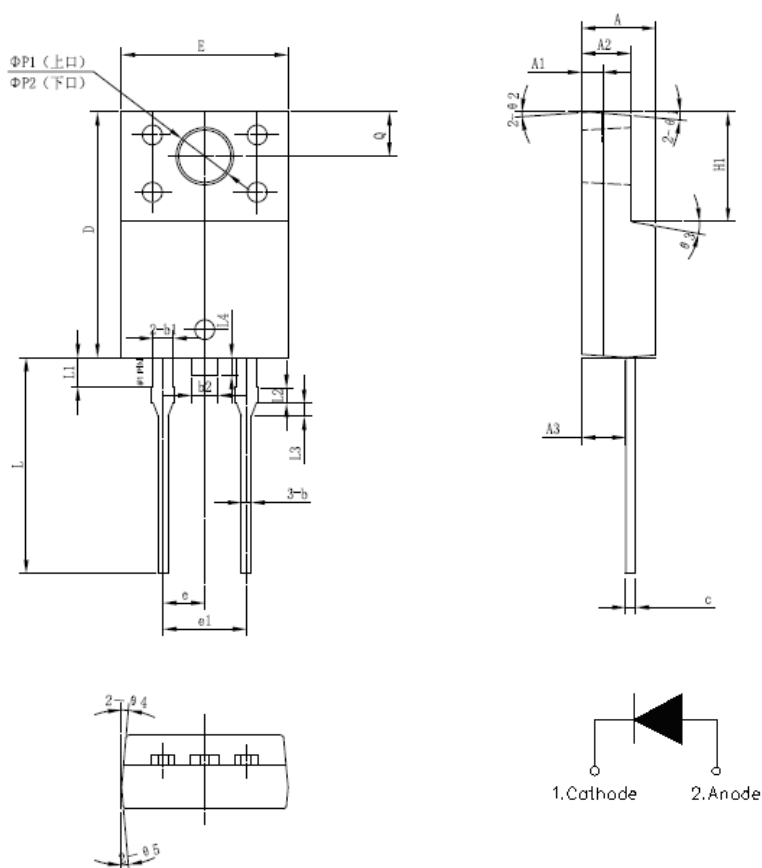


Symbol	Dimensions in millimeters		
	Min.	Typical	Max.
A	4.55	4.70	4.85
A1	1.17	1.27	1.37
A2	2.59	2.69	2.89
b	0.71	0.81	0.96
b1		1.27	
c	0.36	0.38	0.61
D	14.64	14.94	15.24
D1	8.55	8.07	8.85
E	10.01	10.16	10.31
E1	9.98	10.18	10.38
e1		5.08	
H1	6.04	6.24	6.44
L	13.00	13.86	14.08
L1		3.80	
ΦP	3.74	3.84	4.04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



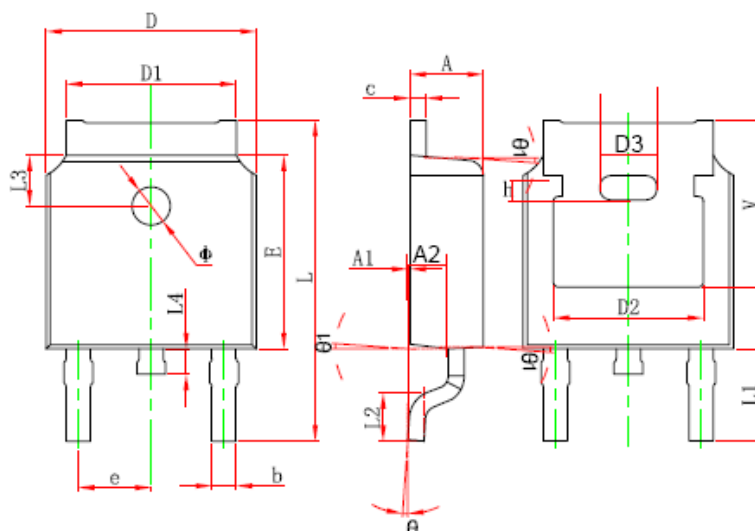
Symbol	Dimensions in millimeters		
	Min.	Typical	Max.
A	4.55	4.70	4.85
A1	0	0.10	0.25
A2	2.59	2.69	2.89
b	0.71	0.81	0.96
b1		1.27	
c	0.36	0.38	0.61
c1	1.17	1.27	1.37
D	8.55	8.70	8.85
D1	6.40		
E	10.01	10.16	10.31
E1	7.6		
E2	9.98	10.08	10.18
e		2.54	
H	14.6	15.1	15.6
L	2.00	2.30	2.70
L1	1.17	1.27	1.40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

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

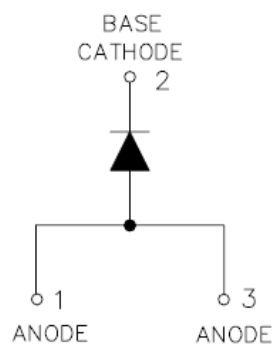


SYMBOL	MIN.	TYP.	MAX.
A	4.30	4.50	4.70
A1	1.10	1.30	1.50
A2	2.80	3.00	3.20
A3	2.50	2.70	2.90
b	0.50	0.60	0.75
b1	1.10	1.20	1.35
b2	1.50	1.60	1.75
c	0.55	0.60	0.75
D	14.80	15.00	15.20
E	9.96	10.16	10.36
e	-	2.55	-
e1	-	5.10	-
H1	6.50	6.70	6.90
L	12.70	13.20	13.70
L1	1.60	1.80	2.00
L2	0.80	1.00	1.20
L3	0.60	0.80	1.00
L4	-	1.10	1.50
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°	

ITO-220AC

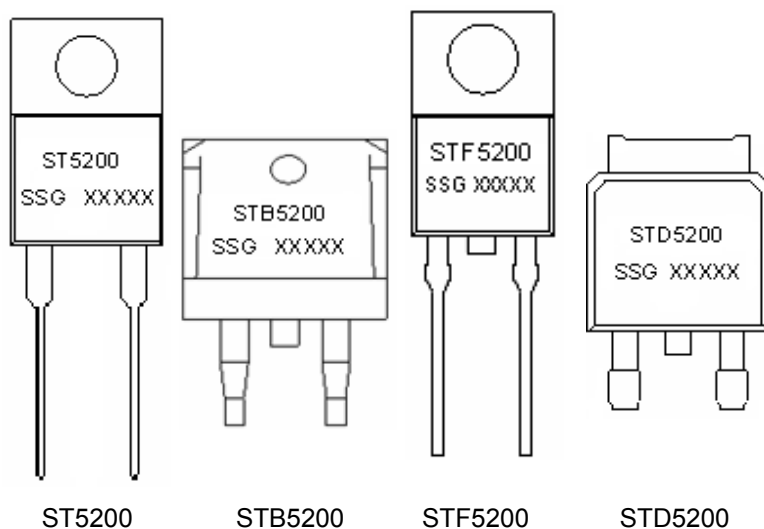


Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	2.200	2.380	0.087	0.094
A1	0.000	0.100	0.000	0.004
b	0.710	0.810	0.028	0.032
c	0.460	0.560	0.018	0.022
D	6.500	6.700	0.256	0.264
D1	5.130	5.460	0.202	0.215
D2	4.830 REF.		0.190 REF.	
E	6.000	6.200	0.236	0.244
e	2.186	2.386	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	1.778 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  
5 = Forward Current (5A)  
200 = Reverse Voltage (200V)  
SSG = SSG  
YY = Year  
WW = Week  
L = Lot Number

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

Ordering Information:

Device	Package	Shipping
ST5200	TO-220AC(Pb-Free)	50pcs / tube
STB5200	D <sup>2</sup> PAK(Pb-Free)	800pcs / reel
STF5200	ITO-220AC(Pb-Free)	50pcs / tube
STD5200	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	$V_{RWM}$	-	200	V
Average Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_C=100^\circ\text{C}$ , rectangular wave form	5	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	Typ.	Max.	Units
Breakdown Voltage	$V_{BR}$	@ $I_R = 1.0\text{mA}$ , $T_J = 25\text{ }^\circ\text{C}$	200(minimum)	-	V
Forward Voltage Drop (Note 1) *	$V_{F1}$	@ 2.5A, Pulse, $T_J = 25\text{ }^\circ\text{C}$	0.81	-	V
		@ 5A, Pulse, $T_J = 25\text{ }^\circ\text{C}$	1.10	1.60	V
	$V_{F2}$	@ 2.5A, Pulse, $T_J = 125\text{ }^\circ\text{C}$	0.58	-	V
		@ 5A, Pulse, $T_J = 125\text{ }^\circ\text{C}$	0.65	0.73	V
Reverse Current(Note 2) *	$I_{R1}$	@ $V_R = 180\text{V}$ $T_J = 25\text{ }^\circ\text{C}$	1.7	-	$\mu\text{A}$
		@ $V_R = 200\text{V}$ $T_J = 25\text{ }^\circ\text{C}$	-	150	$\mu\text{A}$
	$I_{R2}$	@ $V_R = 180\text{V}$ , $T_J = 125\text{ }^\circ\text{C}$	1.8	-	mA
		@ $V_R = 200\text{V}$ , $T_J = 125\text{ }^\circ\text{C}$	2.5	10	mA

Note: (1) Pulse test: Pulse Width < 300 $\mu\text{s}$ , Duty Cycle <1%  
(2) Pulse test: Pulse Width < 40ms

### Thermal-Mechanical Specifications:

Characteristics	Symbol	ST5200	STB5200	STD5200	STF5200	Units
Junction Temperature	$T_J$	-55 to +150				$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55 to +150				$^\circ\text{C}$
Maximum Thermal Resistance Junction to Case(per leg)*	$R_{\theta JC}$	3.5	3.5	2.4	7.0	$^\circ\text{C/W}$
Approximate Weight	wt	1.8	1.85	0.39	1.8	g
Case Style		TO-220AC/ D <sup>2</sup> PAK/ DPAK/ ITO-220AC				



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