

## ST40200C/STB40200C 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
- Trench MOS Schottky technology
- Terminals finish: 100% Pure Tin
- This is a Pb - Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

ST40200C	STB40200C
TO-220AB	D <sup>2</sup> PAK

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

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	-	200	V
Working Peak Reverse Voltage	V <sub>RWM</sub>			
DC Blocking Voltage	V <sub>R</sub>			
Average Rectified Forward Current	I <sub>F(AV)</sub>	T <sub>c</sub> =93°C, In DC	20(Per Leg)	A
			40(Per Device)	
Peak One Cycle Non-Repetitive Surge Current(Per Leg)	I <sub>FSM</sub>	8.3ms, Half Sine pulse	250	A

### Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop(Per Leg)*	$V_{F1}$	@ 20A, Pulse, $T_J = 25\text{ }^\circ\text{C}$	0.83	1.60	V
	$V_{F2}$	@ 20A, Pulse, $T_J = 125\text{ }^\circ\text{C}$	0.71	0.76	V
Reverse Current(Per Leg)*	$I_{R1}$	@ $V_R = \text{rated } V_R$ $T_J = 25\text{ }^\circ\text{C}$	0.03	300	$\mu\text{A}$
	$I_{R2}$	@ $V_R = \text{rated } V_R$ $T_J = 125\text{ }^\circ\text{C}$	0.08	36	mA
Junction Capacitance (per leg)	$C_T$	@ $V_R = 5\text{V}$ , $T_C = 25\text{ }^\circ\text{C}$ $f_{SIG} = 1\text{MHz}$	336	-	pF

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

### Thermal-Mechanical Specifications:

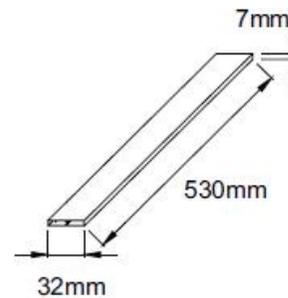
Characteristics	Symbol	Condition	Specification	Units
Junction Temperature	$T_J$	-	-55 to +150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-	-55 to +150	$^\circ\text{C}$
Typical Thermal Resistance Junction to Case(Per Leg)	$R_{\theta JC}$	DC operation	1.8	$^\circ\text{C/W}$

### Tube Specification

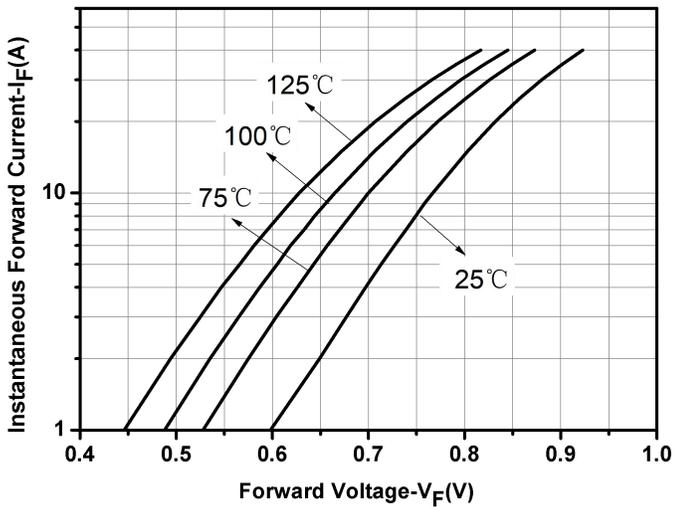
Device	Package	Weight	Shipping
ST40200C	TO-220AB	2.0	50pcs / tube
STB40200C	D <sup>2</sup> PAK	1.85	800pcs / reel

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

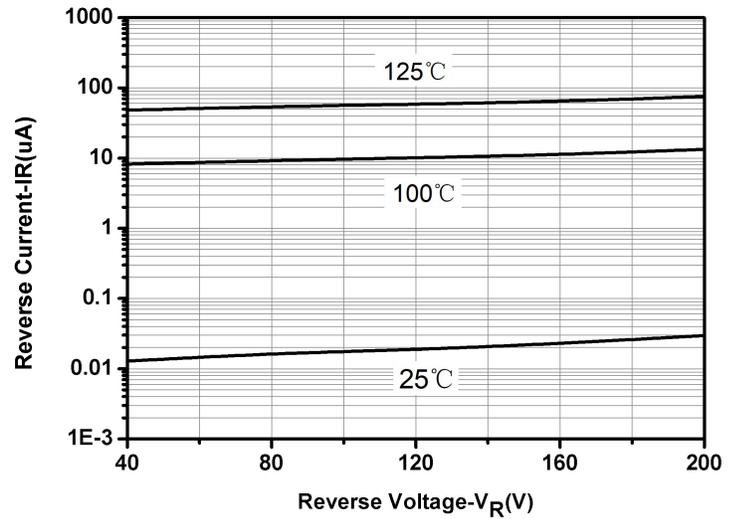
### Tube Specification(TO-220AB)



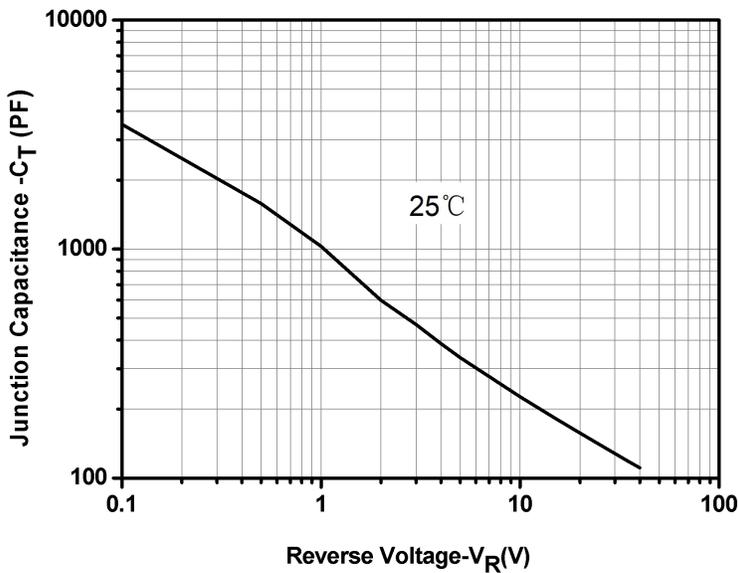
**Ratings and Characteristics Curves**



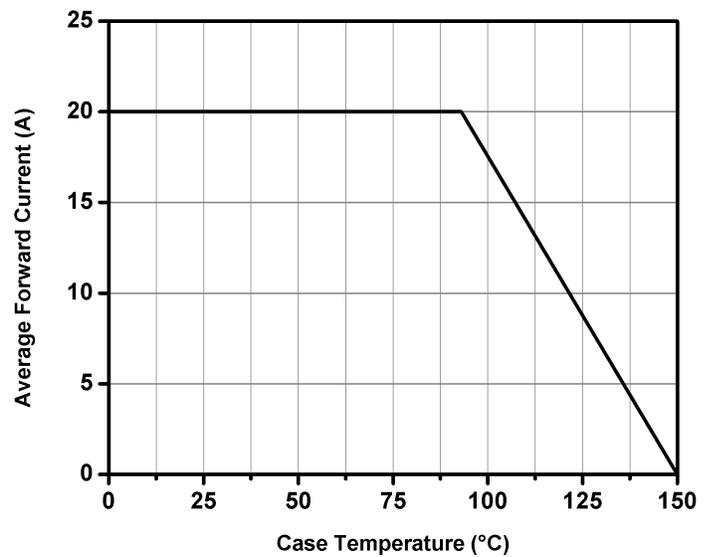
**Fig.1-Typical Forward Voltage**



**Fig.2-Typical Reverse Characteristics**

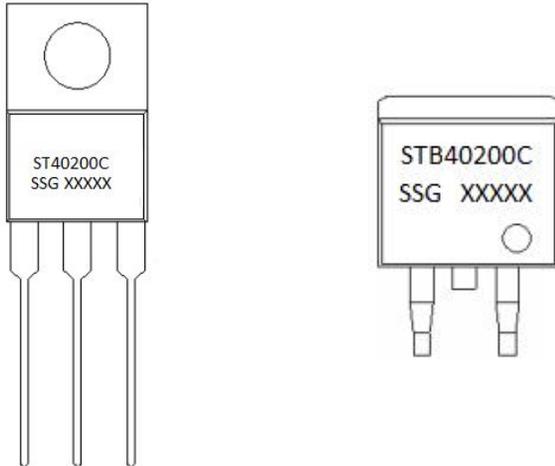


**Fig.3-Capacitance vs. Reverse Voltage**



**Fig.4- Forward Current Derating Curve**

## Marking Diagram

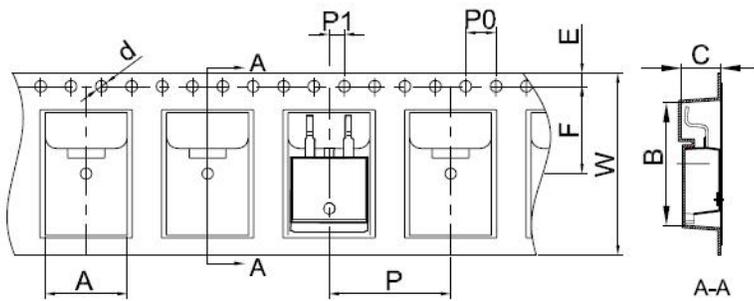


Where XXXXX is YYWWL

ST = Device Type  
B = Package type  
40 = Forward Current (40A)  
200 = Reverse Voltage (200V)  
C = Configuration  
SSG = SSG  
YY = Year  
WW = Week  
L = Lot Number

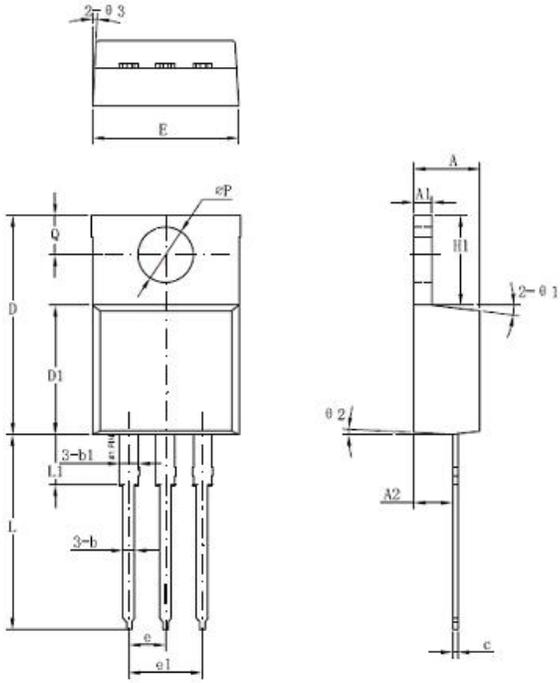
**Cautions:** Molding resin  
Epoxy resin UL94V-0

## Carrier Tape Specification D2PAK



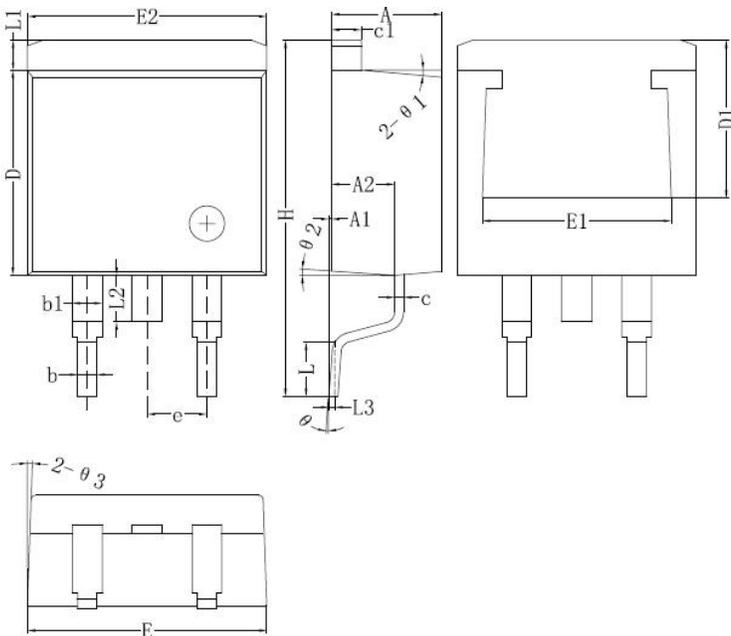
SYMBOL	Millimeters	
	Min.	Max.
A	10.70	10.90
B	16.03	16.23
C	5.11	5.31
d	1.45	1.65
E	1.65	1.85
F	11.40	11.60
P0	3.90	4.10
P	15.90	16.10
P1	1.90	2.10
W	23.90	24.30

**Mechanical Dimensions TO-220AB**



Symbol	Dimensions in millimeters		
	Min	Typical	Max
A	3.56	-	4.83
A1	0.51	-	1.40
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	12.70	-	14.73
L1	-	-	6.35
φP	-	3.56	-
Q	2.54	-	3.43

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



Symbol	Dimensions in millimeters	
	Min.	Typical
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°

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