

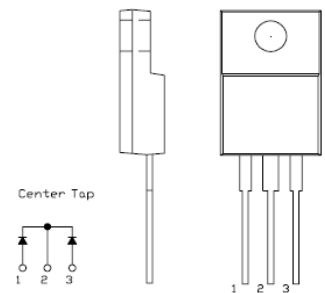
## STF40100C SCHOTTKY RECTIFIER

### Applications:

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

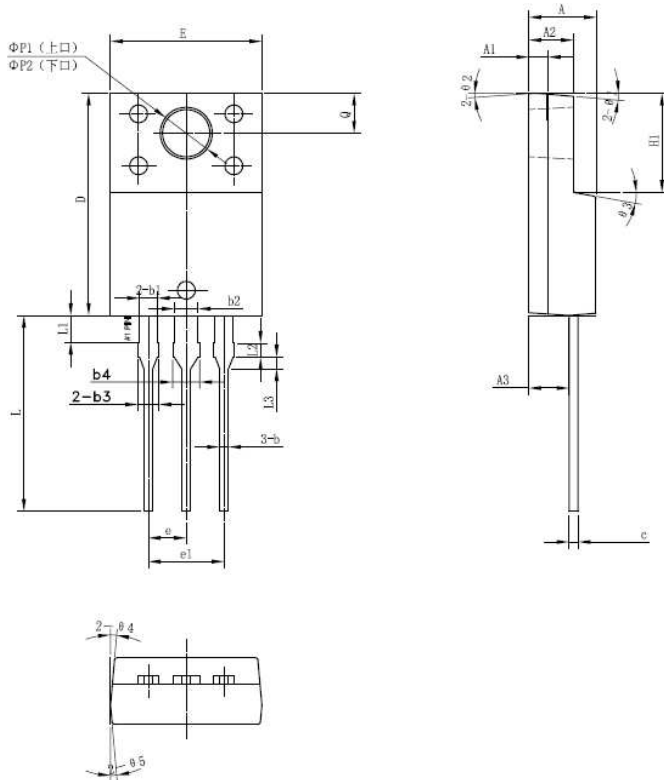
### Features:

- 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



OUTLINE DRAWING

### Mechanical Dimensions: In mm

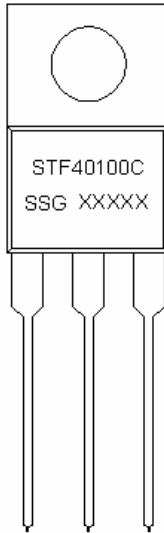


| SYMBOL  | MIN.  | TYP.  | MAX.  |
|---------|-------|-------|-------|
| A       | 4.30  | 4.50  | 4.70  |
| A1      | 1.10  | 1.30  | 1.50  |
| A2      | 2.80  | 3.00  | 3.20  |
| A3      | 2.50  | 2.70  | 2.90  |
| b       | 0.50  | 0.60  | 0.75  |
| b1      | 1.10  | 1.20  | 1.35  |
| b2      | 1.50  | 1.60  | 1.75  |
| b3      | 1.20  | 1.30  | 1.45  |
| b4      | 1.60  | 1.70  | 1.85  |
| 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  |
| 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-220AB



**Marking Diagram:**



Where XXXXX is YYWWL

- S = Device Type
- T = Ultralow VF
- F = Package type
- 40 = Forward Current (40A)
- 100 = Reverse Voltage (100V)
- C = Configuration
- SSG = SSG
- YY = Year
- WW = Week
- L = Lot Number

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

**Ordering Information:**

| Device    | Package                | Shipping     |
|-----------|------------------------|--------------|
| STF40100C | ITO-220AB<br>(Pb-Free) | 50pcs / tube |

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                                  | $V_{RWM}$   | -   | 100  | V     |
| Average Forward Current                               | $I_{F(AV)}$ | 50% duty cycle @ $T_C=105\text{ }^\circ\text{C}$<br>rectangular wave form | 40   | A     |
| Peak One Cycle Non-Repetitive Surge Current (per leg) | $I_{FSM}$   | 8.3 ms, half Sine pulse   | 300  | A     |



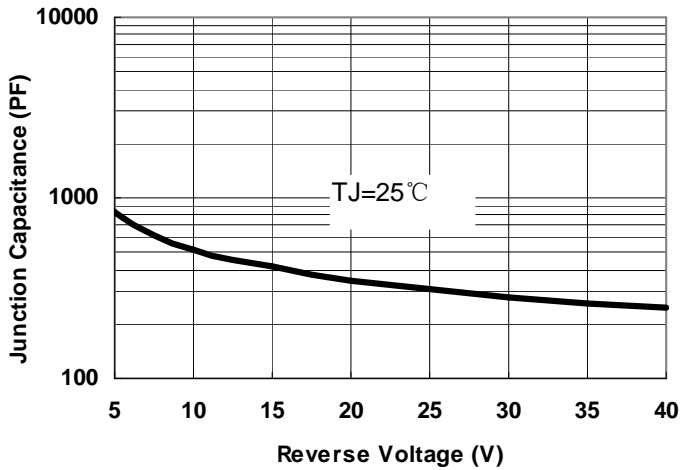
**Electrical Characteristics:**

| Characteristics   | Symbol           | Condition   | Typ.           | Max.    | Units |
|---|------------------|---|----------------|---------|-------|
| Forward Voltage Drop (per leg)*   | V <sub>F1</sub>  | @ 5A, Pulse, T <sub>J</sub> = 25 °C   | 0.47           | -       | V     |
|   |                  | @ 10A, Pulse, T <sub>J</sub> = 25 °C  | 0.54           | -       |       |
| @ 20A, Pulse, T <sub>J</sub> = 25 °C  |                  | 0.68  | 0.75           |         |       |
|   | V <sub>F2</sub>  | @ 5A, Pulse, T <sub>J</sub> = 125 °C  | 0.38           | -       | V     |
|   |                  | @ 10A, Pulse, T <sub>J</sub> = 125 °C   | 0.51           | -       |       |
|   |                  | @ 20A, Pulse, T <sub>J</sub> = 125 °C   | 0.64           | 0.70    |       |
| Reverse Current at DC condition (per leg)                                   | I <sub>R1</sub>  | @V <sub>R</sub> = 70V, T <sub>J</sub> = 25 °C<br>@V <sub>R</sub> = 100V, T <sub>J</sub> = 25 °C         | 0.012<br>0.030 | -<br>1  | mA    |
| Reverse Current (per leg) *   | I <sub>R2</sub>  | @V <sub>R</sub> = 70V, T <sub>J</sub> = 125 °C<br>@V <sub>R</sub> = 100V, T <sub>J</sub> = 125 °C       | 10<br>15       | -<br>75 | mA    |
| Junction Capacitance (per leg)  | C <sub>T</sub>   | @V <sub>R</sub> = 5V, T <sub>C</sub> = 25 °C<br>f <sub>SIG</sub> = 1MHz                                 | 845            | 1000    | pF    |
| Voltage Rate of Change  | dv/dt            | -   | -              | 10,000  | V/μs  |
| RSM Isolation Voltage (t = 1.0 second, R. H. <=30%, T <sub>A</sub> = 25 °C) | V <sub>ISO</sub> | Clip mounting, the epoxy body away from the heatsink edge by more than 0.110" along the lead direction. | -              | 4500    | V     |
|   |                  | Clip mounting, the epoxy body is inside the heatsink.   | -              | 3500    |       |
|   |                  | Screw mounting, the epoxy body is inside the heatsink.  | -              | 1500    |       |

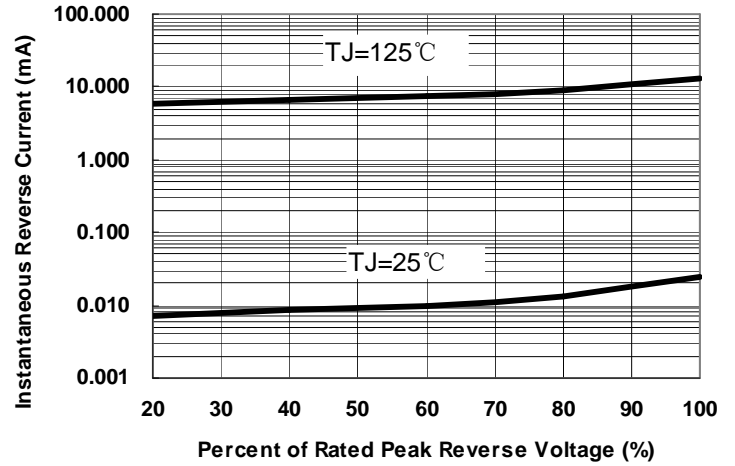
\* Pulse Width < 300μs, Duty Cycle <2%

**Thermal-Mechanical Specifications:**

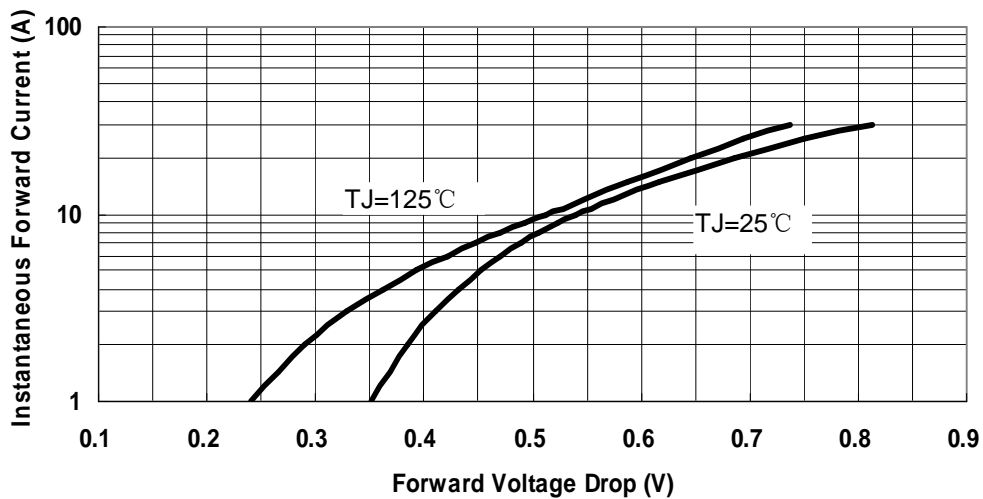
| Characteristics                                       | Symbol           | Condition    | Specification | Units |
|---|------------------|--------------|---------------|-------|
| Junction Temperature                                  | T <sub>J</sub>   | -            | -55 to +150   | °C    |
| Storage Temperature                                   | T <sub>stg</sub> | -            | -55 to +150   | °C    |
| Maximum Thermal Resistance Junction to Case (per leg) | R <sub>θJC</sub> | DC operation | 5.0           | °C/W  |
| Approximate Weight                                    | wt               | -            | 2             | g     |
| Case Style  | ITO-220AB        |              |               |       |



**Fig.1-Typical Junction Capacitance**



**Fig.2-Typical Reverse Characteristics**



**Fig.3-Typical Instantaneous Forward Voltage Characteristics**



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