



PFC Device Corporation

PT20L80ES
PT20L80DS

20A 80V HPTR[®] Single Schottky Rectifier

Major ratings and characteristics

Characteristics	Values	Units
$I_{F(AV)}$ Rectangular Waveform	20	A
V_{RRM}	80	V
$V_F@ 20A, T_j=125^\circ C$	0.65	V, typ.
T_j Operating Junction Temperature	-40 to +150	$^\circ C$

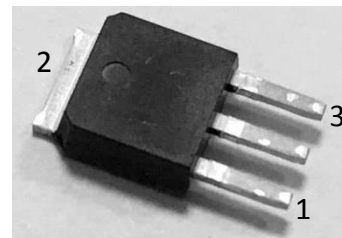
Features

- 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

Typical Applications

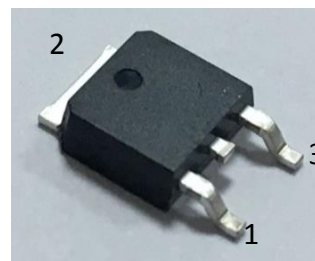
Device optimized for low forward voltage drop to maximize efficiency in Power Supply applications

PT20L80ES

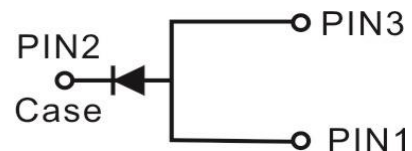


TO-251 (I-PAK)

PT20L80DS



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^*	0.48	-----	Volts
	$I_F = 10\text{ A}$			0.55	-----	
	$I_F = 20\text{ A}$			0.68	0.72	
	$I_F = 5\text{ A}$	$T_J = 125^\circ\text{C}$		0.39	-----	
	$I_F = 10\text{ A}$			0.50	-----	
	$I_F = 20\text{ A}$			0.65	0.69	
Instantaneous Reverse Current	At V_{RM}	$T_J = 25^\circ\text{C}$	I_R^*	20	300	μA
		$T_J = 125^\circ\text{C}$		16	45	mA

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



2. Characteristics Curves

Ratings and Characteristics Curves

(TA = 25°C unless otherwise specified)

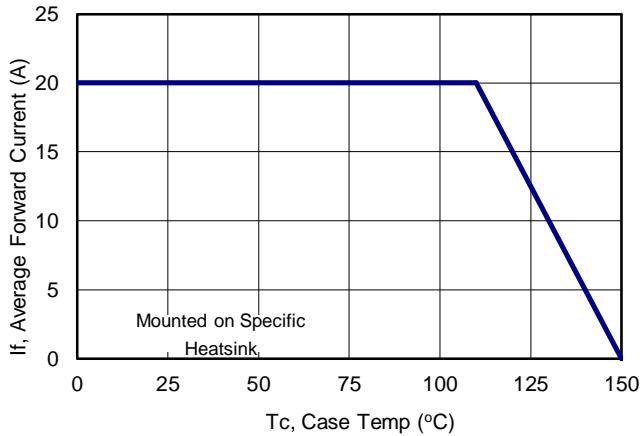


Figure 1: Current Derating, Case

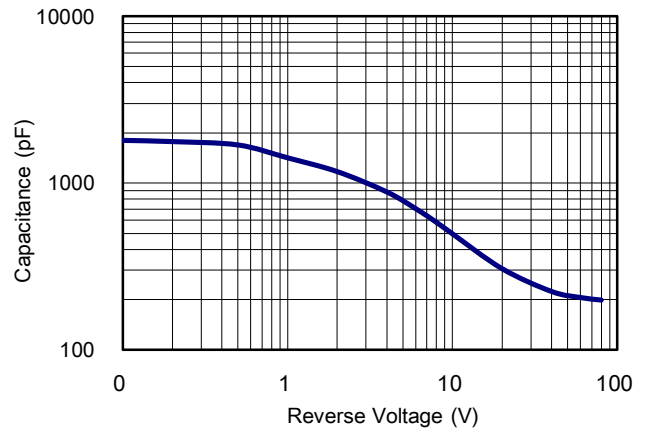


Figure 2: Typical Junction Capacitance

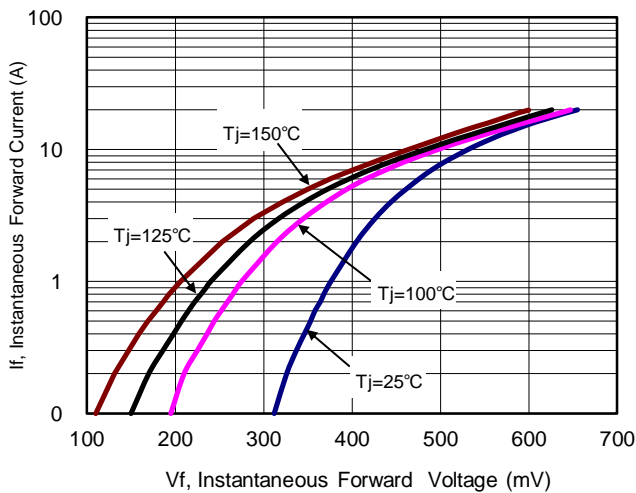


Figure 3: Typical Forward Voltage

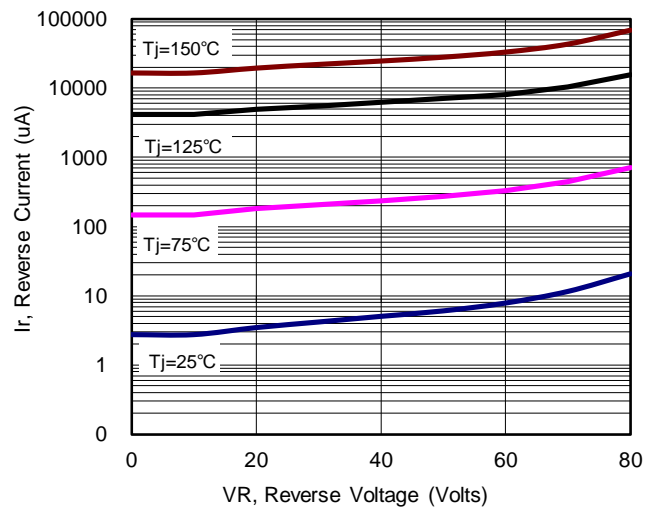


Figure 4: Typical Reverse Current



3. Marking information

Top Marking Rule

PFC
PT20L80S
YYWW ABSH

PT20L80S = 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

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
PT20L80ES	TO-251 (I-PAK)	75 pieces / tube
PT20L80DS	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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