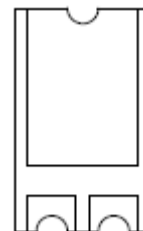


8A Schottky Barrier Rectifier

Features

- Lead less chip form, no lead damage
- Low power loss, High efficiency
- High current capability, low V_F
- RoHS Compliant and Halogen Free
- AEC - Q101 qualified



Application

- Switching mode power supply applications
- Portable equipment battery applications
- High frequency rectification
- DC / DC Converter
- Designed as bypass diodes for solar panels

P5Y

HALOGEN
FREE



Mechanical Data

| | |
|-------------------|--|
| Case: | Packed with FRP substrate and epoxy under filled |
| Epoxy: | Plastic package has UL flammability classification 94V-0 |
| Terminals: | Pure Tin plated. Solder plated, solderable per MIL-STD-750, Method 2026 |
| Weight: | 0.0036 ounce, 0.102 gram |

Absolute Maximum Ratings *(T_{Ambient}=25°C unless noted otherwise)*

| Symbol | Description | Value | Unit | Conditions |
|---------------------|--|-------------|------|-----------------------------|
| VRRM | Repetitive Peak Reverse Voltage | 45 | V | |
| VRMS | Max. RMS Voltage | 31.5 | V | |
| IF(AV) | Max. Average Forward Rectified Current | 8.0 | A | See Fig.1 |
| IFSM | Non-Repetitive Peak Forward Surge Current | 180 | A | 8.3ms single half sine-wave |
| TJ, TSTG | Operating Junction and Storage Temperature Range | -55 to +150 | °C | |

8A Schottky Barrier Rectifier

TSCD845P5Y

Electrical Characteristics ($T_{Ambient}=25^{\circ}\text{C}$ unless noted otherwise)

| Symbol | Description | Typ. | Max. | Unit | Conditions | |
|--------------------------------|--|------|------|----------------------|----------------------------|---------------------------|
| VF | Forward Voltage (Note 1) | 0.55 | 0.58 | V | $I_F=8.0\text{A}$ | |
| IR | Reverse Current | 0.01 | 0.10 | mA | $V_R=\text{Max. } V_{RRM}$ | $T_A=25^{\circ}\text{C}$ |
| | | - | 50 | | | $T_A=125^{\circ}\text{C}$ |
| Rθ-JA | Thermal Resistance Junction to Ambient | 55 | - | $^{\circ}\text{C/W}$ | Note 2 | |
| Rθ-JC | Thermal Resistance Junction to Case | 16 | - | $^{\circ}\text{C/W}$ | Note 2 | |

- Note:**
1. Pulse test width $PW=300\mu\text{sec}$, 1% duty cycle.
 2. Mounted on P.C.B. with 14 x 14mm copper pad areas.

Typical Characteristics Curves

Fig.1- Typical Forward Current Derating Curve

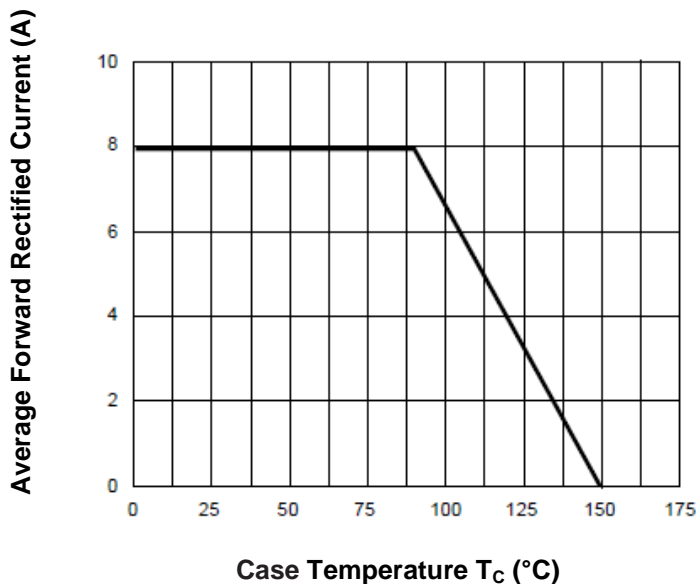


Fig.2- Max. Non-Repetitive Forward Surge Current

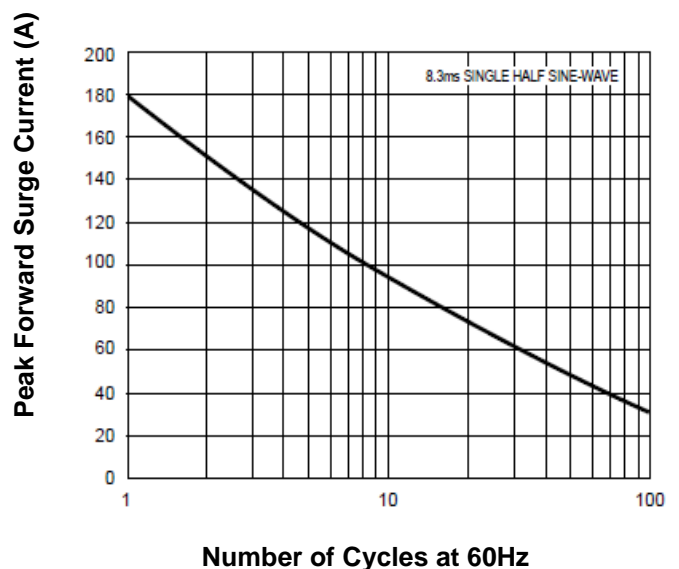


Fig.3- Typical Instantaneous Forward Characteristics

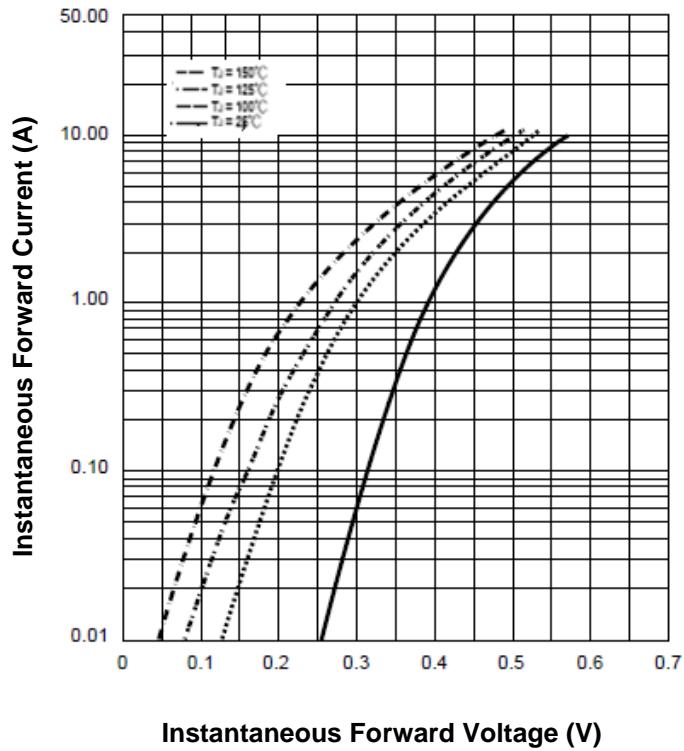
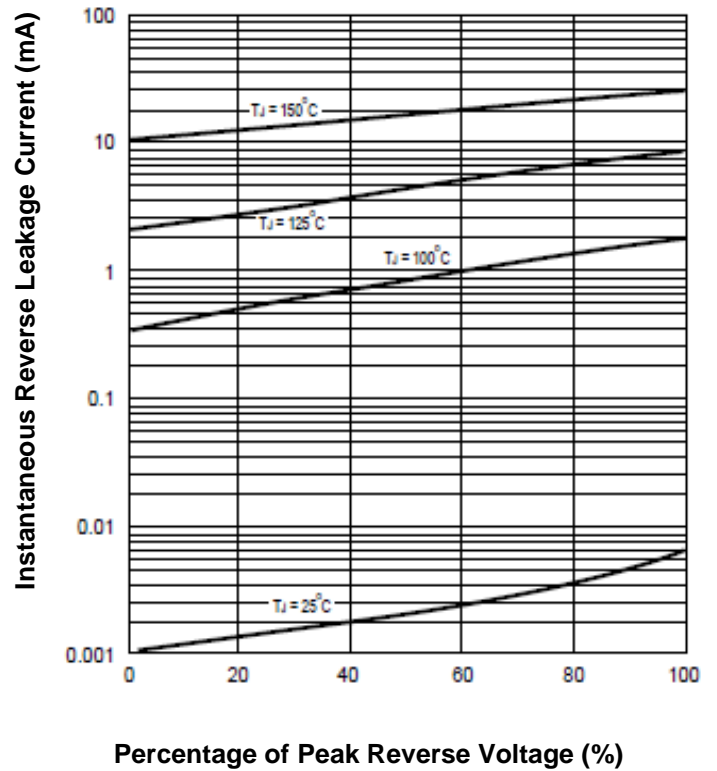
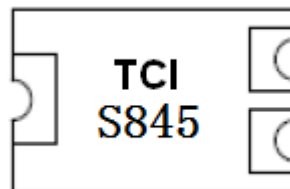


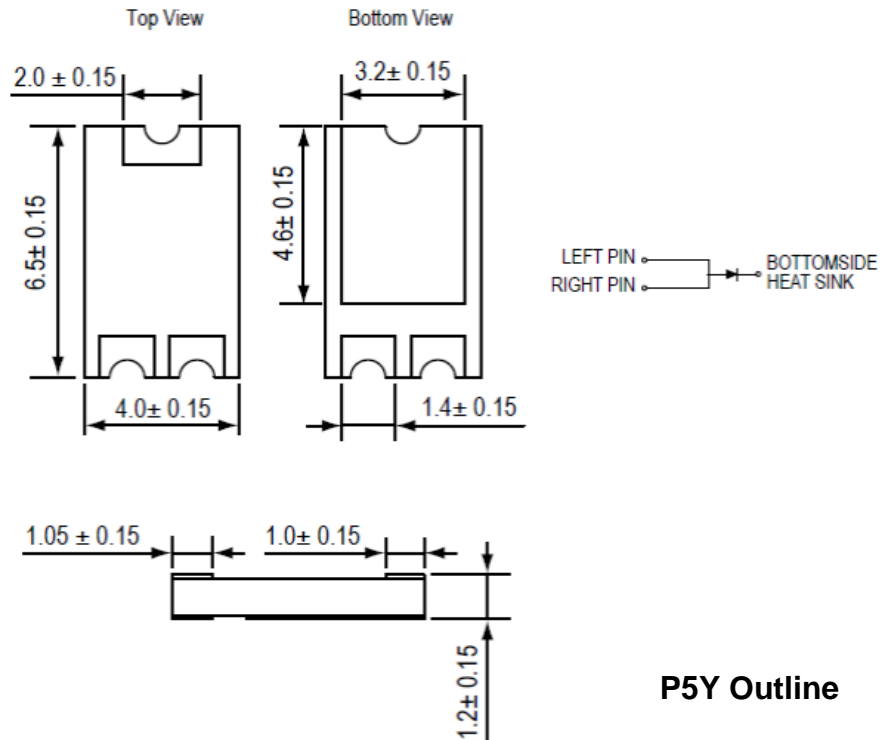
Fig.4- Typical Reverse Characteristics



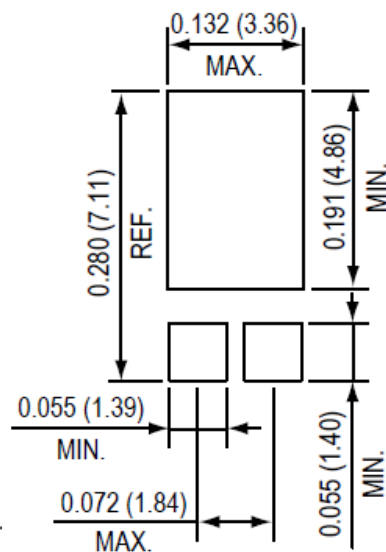
Marking Information:



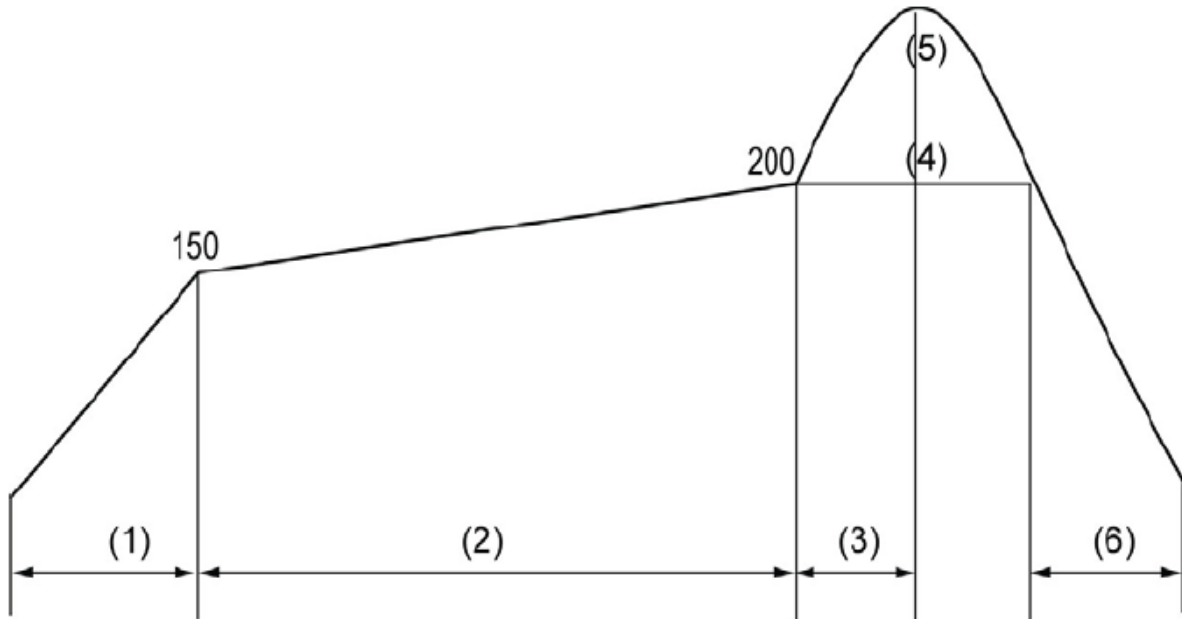
Dimensions in mm



Mounting Pad Layout in inch (mm)



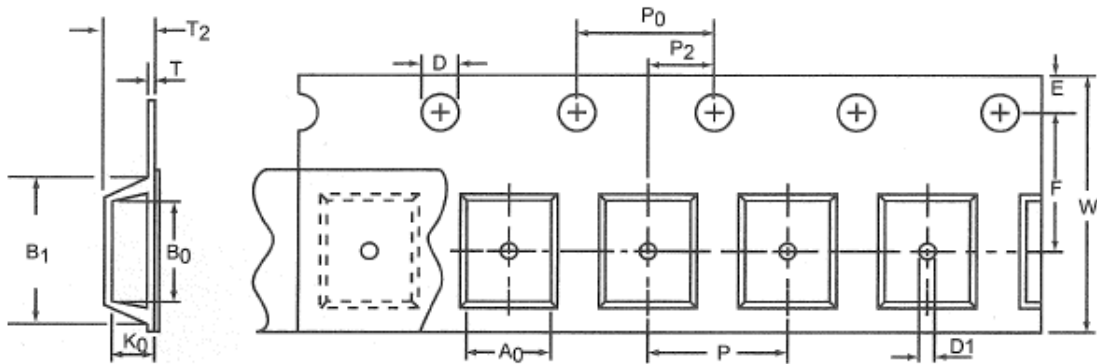
Recommendations for SMD Soldering Conditions



| | (1) Ramp up | (2) Pre-heating zone | (3) | (4) Soldering zone | (5) Peak | (6) Ramp down |
|-------|-----------------------|----------------------------|------------------|--------------------------|-------------|---------------------|
| Temp. | Room temp to 150°C | 150~200 | 200°C to peak | ≥ 220°C | ≤ 260°C | |
| Time | ≤ 3°C/sec | Max. 120sec | 1~4°C/sec | Max. 60sec | Max. 10 sec | 1~4°C/sec |

The duration and peak temperature as shown in the above table could conform to the concerned profile condition, T_p : 255°C~260°C and Duration Time: 30sec, as required in JEDEC J-STD-020 Rev. D. It would take 25~30sec to raise the soldering zone temperature, kept at 260°C (5. Peak) for about 35~40sec before ramping down, from 220°C to 260°C.

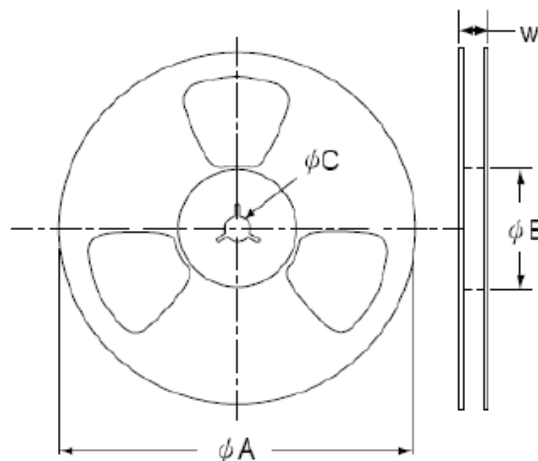
Packing Information in mm



| Product Type | A0 | B0 | K0 | D | E | P0 | T |
|--------------|-----------|-----------|-----------|----------|----------|-----------|-----------|
| | See Note | | | 1.50±0.1 | 1.75±0.1 | 4.00±0.1 | 0.40 Max. |
| P5Y | B1 | D1 | F | P | P2 | W | T2 |
| | 8.20 Max. | 1.50 Min. | 5.50±0.05 | 8.00±0.1 | 2.00±0.1 | 12.00±0.3 | 1.65±0.1 |

Note: Symbol A0, B0, K0 are determined by the maximum dimensions of the component size.
 The clearance between the component and the cavity must be within 0.05 mm (0.002") min. to 0.50 mm (0.02") max. for 12 mm tape.

Reel Dimensions in mm



| Product Type | ΦA | ΦB | ΦC | W |
|--------------|------------|------------|-----------|------------|
| P5Y | 330.00±2.0 | 50.00 Min. | 13.00±0.5 | 18.70 Max. |

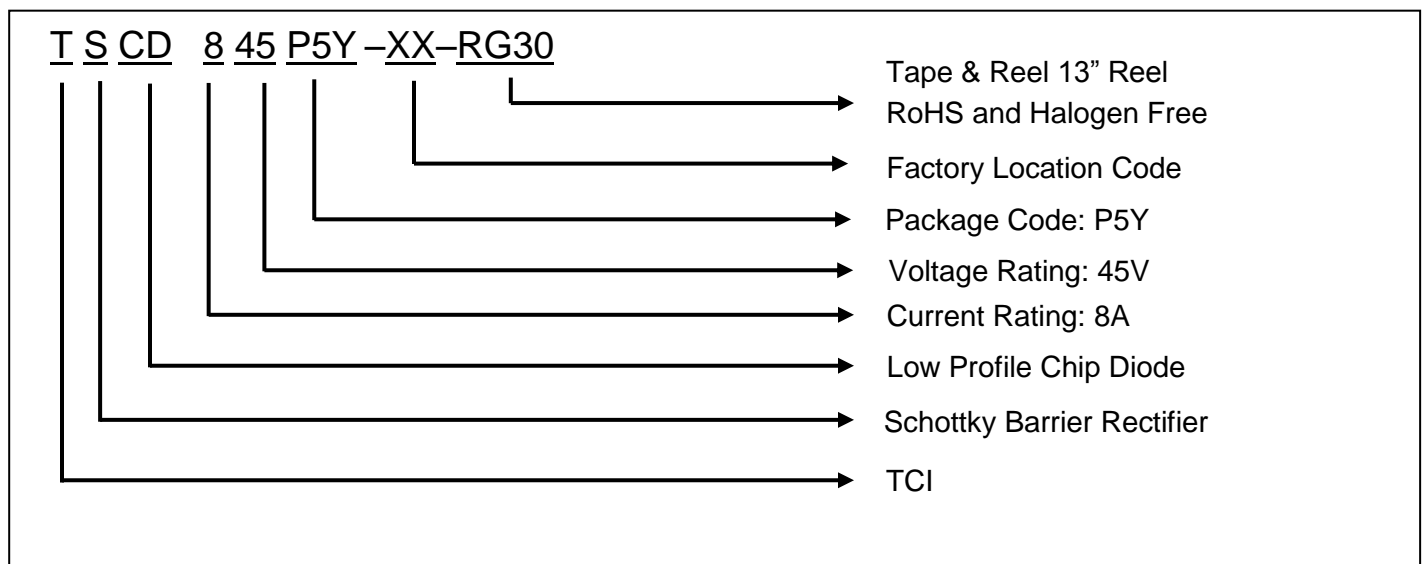
8A Schottky Barrier Rectifier

TSCD845P5Y

Packing Quantity Information:

| Quantity | PCS per Reel | PCS per Inner Box | PCS per Carton |
|------------------|--------------|-------------------|----------------|
| RG30 Tape & Reel | 5,000 | 10,000 | 50,000 |

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