Technical Data
Data Sheet N1026, Rev. D

*Green Products*

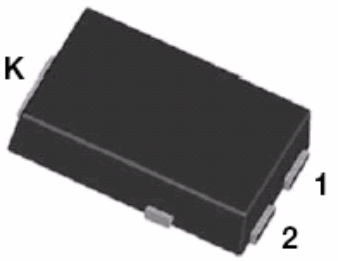
# ST1045S SCHOTTKY RECTIFIER

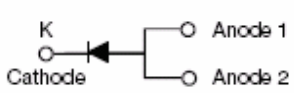
## Applications:

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

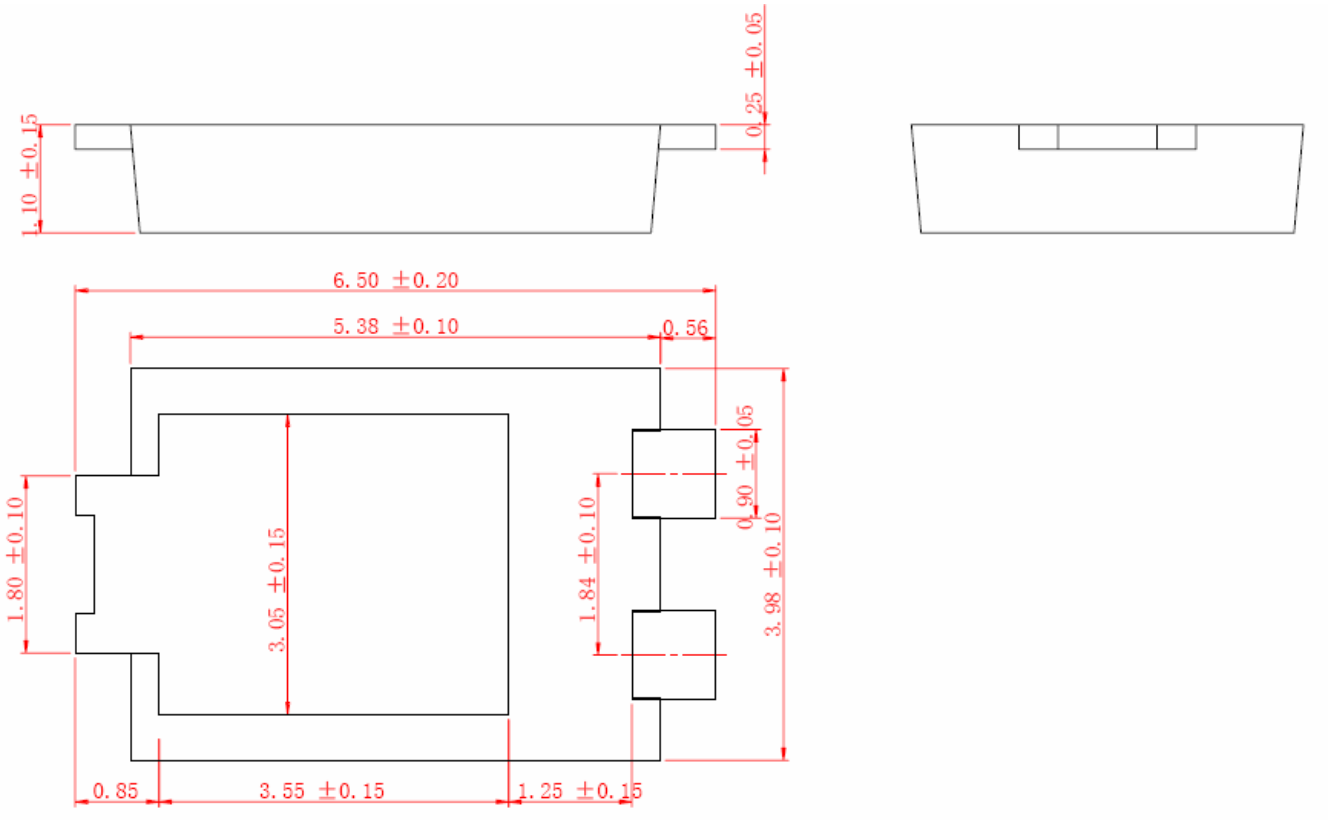
## Features:

- 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
- This is a Pb − Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request




## Mechanical Dimensions: In mm

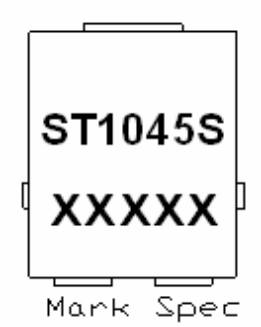



**TO-277B(JK)**

**Technical Data**
**Data Sheet N1026, Rev. D**

***Green Products***

## Marking Diagram:




Where XXXXX is YYWWL

S = Device Type
T = Ultralow VF
10 = Forward Current (10)
45 = Reverse Voltage (45V)
S = Package type
YY = Year
WW = Week
L = Lot Number

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

## Ordering Information:

| Device | Package | Shipping |
|---|---|---|
| ST1045S | TO-277B (Pb-Free) | 5000pcs/ 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 | $V_{RWM}$ | - | 45 | V |
| Average Forward Current | $I_{F(AV)}$ | 50% duty cycle @$T_C$ = 80 °C rectangular wave form | 10 | A |
| Peak One Cycle Non-Repetitive Surge Current (per leg) | $I_{FSM}$ | 8.3 ms, half Sine pulse | 150 | A |

## Electrical Characteristics:

| Characteristics | Symbol | Condition | Typ. | Max. | Units |
|---|---|---|---|---|---|
| Forward Voltage Drop* | $V_{F1}$ | @ 5A, Pulse, $T_J$ = 25 °C<br>@ 10A, Pulse, $T_J$ = 25 °C | 0.40<br>0.46 | 0.51<br>0.57 | V |
| | $V_{F2}$ | @ 5A, Pulse, $T_J$ = 125 °C<br>@ 10A, Pulse, $T_J$ = 125 °C | 0.30<br>0.37 | 0.43<br>0.50 | V |
| Reverse Current (per leg) | $I_{R1}$ | @$V_R$ = rated $V_R$<br>$T_J$ = 25 °C | 0.15 | 0.80 | mA |
| Reverse Current (per leg) * | $I_{R2}$ | @$V_R$ = rated $V_R$<br>$T_J$ = 125 °C | 78 | 100 | mA |
| Junction Capacitance (per leg) | $C_T$ | @$V_R$ = 5V, $T_C$ = 25 °C<br>$f_{SIG}$ = 1MHz | 579 | 700 | pF |
| Voltage Rate of Change | dv/dt | - | - | 10,000 | V/μs |

* Pulse Width < 300μs, Duty Cycle <2%

## Thermal-Mechanical Specifications:

| Characteristics | Symbol | Condition | Specification | Units |
|---|---|---|---|---|
| Junction Temperature | $T_J$ | - | -55 to +150 | °C |
| Storage Temperature | $T_{stg}$ | - | -55 to +150 | °C |
| Maximum Thermal Resistance Junction to Ambient | $R_{\theta JA}$ | DC operation | 75 | °C/W |
| Approximate Weight | wt | - | 0.08 | g |
| Case Style | TO-227B | | | |

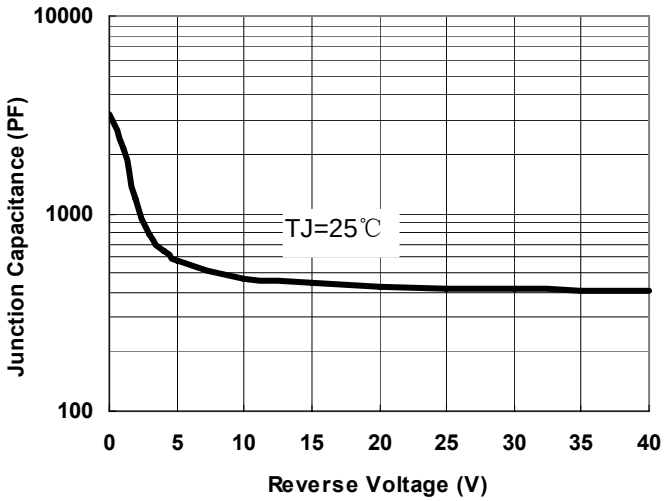



Fig.1-Typical Junction Capacitance

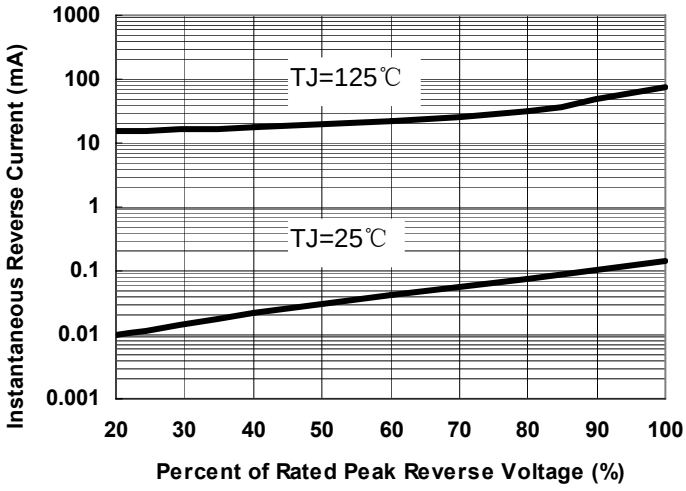



Fig.2-Typical Reverse Characteristics

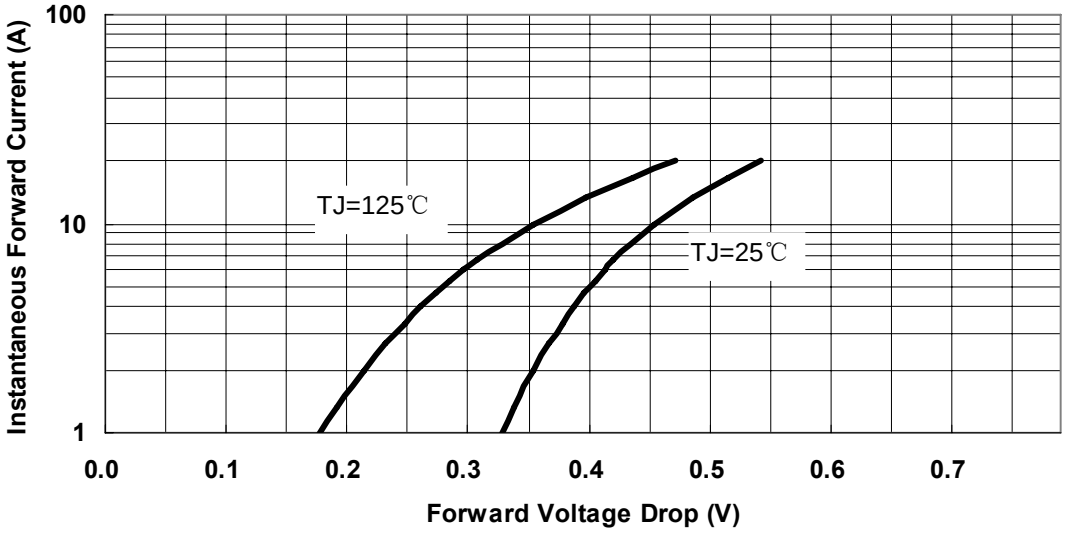



Fig.3-Typical Instantaneous Forward Voltage Characteristics

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