

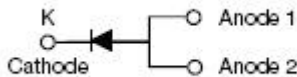
ST580S SCHOTTKY RECTIFIER



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
- Terminals finish: 100% Pure Tin
- “-A” is an AEC-Q101 qualified device
- This is a Halogen 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 Working Peak Reverse Voltage DC Blocking Voltage | V _{RRM} V _{RWM} V _R | - | 80 | V |
| Average Rectified Forward Current | I _{F(AV)} | 50% duty cycle @T _L =125°C, rectangular wave form | 5 | A |
| Peak One Cycle Non-Repetitive Surge Current | I _{FSM} | 8.3ms, Half Sine pulse, T _J = 25 °C | 80 | A |

Electrical Characteristics:

| Characteristics | Symbol | Condition | Typ. | Max. | Units |
|-----------------------|-----------------|---|-------|------|-------|
| Forward Voltage Drop* | V _{F1} | @ 2.5A, Pulse, T _J = 25 °C | 0.48 | - | V |
| | | @ 5A, Pulse, T _J = 25 °C | 0.59 | 0.72 | V |
| | V _{F2} | @ 2.5A, Pulse, T _J = 125 °C | 0.45 | - | V |
| | | @ 5A, Pulse, T _J = 125 °C | 0.59 | 0.66 | V |
| Reverse Current* | I _{R1} | @V _R = rated VR T _J = 25 °C | 0.011 | 0.4 | mA |
| Reverse Current* | I _{R2} | @V _R = rated VR T _J = 125 °C | 4 | 15 | mA |
| Junction Capacitance | C _T | @V _R = 5V, T _C = 25 °C f _{SIG} = 1MHz | 245 | - | 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 Case | $R_{\theta JC}$ | - | 3.5 | °C/W |
| Typical Thermal Resistance Junction to Ambient | $R_{\theta JA}$ | - | 70 | °C/W |
| Approximate Weight | wt | - | 0.08 | g |

Ratings and Characteristics Curves

Figure 1
Typical Forward Characteristics

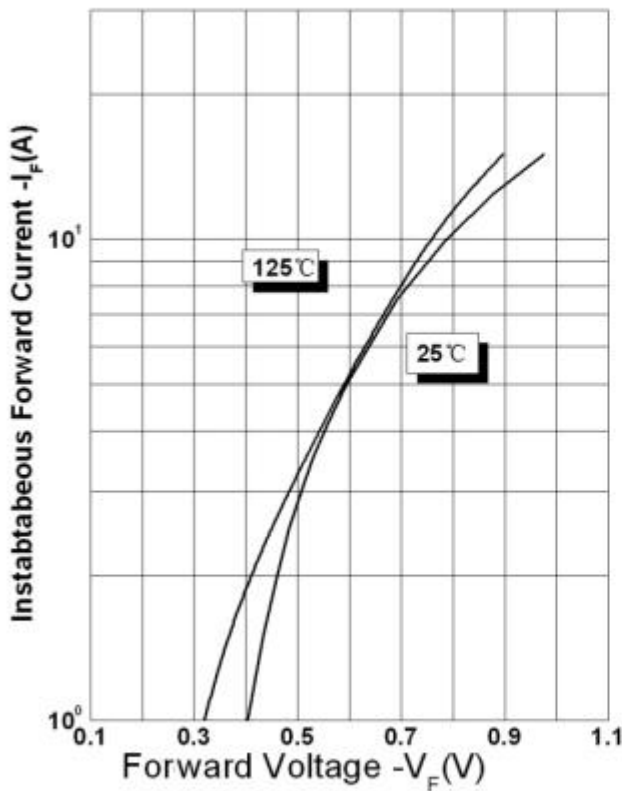


Figure 2
Typical Reverse Characteristics

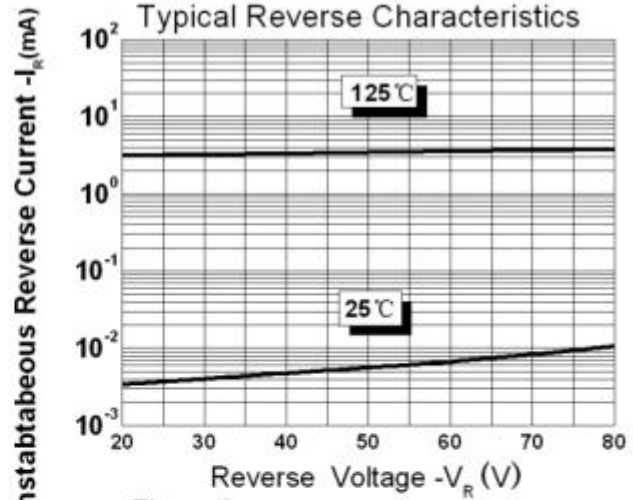
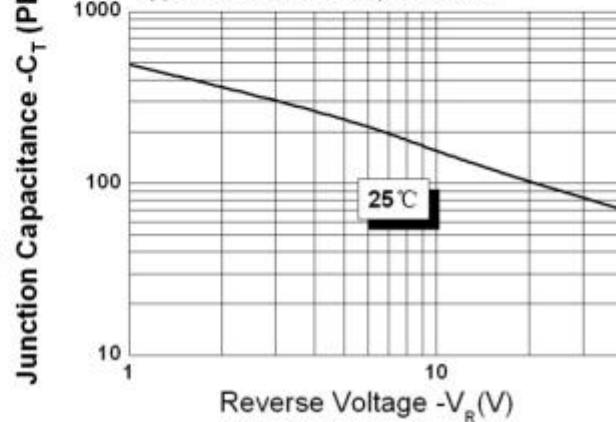
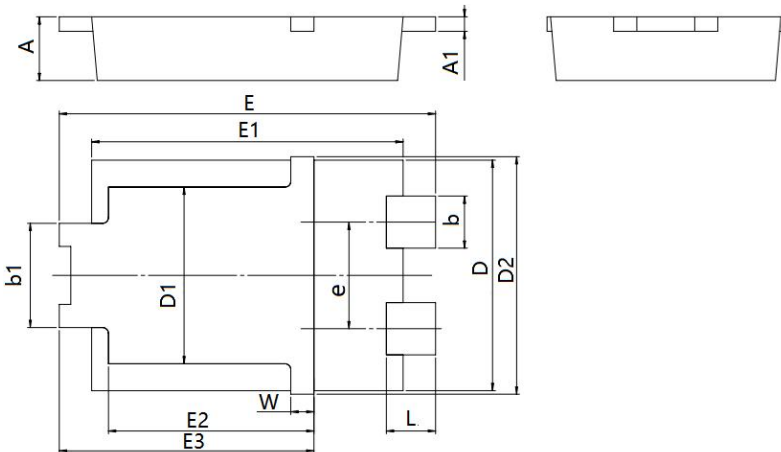
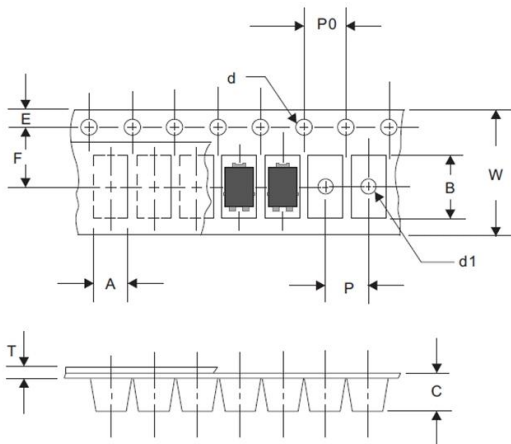


Figure 3
Typical Junction Capacitance



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 |
| D2 | 4.25 | - | 0.167 | - |
| 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 |
| E3 | 4.20 | 4.60 | 0.165 | 0.181 |
| L | 0.65 | 1.05 | 0.025 | 0.041 |
| W | 0.25 | 0.55 | 0.010 | 0.022 |

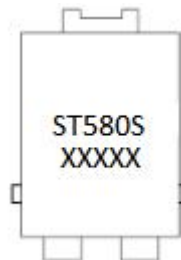
Carrier Tape Specification TO-277B


| 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 |
|----------|------------------|---------------|
| ST580S | TO-277B(Pb-Free) | 5000pcs/ reel |
| ST580STR | 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
 5 = Forward Current (5A)
 80 = Reverse Voltage (80V)
 S = Package type
 YY = Year
 WW = Week
 L = Lot Number

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

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