

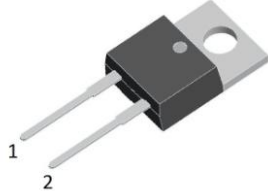
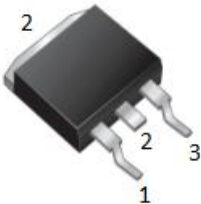
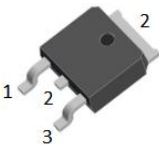
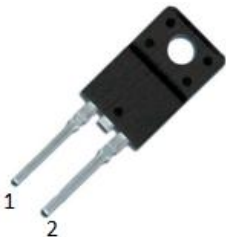
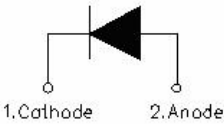
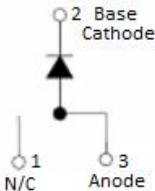
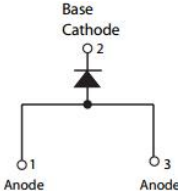
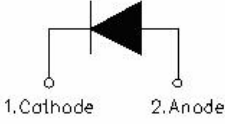
ST5200/STB5200/STF5200/STD5200 SCHOTTKY RECTIFIER

Applications

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

Features

- 150 °C T_J 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
- 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

ST5200	STB5200	STD5200	STF5200
			
			
TO-220AC	D ² PAK	DPAK	ITO-220AC

Maximum Ratings:

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V _{RRM} V _{RWM} V _R	-	200	V
Average Rectified Forward Current	I _{F(AV)}	50% duty cycle @T _C =100°C, rectangular wave form	5	A
Peak One Cycle Non-Repetitive Surge Current	I _{FSM}	8.3ms, Half Sine pulse, T _C = 25 °C	120	A

Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Breakdown Voltage	V_{BR}	@ $I_R = 1.0mA$, $T_J = 25\text{ }^\circ C$	200(minimum)	-	V
Forward Voltage Drop (Note 1) *	V_{F1}	@ 3A, Pulse, $T_J = 25\text{ }^\circ C$	0.76	-	V
		@ 5A, Pulse, $T_J = 25\text{ }^\circ C$	0.80	1.60	V
	V_{F2}	@ 3A, Pulse, $T_J = 125\text{ }^\circ C$	0.61	-	V
		@ 5A, Pulse, $T_J = 125\text{ }^\circ C$	0.68	0.73	V
Reverse Current(Note 2) *	I_{R1}	@ $V_R = 180V$ $T_J = 25\text{ }^\circ C$	0.1	-	μA
		@ $V_R = 200V$ $T_J = 25\text{ }^\circ C$	0.2	150	μA
	I_{R2}	@ $V_R = 180V$, $T_J = 125\text{ }^\circ C$	0.3	-	mA
		@ $V_R = 200V$, $T_J = 125\text{ }^\circ C$	0.4	10	mA
Junction Capacitance	C_T	@ $V_R = 5V$, $T_C = 25\text{ }^\circ C$ $f_{SIG} = 1MHz$	100	-	pF

Note: 1 Pulse test: Pulse Width < 300 μs , Duty Cycle < 1%
 2 Pulse test: Pulse Width < 40ms

Thermal-Mechanical Specifications:

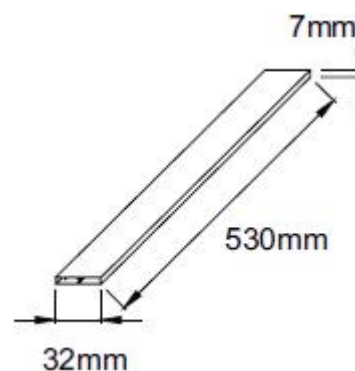
Characteristics	Symbol	ST5200	STB5200	STD5200	STF5200	Units
Junction Temperature	T_J	-55 to +150				$^\circ C$
Storage Temperature	T_{stg}	-55 to +150				$^\circ C$
Typical Thermal Resistance Junction to Case	$R_{\theta JC}$	3.5	3.5	2.4	7.0	$^\circ C/W$
Case Style	TO-220AC/ D ² PAK/ DPAK/ ITO-220AC					

Tube Specification

Device	Package	Weight	Shipping
ST5200	TO-220AC	1.6g	50pcs / tube
STB5200	D ² PAK	1.85g	800pcs / reel
STD5200	DPAK	0.39g	2500pcs / reel
STF5200	ITO-220AC	1.6g	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-220AC/ITO-220AC)



Ratings and Characteristics Curves

Figure 1
Typical Forward Characteristics

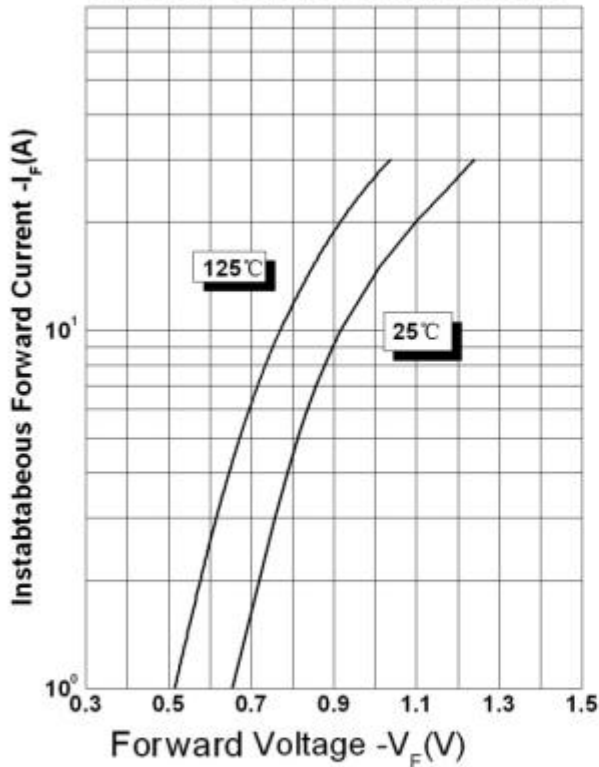


Figure 2
Typical Reverse Characteristics

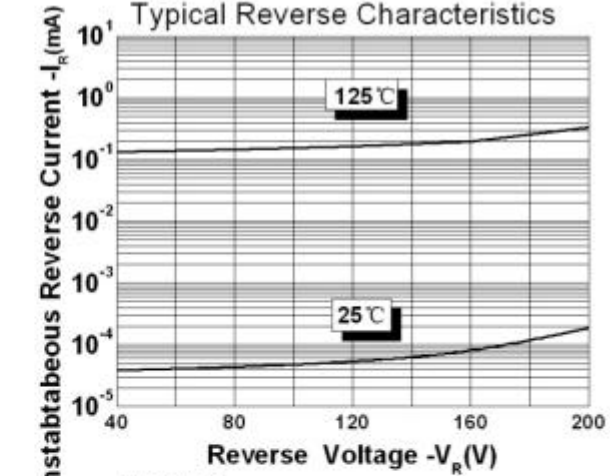
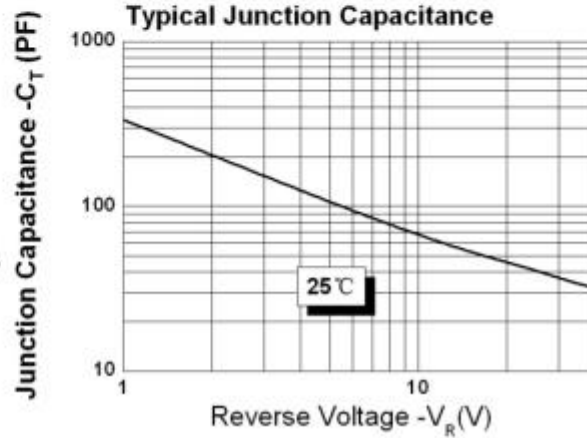
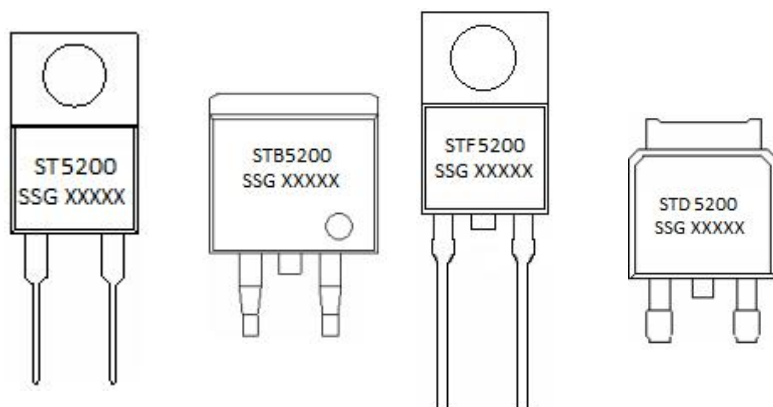


Figure 3
Typical Junction Capacitance



Marking Diagram

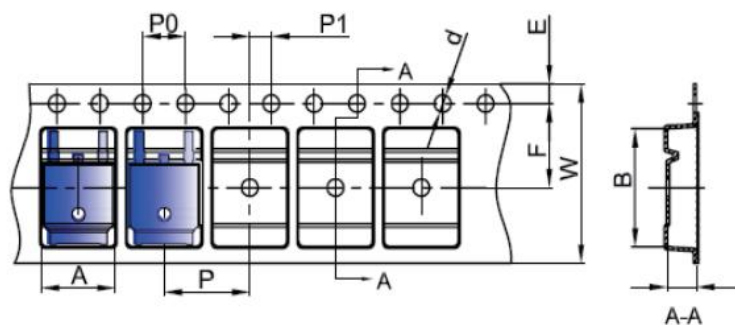


Where XXXXX is YYWWL

ST = Device Type
 B/D/F = Package type
 5 = Forward Current (5A)
 200 = Reverse Voltage (200V)
 SSG = SSG
 YY = Year
 WW = Week
 L = Lot Number

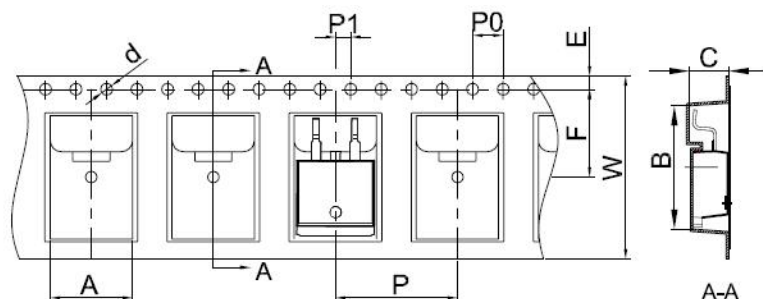
Cautions: Molding resin
 Epoxy resin UL:94V-0

Carrier Tape Specification DPAK



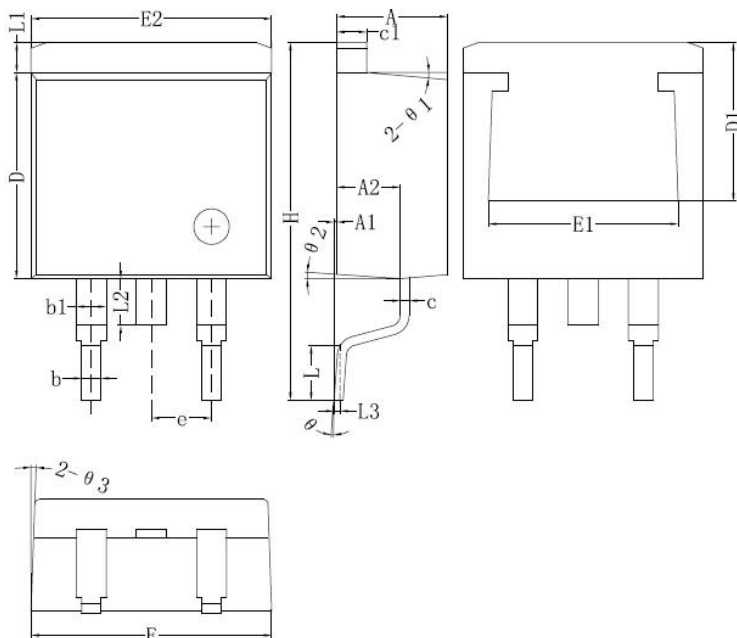
SYMBOL	Millimeters	
	Min.	Max.
A	6.80	7.00
B	10.40	10.60
C	2.60	2.80
d	Φ1.45	Φ1.65
E	1.65	1.85
F	7.40	7.60
P0	3.90	4.10
P	7.90	8.10
P1	1.90	2.10
W	15.90	16.30

Carrier Tape Specification D²PAK



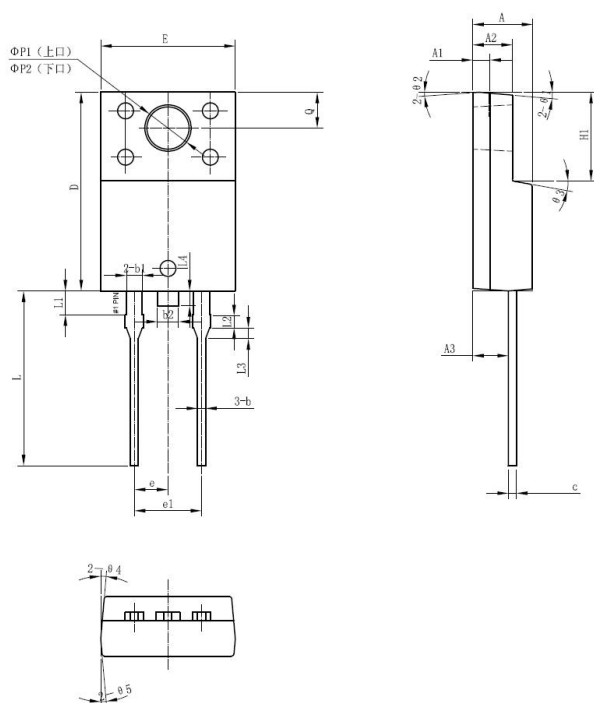
SYMBOL	Millimeters	
	Min.	Max.
A	10.70	10.90
B	16.03	16.23
C	5.11	5.31
d	1.45	1.65
E	1.65	1.85
F	11.40	11.60
P0	3.90	4.10
P	15.90	16.10
P1	1.90	2.10
W	23.90	24.30

Mechanical Dimensions D²PAK



Symbol	Dimensions in millimeters		
	Min.	Typical	Max.
A	4.47	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	1.17	1.27	1.37
c	0.31	0.38	0.61
c1	1.17	1.27	1.37
D	8.50	8.70	8.90
D1	6.40		
E	10.01	10.16	10.31
E1	7.6		
E2	9.98	10.08	10.31
e		2.54	
H	14.6	15.1	15.6
L	2.00	2.30	2.74
L1	1.12	1.27	1.42
L2	1.30		2.20
L3		0.25BSC	
e	0	-	8°
e1		5°	
e2		4°	
e3		4°	

Mechanical Dimensions ITO-220AC



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
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	5.00	5.10	5.16
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°	



ST5200
STB5200
STD5200
STF5200

Technical Data
Data Sheet N1427, Rev. B



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