



PFC Device Corporation

PT20L80E
PT20L80D

20A 80V HPTR[®] Schottky Rectifier

Major ratings and characteristics

| Characteristics | Values | Units |
|--------------------------------------|-------------|---------|
| $I_{F(AV)}$ Rectangular Waveform | 10 × 2 | A |
| V_{RRM} | 80 | V |
| $V_F@ 10A, T_j=125^\circ C$ | 0.59 | V, typ. |
| T_j Operating Junction Temperature | -40 to +150 | °C |

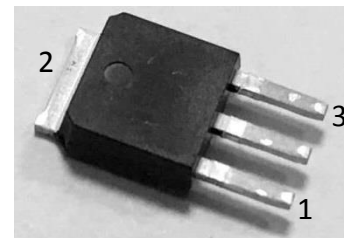
Features

- Super Low Forward Voltage (SLVF[®]) Drop
- Reliable High Temperature Operation
- Softest, fast switching capability
- 150°C Operating Junction Temperature
- Lead Free Finish, RoHS Compliant

Typical Applications

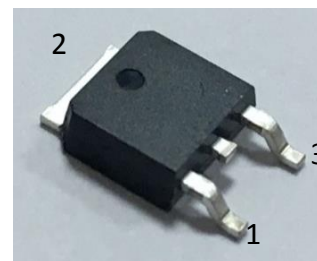
Device optimized for low forward voltage drop to maximize efficiency in Power Supply applications

PT20L80E

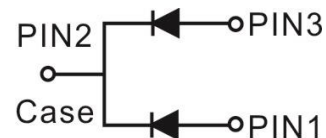


TO-251 (I-PAK)

PT20L80D



TO-252 (D-PAK)



1. Characteristics

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

| Parameter | Symbol | Values | Units |
|---|----------------|--------------|-----------------------------|
| DC Blocking Voltage | V_{RM} | 80 | Volts |
| Working Peak Reverse Voltage | V_{RWM} | | |
| Peak Repetitive Reverse Voltage | V_{RRM} | | |
| Average Rectified Forward Current Per device | I_o | 20 | Amps |
| (Rated VR-20Khz Square Wave) - 50% duty cycle | | | |
| Peak Forward Surge Current - 1/2 60hz | I_{FSM} | 180 | Amps |
| Peak Repetitive Reverse Surge Current (2uS-1Khz) | I_{RRM} | 2 | Amps |
| Typical Thermal Resistance (per leg) Package = I-PAK TO-251 Package =D-PAK TO-252 | $R\theta_{JC}$ | 6 | $^\circ\text{C} / \text{W}$ |
| | | 6 | |
| Maximum Rate of Voltage Change (at Rated V_R) | 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 |
|----------------------------------|----------------------|---------------------------|---------|-----------|-------|---------------|
| Breakdown Voltage | $I_R = 0.5\text{mA}$ | $T_J = 25^\circ\text{C}$ | V_B^* | 80 (min.) | | V |
| Instantaneous Forward Voltage | $I_F = 5\text{ A}$ | $T_J = 25^\circ\text{C}$ | V_F^* | 0.52 | ----- | Volts |
| | $I_F = 10\text{ A}$ | | | 0.62 | 0.67 | |
| | $I_F = 5\text{ A}$ | $T_J = 125^\circ\text{C}$ | | 0.46 | ----- | |
| | $I_F = 10\text{ A}$ | | | 0.59 | 0.64 | |
| Instantaneous Reverse Current | At V_{RM} | $T_J = 25^\circ\text{C}$ | I_R^* | 8 | 300 | μA |
| | | $T_J = 125^\circ\text{C}$ | | 7 | 30 | mA |

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



2. Characteristics Curves

Ratings and Characteristics Curves

(TA = 25°C unless otherwise specified)

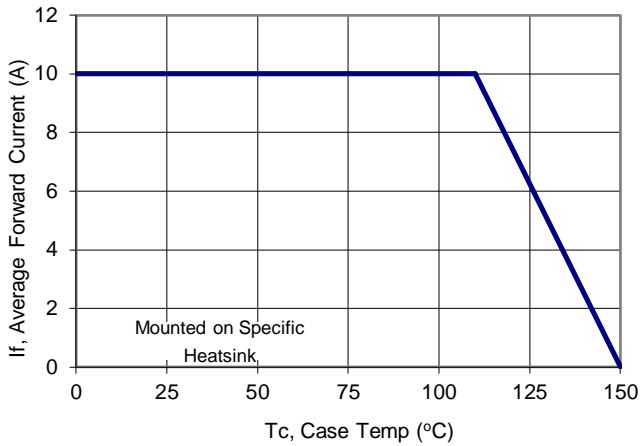


Figure 1: Current Derating, Case

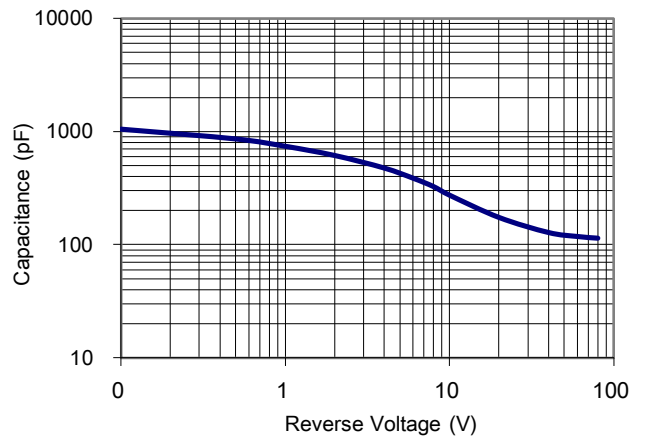


Figure 2: Typical Junction Capacitance

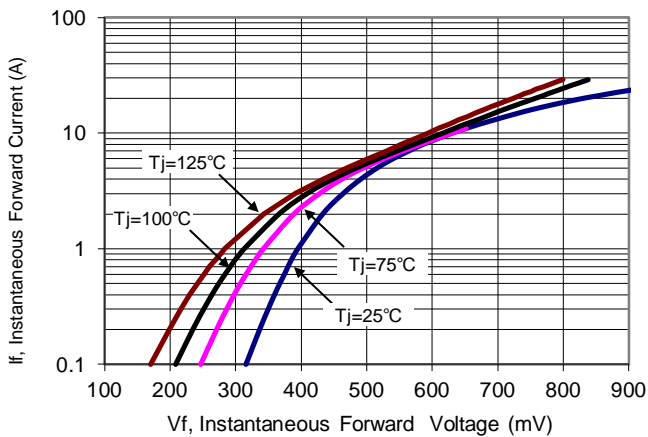


Figure 3: Typical Forward Voltage

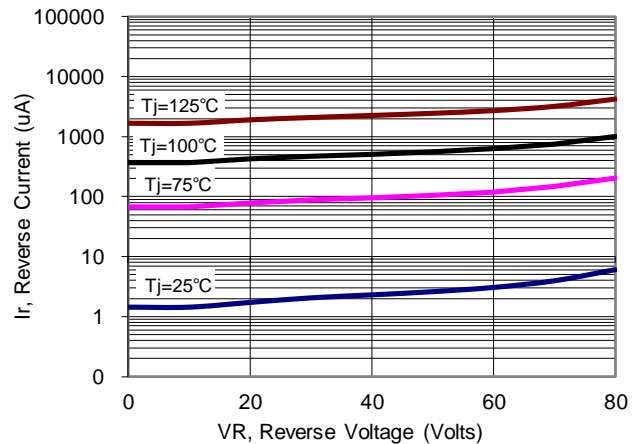


Figure 4: Typical Reverse Current



3. Marking information

Top Marking Rule

PFC
PT20L80E
YYWW ABSH

PT20L80E = Product Type Marking Code
 YYWW = Date Code
 YY = Last two digits of year
 WW = Week code
 AB = Assembly code
 S = Series Number
 H = Halogen Free (N/A = common molding compound)

PFC
PT20L80D
YYWW ABSH

PT20L80D = Product Type Marking Code
 YYWW = Date Code
 YY = Last two digits of year
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 AB = Assembly code
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 H = Halogen Free (N/A = common molding compound)



4. Package information

Package Outline Dimensions millimeters

TO-251 (IPAK)

| Dim. | Min. | Max. |
|------|----------|------|
| A | 6.30 | 6.90 |
| B | 5.10 | 5.60 |
| C | 6.90 | 7.50 |
| D | 3.90 | 4.40 |
| E | 2.3 ref. | |
| F | 0.60 | 1.00 |
| F1 | 0.75 | 1.10 |
| G | 0.45 | 0.70 |
| H | 2.10 | 2.50 |
| J | 0.45 | 0.60 |
| K | 0.45 | 0.60 |
| L | 0.80 | 1.40 |
| M | 5.90 | 6.30 |

All Dimensions in millimeter

TO-252 (DPAK)

| Dim. | Min. | Max. |
|------|-----------|-------|
| A | 6.30 | 6.90 |
| B | 5.10 | 5.60 |
| C | 3.50 | ----- |
| D | 4.60 | ----- |
| E | 9.40 | 10.60 |
| F | 0.50 | 1.20 |
| G | 0.70 | 0.90 |
| H | 0.50 | 0.90 |
| I | 0.50 | 0.90 |
| J | 2.30 Ref. | |
| K | 5.40 | 6.30 |
| L | 2.40 | 3.40 |
| M | 2.10 | 2.50 |
| N | 0.35 | 0.65 |
| O | ----- | 0.20 |
| P | 1.40 | 1.90 |

All Dimensions in millimeter



5. Ordering information

| Part Number | Package | Delivery mode |
|-------------|----------------|------------------------------|
| PT20L80E | TO-251 (I-PAK) | 75 pieces / tube |
| PT20L80D | TO-252 (D-PAK) | 2500 pcs / 13" diameter reel |

Note: For Halogen Free molding compound, add "H" suffix to part number above.

Mechanical

- Molder Plastic: UL Flammability Classification Rating 94V-0
- Device Weight : 0.01 ounces (0.3grams) - TO-251 (I-PAK)
0.01 ounces (0.3grams) - TO-252 (D-PAK)

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