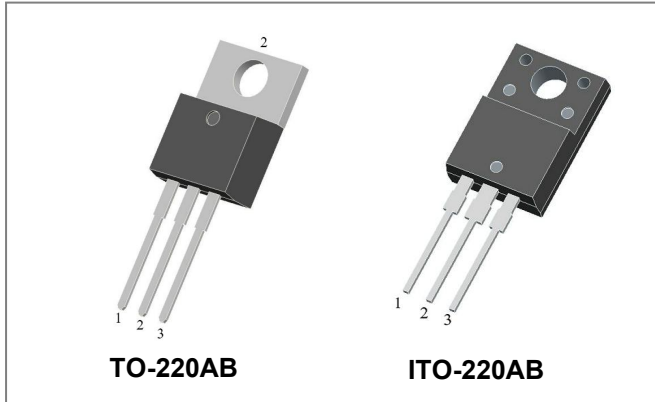


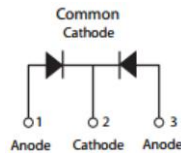
## ST40100CE STF40100CE SCHOTTKY RECTIFIER



### 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
- Guard ring for enhanced ruggedness and long term reliability
- 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

### Circuit Diagram



### Applications

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

### Maximum Ratings:

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	-	100	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>	50% duty cycle @T <sub>c</sub> =105°C, rectangular wave form	20(Per Leg) 40(Per Device)	A
Peak One Cycle Non-Repetitive Surge Current(Per Leg)	I <sub>FSM</sub>	8.3ms, Half Sine pulse, T <sub>c</sub> =25°C	200	A

### Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop (Per Leg)*	V <sub>F1</sub>	@ 10A, Pulse, T <sub>J</sub> = 25 °C	0.66	-	V
		@ 20A, Pulse, T <sub>J</sub> = 25 °C	0.87	0.90	V
Reverse Current(Per Leg)*	I <sub>R1</sub>	@ V <sub>R</sub> = 100V, T <sub>J</sub> = 25 °C	0.014	1	mA
		@ V <sub>R</sub> = 100V, T <sub>J</sub> = 125 °C	3	75	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	600	-	pF

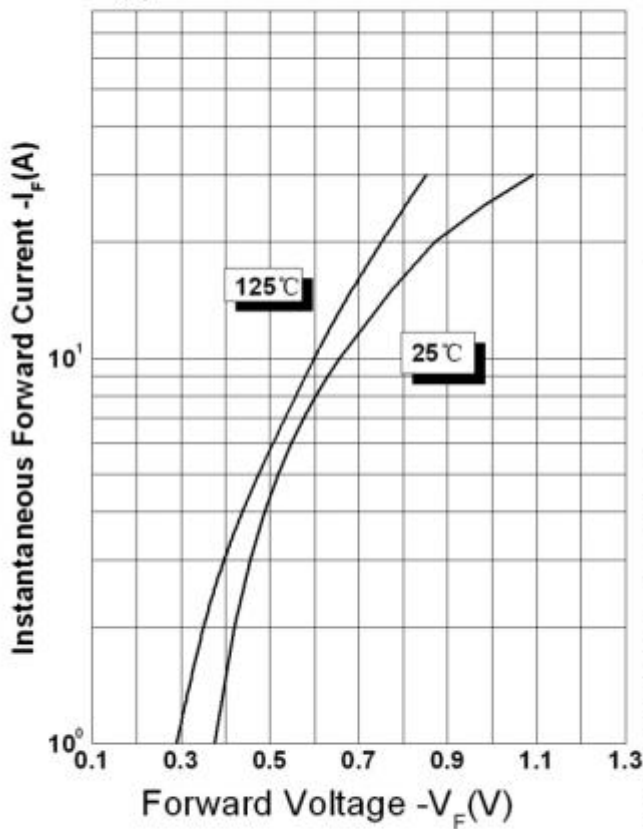
\* Pulse width < 300 μs, duty cycle < 2%

**Thermal-Mechanical Specifications:**

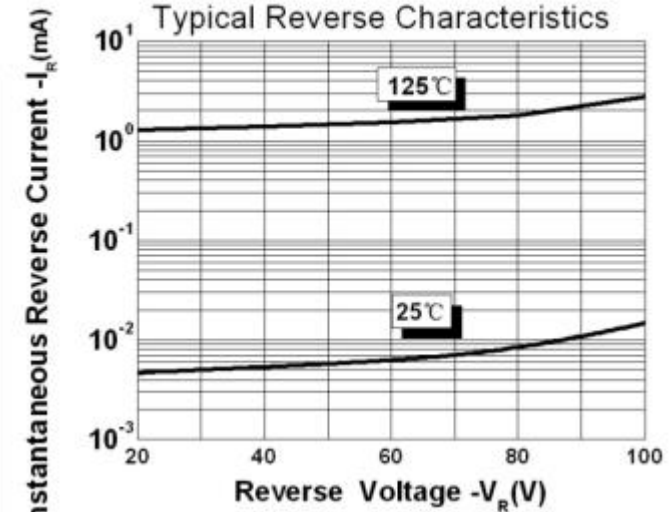
Characteristics	Symbol	Condition	ST4100CE	STF4100CE	Units
Junction Temperature	$T_J$	-	-55 to +150		°C
Storage Temperature	$T_{stg}$	-	-55 to +150		°C
Typical Thermal Resistance Junction to Case(Per Leg)	$R_{\theta JC}$	DC operation	2.4	5	°C/W
Approximate Weight	wt	-	1.8	2	g

**Ratings and Characteristics Curves**

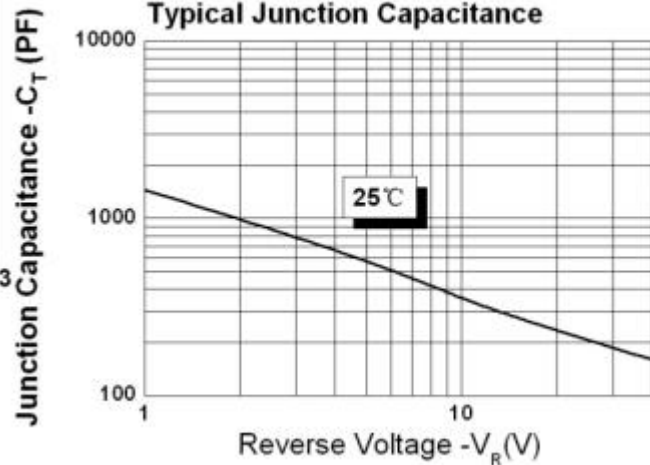
**Figure 1**  
Typical Forward Characteristics



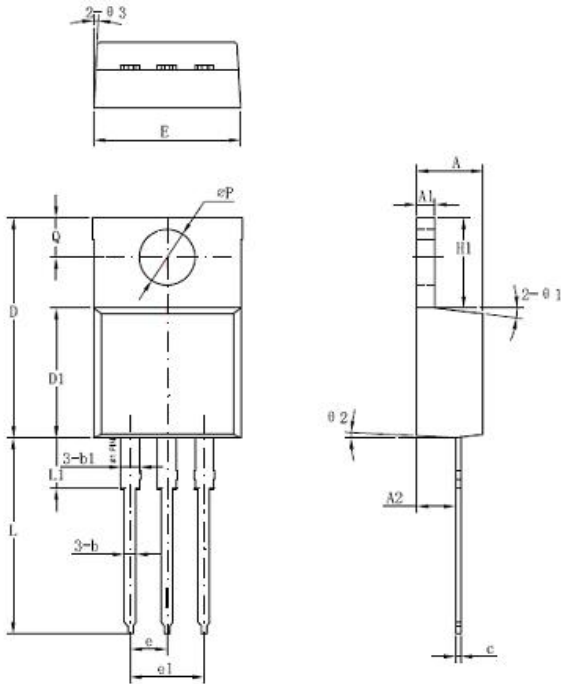
**Figure 2**  
Typical Reverse Characteristics



**Figure 3**  
Typical Junction Capacitance

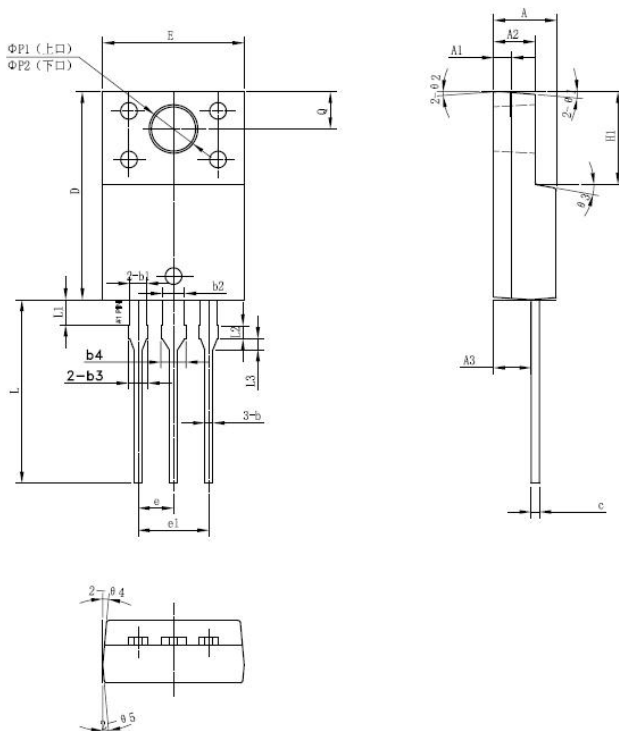


**Mechanical Dimensions TO-220AB**



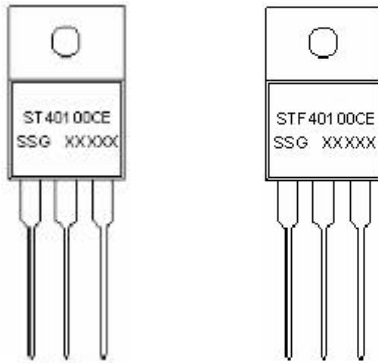
Symbol	Dimensions in millimeters		
	Min	Typical	Max
A	4.42	4.57	4.72
A1	1.17	1.27	1.37
A2	2.52	2.69	2.89
b	0.71	0.81	0.96
b1	1.17	1.27	1.37
c	0.31	0.38	0.61
D	14.94	15.24	15.54
D1	8.85	9.00	9.15
E	10.01	10.16	10.31
e		2.54	
e1	4.98	5.06	5.18
H1	6.04	6.24	6.44
L	12.7	13.56	13.80
L1	3.50	3.60	3.96
ΦP	3.74	3.84	4.04
Q	2.54	2.74	2.94
Θ1		7°	
Θ2		3°	
Θ3		4°	

**Mechanical Dimensions ITO-220AB**



SYMBOL	Dimensions in millimeters		
	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	0.50	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°	

## Marking Diagram

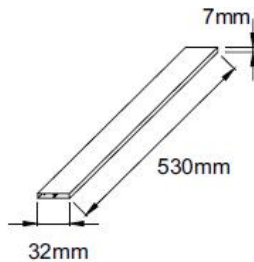


Where XXXXX is YYWWL

ST = Device Type  
F = Package type  
40 = Forward Current (40A)  
100 = Reverse Voltage (100V)  
CE = Configuration  
SSG = SSG  
YY = Year  
WW = Week  
L = Lot Number

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

## Tube Specification



## Ordering Information

Device	Package	Shipping
ST40100CE	TO-220AB(Pb-Free)	50 pcs/ tube
STF40100CE	ITO-220AB(Pb-Free)	50 pcs/ tube

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

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