



PFC Device Corporation

**PT10L120ES**  
**PT10L120DS**

## 10A 120V HPTR<sup>®</sup> Single Schottky Rectifier

### Major ratings and characteristics

Characteristics	Values	Units
$I_{F(AV)}$ Rectangular Waveform	10	A
$V_{RRM}$	120	V
$V_F@ 10A, T_j=125^\circ C$	0.67	V, typ.
$T_j$ Operating Junction Temperature	-40 to +150	$^\circ C$

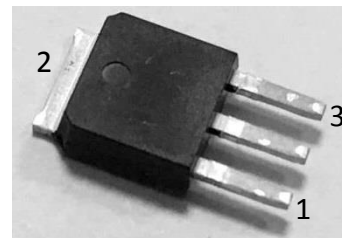
### Features

- Super Low Forward Voltage ( SLVF<sup>®</sup> ) Drop
- Reliable High Temperature Operation
- Softest, fast switching capability
- 150 $^\circ C$  Operating Junction Temperature
- Lead Free Finish, RoHS Compliant

### Typical Applications

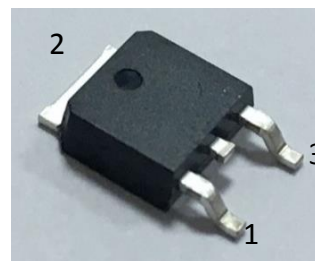
Device optimized for low forward voltage drop to maximize efficiency in Power Supply applications

PT10L120ES

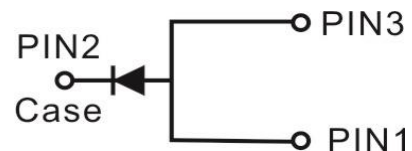


TO-251 (I-PAK)

PT10L120DS



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	$V_{RM}$	120	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	$I_{FSM}$	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 6	$^\circ\text{C} / \text{W}$
Maximum Rate of Voltage Change ( at Rated $V_R$ )	$dv/dt$	10000	V/uS
Operating Junction Temperature	$T_J$	- 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	$I_R = 0.5\text{mA}$	$T_J = 25^\circ\text{C}$	$V_B^*$	120 (min.)		V
Instantaneous Forward Voltage	$I_F = 3\text{ A}$	$T_J = 25^\circ\text{C}$	$V_F^*$	0.58	-----	Volts
	$I_F = 5\text{ A}$			0.66	-----	
	$I_F = 10\text{ A}$			0.86	0.90	
	$I_F = 3\text{ A}$	$T_J = 125^\circ\text{C}$		0.51	-----	
	$I_F = 5\text{ A}$			0.58	-----	
	$I_F = 10\text{ A}$			0.67	0.71	
Instantaneous Reverse Current	$V_R = 90\text{V}$	$T_J = 25^\circ\text{C}$	$I_R^*$	1.6	-----	$\mu\text{A}$
	$V_R = 120\text{V}$			4.4	100	$\mu\text{A}$
	$V_R = 90\text{V}$	$T_J = 125^\circ\text{C}$		2.3	-----	$\text{mA}$
	$V_R = 120\text{V}$			4.7	30	$\text{mA}$

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



2. Characteristics Curves

Ratings and Characteristics Curves

( TA = 25°C unless otherwise specified )

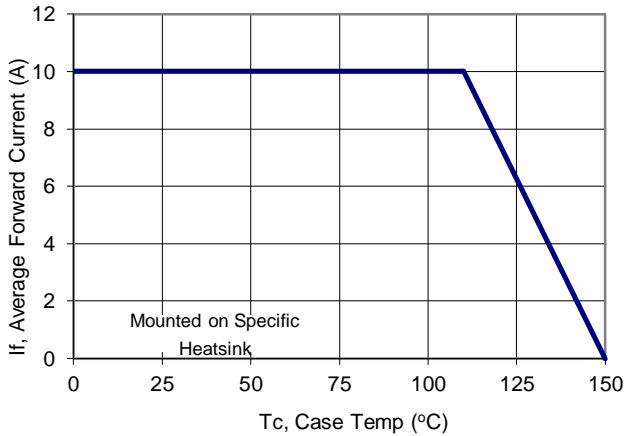


Figure 1: Current Derating, Case

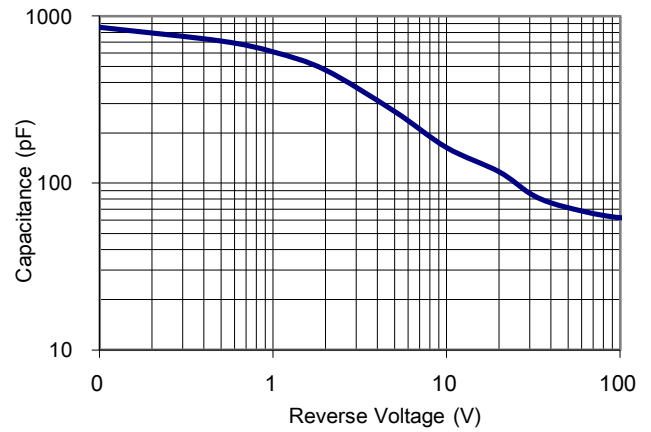


Figure 2: Typical Junction Capacitance

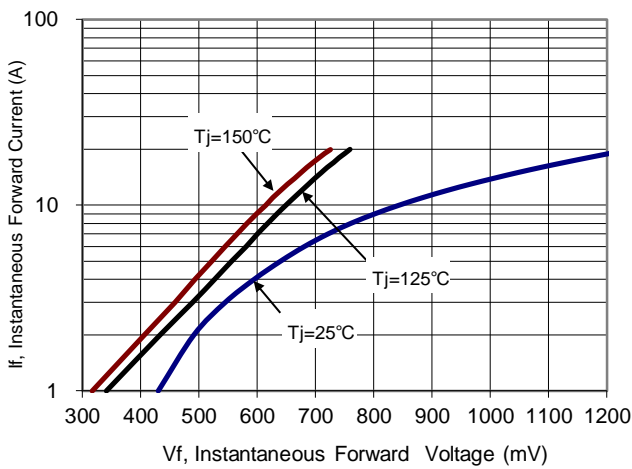


Figure 3: Typical Forward Voltage

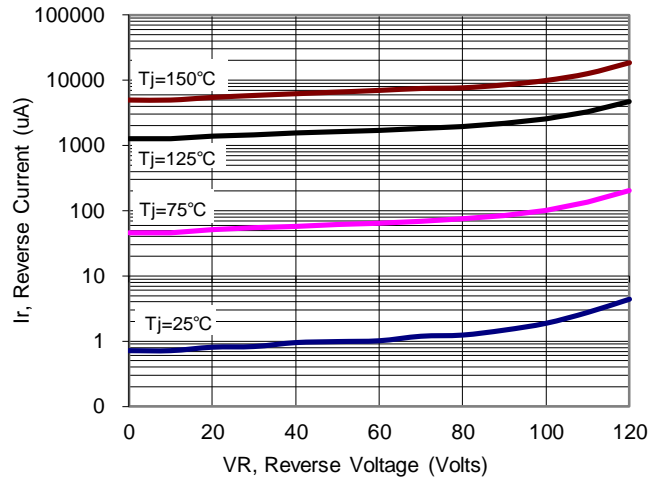


Figure 4: Typical Reverse Current



**3. Marking information**

**Top Marking Rule**

**PFC**  
**PT10L120S**  
**YYWW    ABSH**

PT10L120S = Product Type Marking Code (TO-251)  
 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)

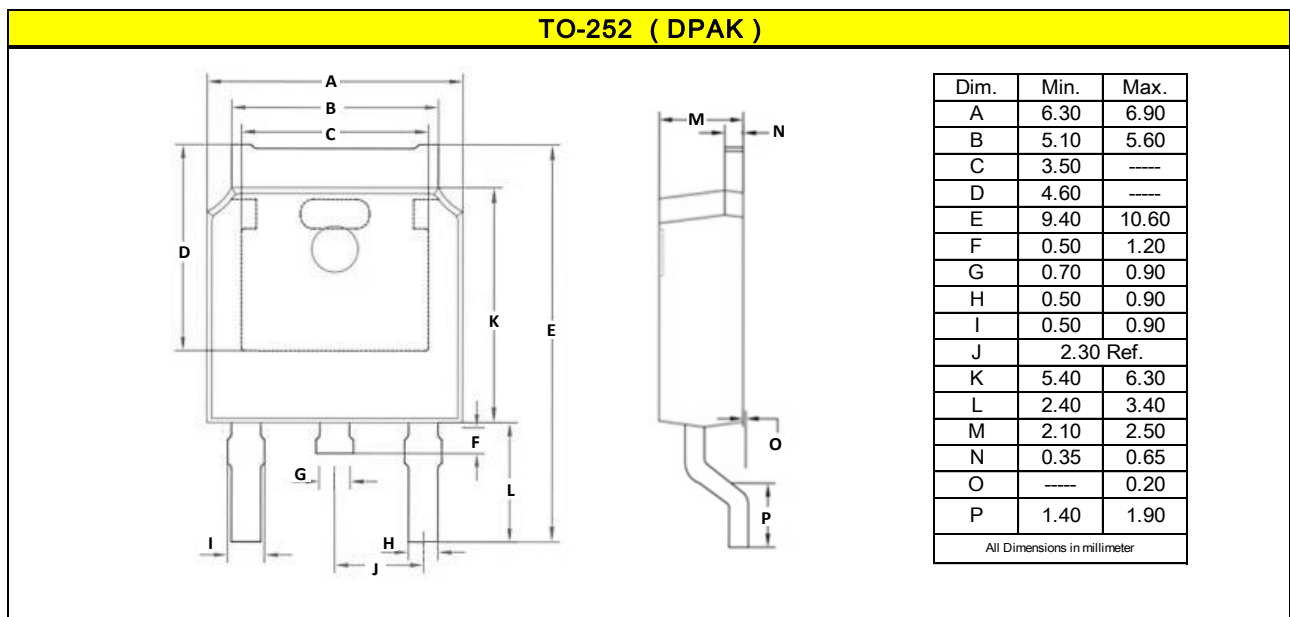
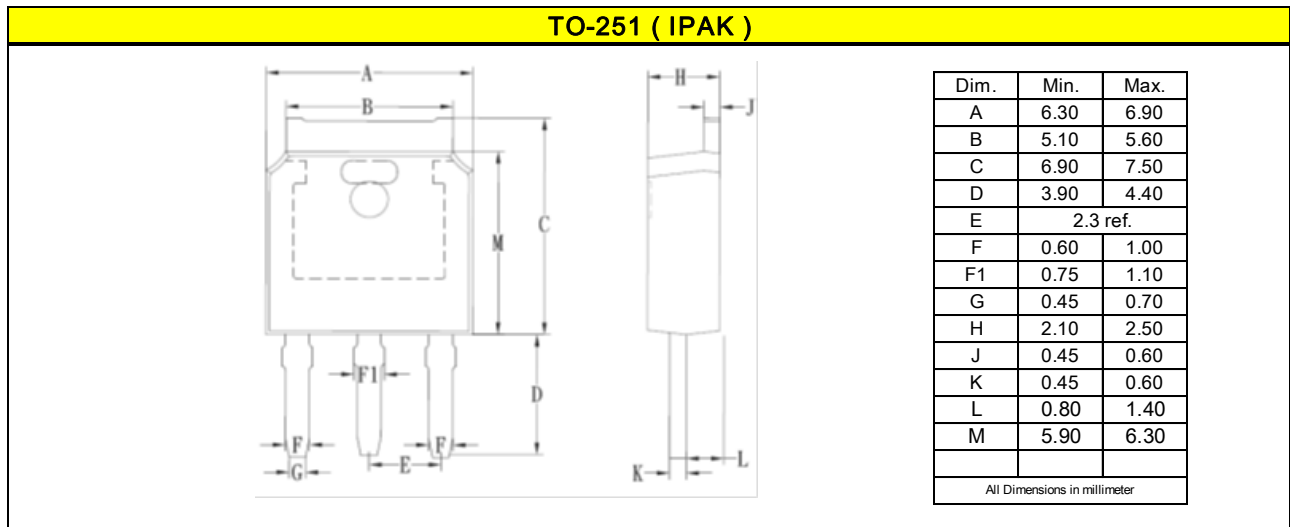
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4. Package information

Package Outline Dimensions millimeters



**5. Ordering information**

Part Number	Package	Delivery mode
PT10L120ES	TO-251 (I-PAK)	75 pieces / tube
PT10L120DS	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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