

Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from Europe, America and south Asia, supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts, Customers Priority, Honest Operation, and Considerate Service", our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip, ALPS, ROHM, Xilinx, Pulse, ON, Everlight and Freescale. Main products comprise IC, Modules, Potentiometer, IC Socket, Relay, Connector. Our parts cover such applications as commercial, industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



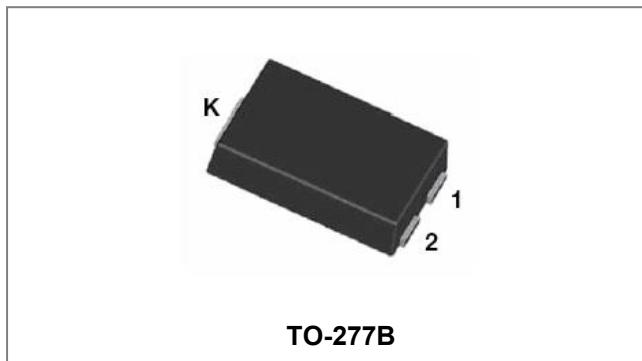
Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

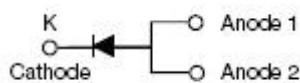
Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

ST1045S SCHOTTKY RECTIFIER



Circuit Diagram



Features

- 150°C T_J operation
- Center tap configuration
- Low 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

Applications

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

Maximum Ratings:

| Characteristics | Symbol | Condition | Max. | Units |
|---|-------------|---|------|-------|
| Peak Repetitive Reverse Voltage | V_{RRM} | - | | |
| Working Peak Reverse Voltage | V_{RWM} | | 45 | V |
| DC Blocking Voltage | V_R | | | |
| Average Rectified Forward Current | $I_{F(AV)}$ | 50% duty cycle @ $T_c=80^\circ\text{C}$, rectangular wave form | 10 | A |
| Peak One Cycle Non-Repetitive Surge Current | I_{FSM} | 8.3ms, Half Sine pulse, $T_c= 25^\circ\text{C}$ | 150 | A |

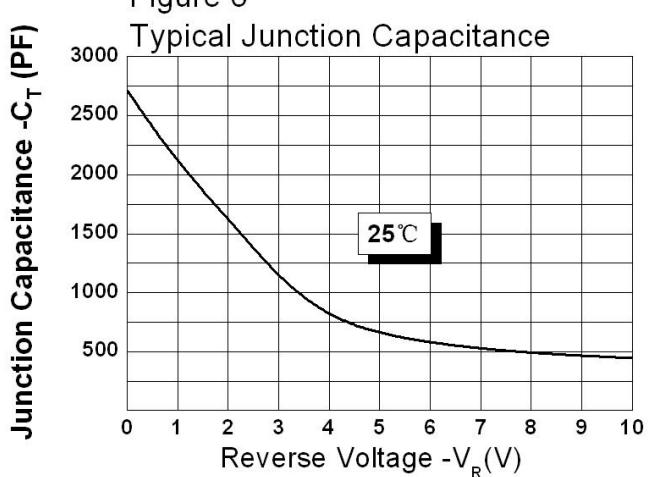
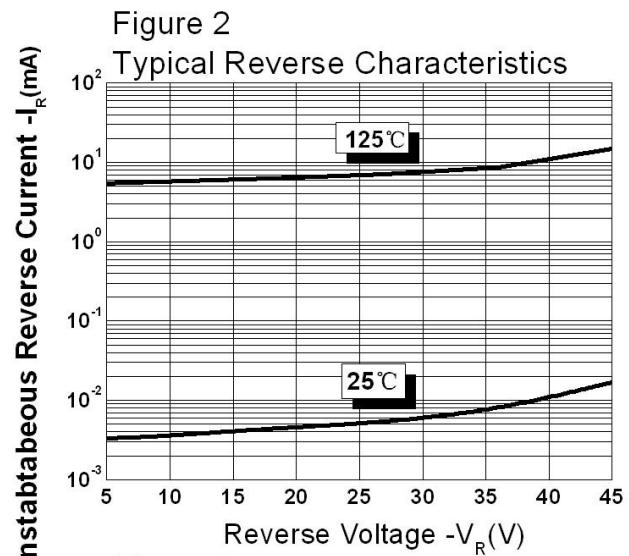
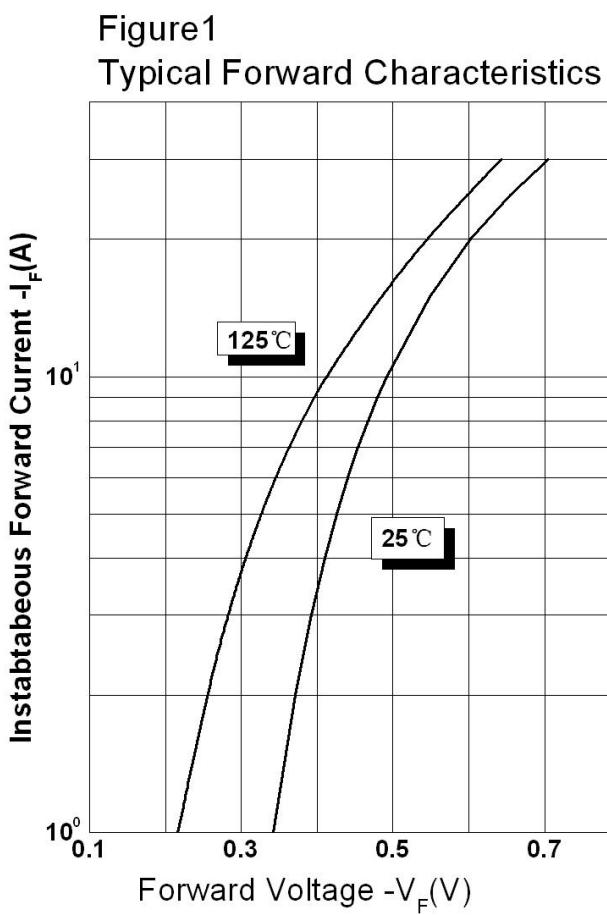
Electrical Characteristics:

| Characteristics | Symbol | Condition | Typ. | Max. | Units |
|-----------------------|----------|---|--------------|--------------|-------|
| Forward Voltage Drop* | V_{F1} | @ 5A, Pulse, $T_J = 25^\circ\text{C}$ @ 10A, Pulse, $T_J = 25^\circ\text{C}$ | 0.43 0.49 | 0.51 0.57 | V |
| | V_{F2} | @ 5A, Pulse, $T_J = 125^\circ\text{C}$ @ 10A, Pulse, $T_J = 125^\circ\text{C}$ | 0.32 0.41 | 0.43 0.50 | V |
| Reverse Current* | I_{R1} | @ V_R = rated V_R $T_J = 25^\circ\text{C}$ | 0.017 | 0.80 | mA |
| | I_{R2} | @ V_R = rated V_R $T_J = 125^\circ\text{C}$ | 15 | 100 | mA |
| Junction Capacitance | C_T | @ $V_R = 5\text{V}$, $T_c = 25^\circ\text{C}$ $f_{SIG} = 1\text{MHz}$ | 656 | - | pF |

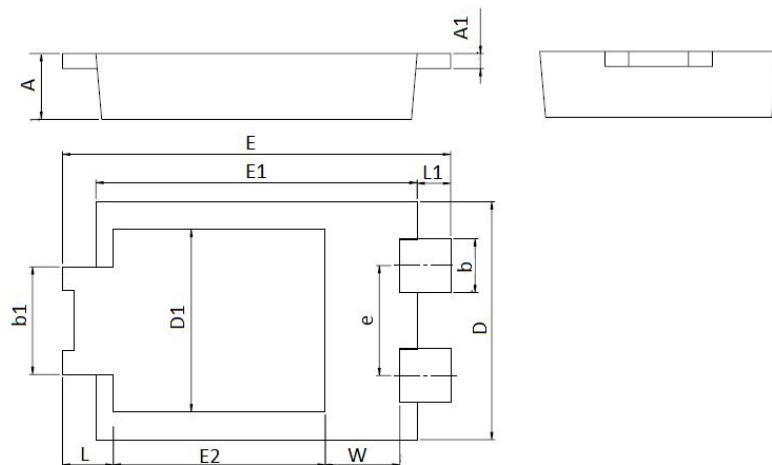
* Pulse width < 300 μs , duty cycle < 2%

Thermal-Mechanical Specifications:

| Characteristics | Symbol | Condition | Specification | Units |
|--|-----------|--------------|---------------|-------|
| Junction Temperature | T_J | - | -55 to +150 | °C |
| Storage Temperature | T_{stg} | - | -55 to +150 | °C |
| Typical Thermal Resistance Junction to Ambient | R_{0JA} | DC operation | 75 | °C/W |
| Approximate Weight | wt | - | 0.08 | g |

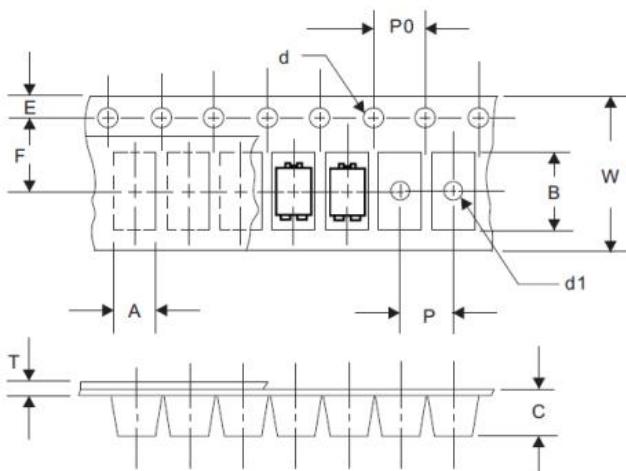
Ratings and Characteristics Curves


Mechanical Dimensions TO-277B



| SYMBOL | Millimeters | | Inches | |
|--------|-------------|------|--------|-------|
| | Min. | Max. | Min. | Max. |
| A | 0.95 | 1.25 | 0.037 | 0.049 |
| A1 | 0.20 | 0.30 | 0.008 | 0.012 |
| b | 0.85 | 0.95 | 0.033 | 0.037 |
| b1 | 1.70 | 1.90 | 0.067 | 0.075 |
| D | 3.88 | 4.08 | 0.153 | 0.161 |
| D1 | 2.90 | 3.20 | 0.114 | 0.126 |
| e | 1.74 | 1.94 | 0.069 | 0.076 |
| E | 6.30 | 6.70 | 0.248 | 0.264 |
| E1 | 5.28 | 5.48 | 0.208 | 0.216 |
| E2 | 3.40 | 3.70 | 0.134 | 0.146 |
| L | 0.70 | 1.00 | 0.028 | 0.039 |
| L1 | 0.41 | 0.71 | 0.016 | 0.028 |
| W | 1.10 | 1.40 | 0.043 | 0.055 |

Carrier Tape Specification TO-277B



| SYMBOL | Millimeters | |
|--------|-------------|-------|
| | Min. | Max. |
| A | 4.28 | 4.48 |
| B | 6.80 | 7.10 |
| C | 1.30 | 1.50 |
| d | 1.40 | 1.60 |
| d1 | - | 1.50 |
| E | 1.65 | 1.85 |
| F | 5.40 | 5.60 |
| P | 7.90 | 8.10 |
| P0 | 3.90 | 4.10 |
| T | 0.24 | 0.44 |
| W | 11.70 | 12.30 |

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.

Marking Diagram



Where XXXXX is YYWWL

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

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

Technical Data

Data Sheet N1026, Rev. F

RoHS



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