



PFC Device Corporation

P10L300E
P10L300D

10A 300V MOS Schottky Rectifier

Major ratings and characteristics

| Characteristics | Values | Units |
|--------------------------------------|-------------|------------|
| $I_{F(AV)}$ Rectangular Waveform | 5 × 2 | A |
| V_{RRM} | 300 | V |
| $V_F@ 5A, T_J=125^\circ C$ | 0.7 | V, typ. |
| T_J Operating Junction Temperature | -65 to +175 | $^\circ C$ |

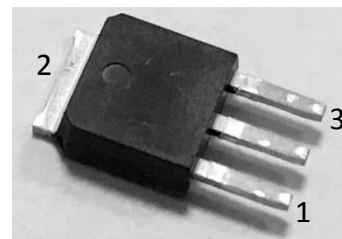
Features

- Low Forward Voltage Drop
- Reliable High Temperature Operation
- Softest, fast switching capability
- 175 $^\circ C$ Operating Junction Temperature
- Lead Free Finish, RoHS Compliant

Typical Applications

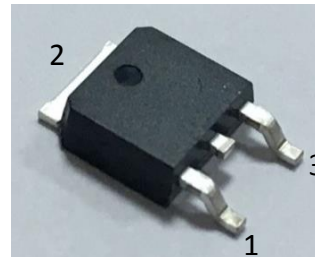
Device optimized for low forward voltage drop to maximize efficiency in Power Supply applications

P10L300E

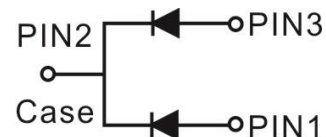


TO-251 (I-PAK)

P10L300D



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} | 300 | Volts |
| Working Peak Reverse Voltage | V_{RWM} | | |
| Peak Repetitive Reverse Voltage | V_{RRM} | | |
| Average Rectified Forward Current Per device (Rated VR-20Khz Square Wave) - 50% duty cycle | I_o | 10 | Amps |
| Peak Forward Surge Current - 1/2 60hz | I_{FSM} | 120 | Amps |
| Peak Repetitive Reverse Surge Current (2uS-1Khz) | I_{RRM} | 0.5 | Amps |
| Typical Thermal Resistance (per leg) Package = I-PAK TO-251 Package =D-PAK TO-252 | $R\theta_{JC}$ | 6 6 | $^\circ\text{C} / \text{W}$ |
| Maximum Rate of Voltage Change (at Rated V_R) | dv/dt | 10000 | V/uS |
| Operating Junction Temperature | T_J | - 65 to +175 | $^\circ\text{C}$ |
| Storage Junction Temperature | T_{STG} | - 65 to +175 | |

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^* | 300 (min.) | | V |
| Instantaneous Forward Voltage | $I_F = 5\text{ A}$ | $T_J = 25^\circ\text{C}$ | V_F^* | ---- | 0.92 | Volts |
| | | $T_J = 125^\circ\text{C}$ | | 0.7 | 0.8 | |
| Instantaneous Reverse Current | At V_{RM} | $T_J = 25^\circ\text{C}$ | I_R^* | ---- | 100 | μA |
| | | $T_J = 125^\circ\text{C}$ | | ---- | 10 | mA |

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



2. Characteristics Curves

Ratings and Characteristics Curves

(TA = 25°C unless otherwise specified)

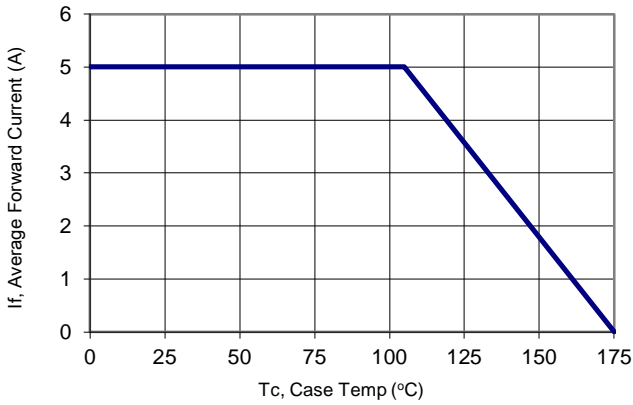


Figure 1: Current Derating, Case

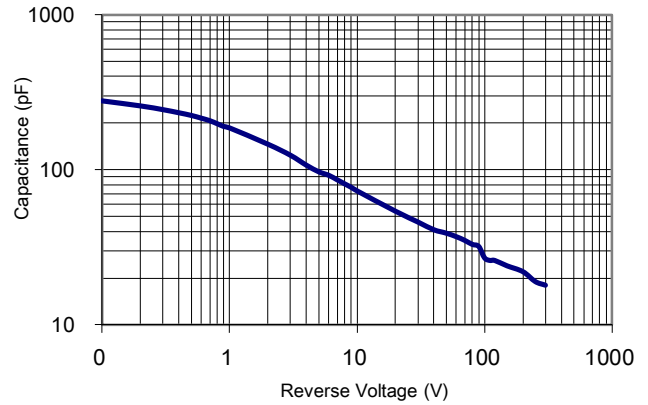


Figure 2: Typical Junction Capacitance

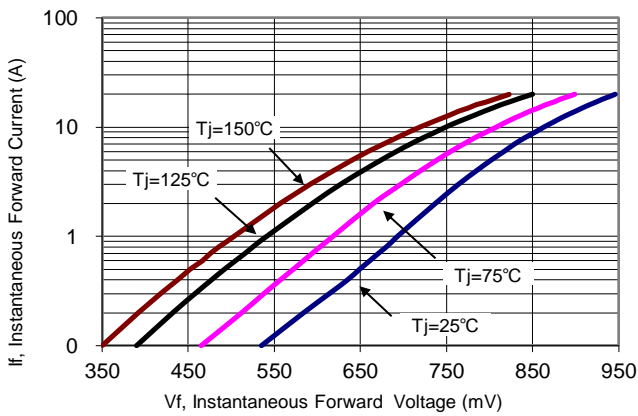


Figure 3: Typical Forward Voltage

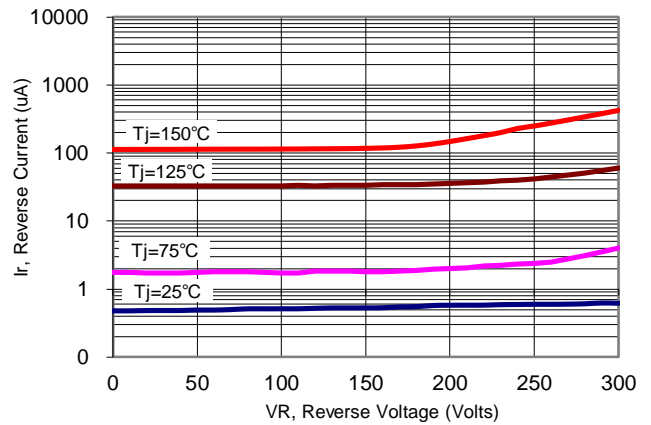


Figure 4: Typical Reverse Current



3. Marking information

Top Marking Rule

PFC
P10L300E
YYWW ABSH

P10L300E = 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)

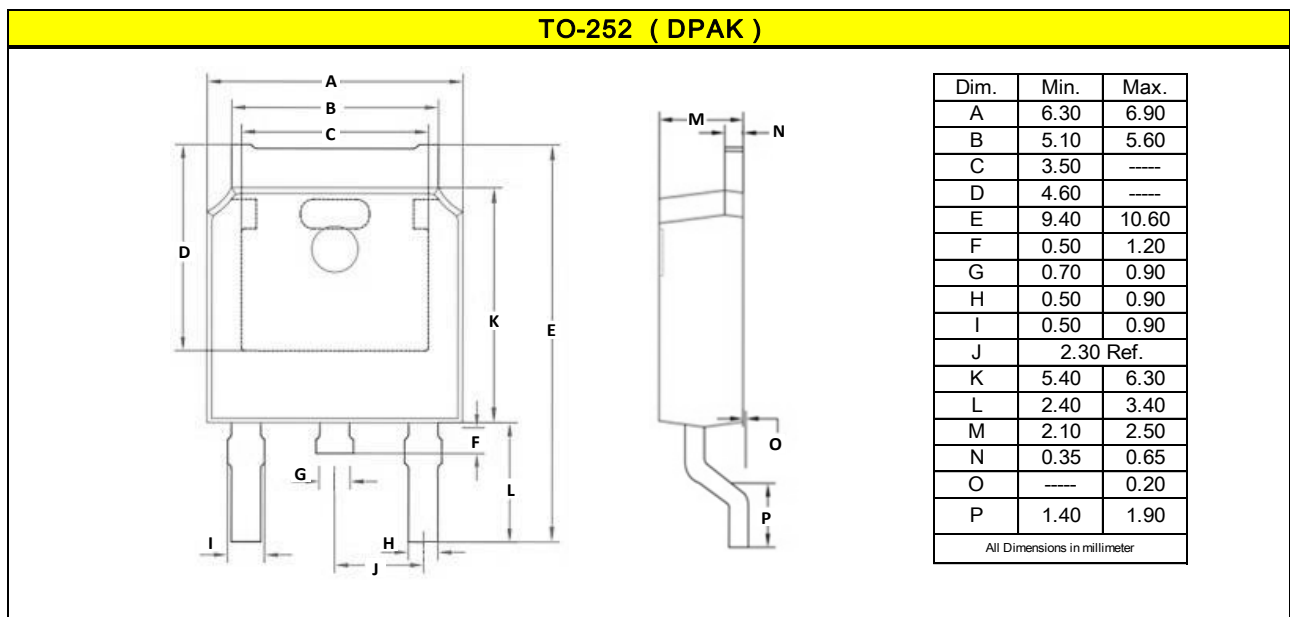
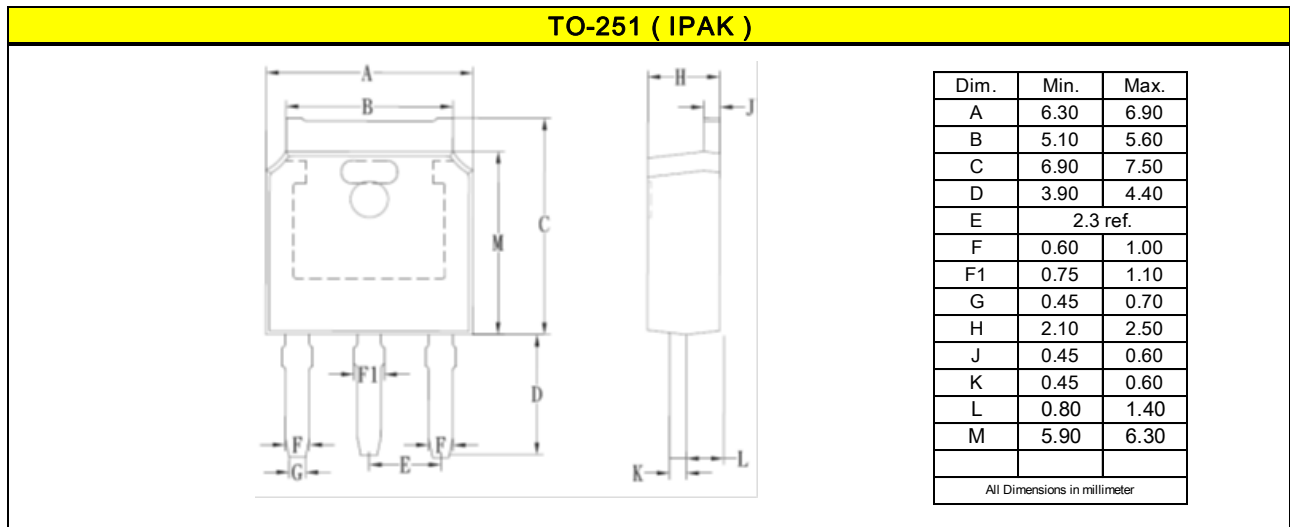
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4. Package information

Package Outline Dimensions millimeters



5. Ordering information

| Part Number | Package | Delivery mode |
|-------------|----------------|------------------------------|
| P10L300E | TO-251 (I-PAK) | 75 pieces / tube |
| P10L300D | 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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