



PFC Device Corporation

PT10L120SP

10A 120V HPTR[®] Schottky Rectifier

Major ratings and characteristics

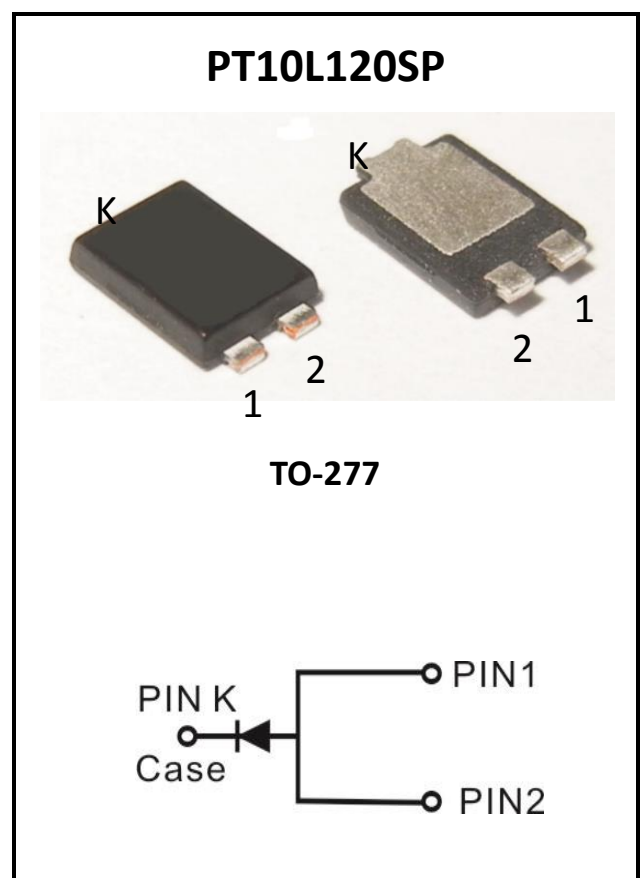
| Characteristics | Values | Units |
|--------------------------------------|-------------|------------|
| $I_{F(AV)}$ Rectangular Waveform | 10 | A |
| V_{RRM} | 120 | V |
| $V_F@ 10A, T_J=125^\circ C$ | 0.65 | V, typ. |
| T_J Operating Junction Temperature | -40 to +150 | $^\circ C$ |

Features

- Super Low Forward Voltage (SLVF[®]) Drop
- Reliable High Temperature Operation
- Softest, fast switching capability
- 150 $^\circ C$ Operating Junction Temperature
- Lead Free Finish, RoHS Compliant
- Green Molding Compound (No Br, Sb)

Typical Applications

Device optimized for low forward voltage drop to maximize efficiency in Power Supply applications



1. Characteristics

Maximum Ratings Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise specified)

| Parameter | Symbol | Values | Units |
|--|----------------|--------------|-----------------------------|
| DC Blocking Voltage | V_{RM} | 120 | Volts |
| Working Peak Reverse Voltage | V_{RWM} | | |
| Peak Repetitive Reverse Voltage | V_{RRM} | | |
| Average Rectified Forward Current Per device | I_o | 10 | Amps |
| Peak Forward Surge Current - 1/2 60hz | I_{FSM} | 140 | Amps |
| Peak Repetitive Reverse Surge Current (2uS-1Khz) | I_{RRM} | 1 | Amps |
| Typical Thermal Resistance | | | |
| Thermal Resistance junction to Ambient Note (1) | $R\theta_{JA}$ | 72 | $^\circ\text{C} / \text{W}$ |
| Thermal Resistance junction to Ambient Note (2) | $R\theta_{JA}$ | 30 | |
| Maximum Rate of Voltage Change (at Rated VR) | dv/dt | 10000 | V/uS |
| Operating Junction Temperature | T_J | - 40 to +150 | $^\circ\text{C}$ |
| Storage Junction Temperature | T_{STG} | - 40 to +150 | |

Electrical Characteristics - (per leg) ($T_A = 25^\circ\text{C}$ unless otherwise specified)

| Parameter | Test Conditions | | Symbol | Typ. | Max. | Units |
|-------------------------------|-----------------|---------------------------|--------|------|------|---------------|
| Instantaneous Forward Voltage | IF = 5 A | $T_J = 25^\circ\text{C}$ | VF* | 0.67 | ---- | Volts |
| | IF = 10 A | | | 0.89 | 0.95 | |
| | IF = 5 A | $T_J = 125^\circ\text{C}$ | | 0.55 | ---- | |
| | IF = 10 A | | | 0.65 | 0.70 | |
| Instantaneous Reverse Current | VR=90V | $T_J = 25^\circ\text{C}$ | IR* | 2 | ---- | μA |
| | VR=120V | | | 5 | 200 | μA |
| | VR=90V | $T_J = 125^\circ\text{C}$ | | 3 | ---- | mA |
| | VR=120V | | | 6 | 18 | mA |

* Pulse width < 300 uS, Duty cycle < 2%

Note 1. FR-4 PCB, 2 oz Copper. Minimum recommended pad layout

Note 2. Polyimide PCB, 2 oz Copper. Cathode pad dimensions 18.8x14.4mm , Anode pad dimensions- (5.6x14.4mm)



2. Characteristics Curves

Ratings and Characteristics Curves

(TA = 25°C unless otherwise specified)

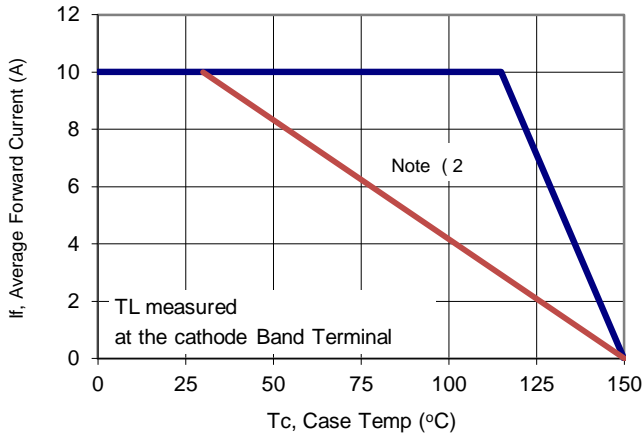


Figure 1: Current Derating, Case

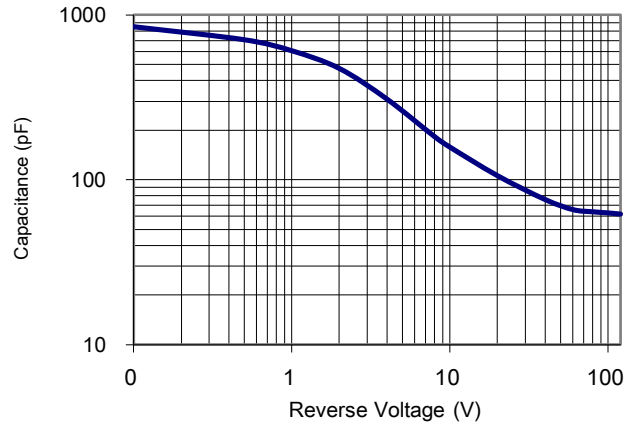


Figure 2: Typical Junction Capacitance

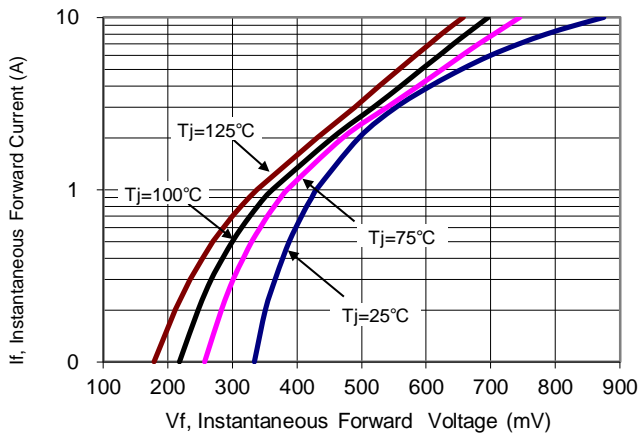


Figure 3: Typical Forward Voltage

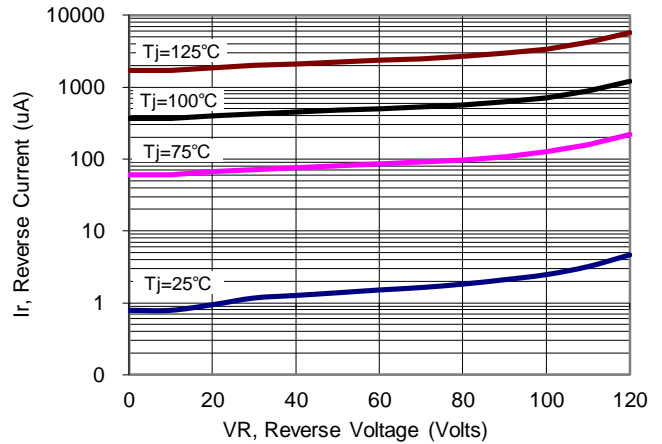
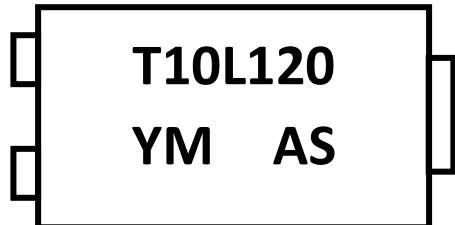


Figure 4: Typical Reverse Current



3. Marking information

Top Marking Rule



T10L120 = Product Type Marking Code

YM = Date Code

Y = Last one digits of year

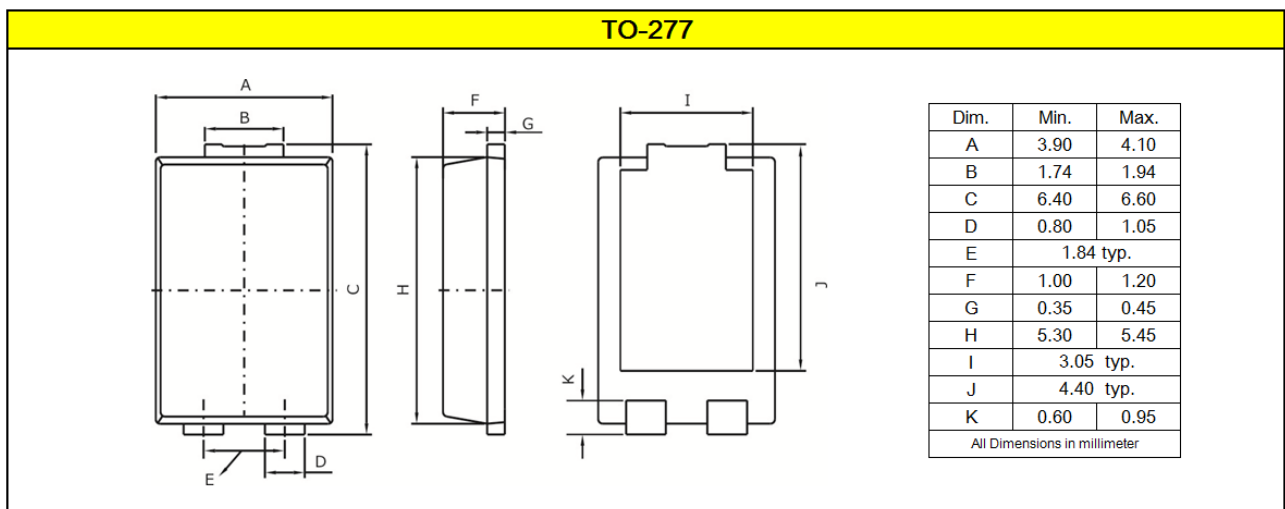
M = Month code

A = Assembly Code

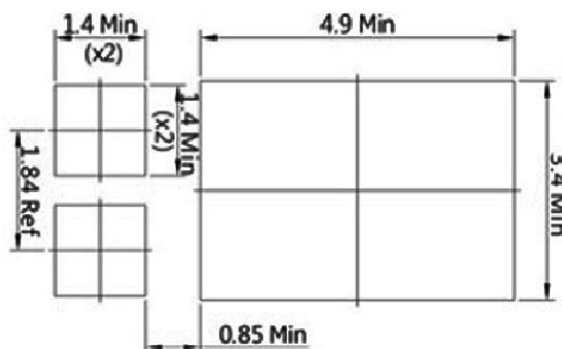
S = Series Number

4. Package information

Suggested Package Outline Dimensions millimeters

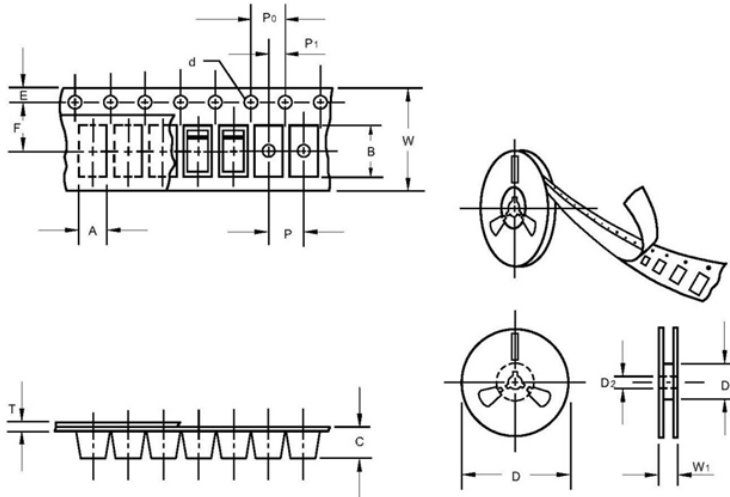


Mounting pad Outline Dimensions millimeters



5. Packing and Ordering information

Packing information millimeters



| Item | Symbol | Dimension |
|-----------------------|--------|-----------|
| Carrier width | A | 4.4±0.10 |
| Carrier length | B | 7.0±0.10 |
| Carrier depth | C | 1.4±0.10 |
| Sprocket hole | d | 1.5±0.10 |
| Reel outside diameter | D | 330.0±1.0 |
| Reel inner diameter | D1 | 75±1.0 |
| Feed hole diameter | D2 | 13.5±1.0 |
| Stocket hole position | E | 1.75±0.10 |
| Punch hole position | F | 7.5±0.10 |
| Punch hole pitch | P | 8.0±0.10 |
| Sprocket hole pitch | P0 | 4.0±0.10 |
| Embossment center | P1 | 2.0±0.10 |
| Total tape thickness | T | 0.3±0.10 |
| Tape width | W | 16.0±0.20 |
| Reel width | W1 | 22.7±1.5 |

Ordering information

| Part Number | Package | Base Quantity | Delivery mode |
|-------------|---------|---------------|------------------------------------|
| PT10L120SP | TO-277 | 5000 | 13" diameter plastic tape and reel |

Mechanical

- Molder Plastic: UL Flammability Classification Rating 94V-0
- Device Weight : 0.003 ounces (0.093grams) - TO-277

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