

# Power Factor Corrector (PFC) MODULE

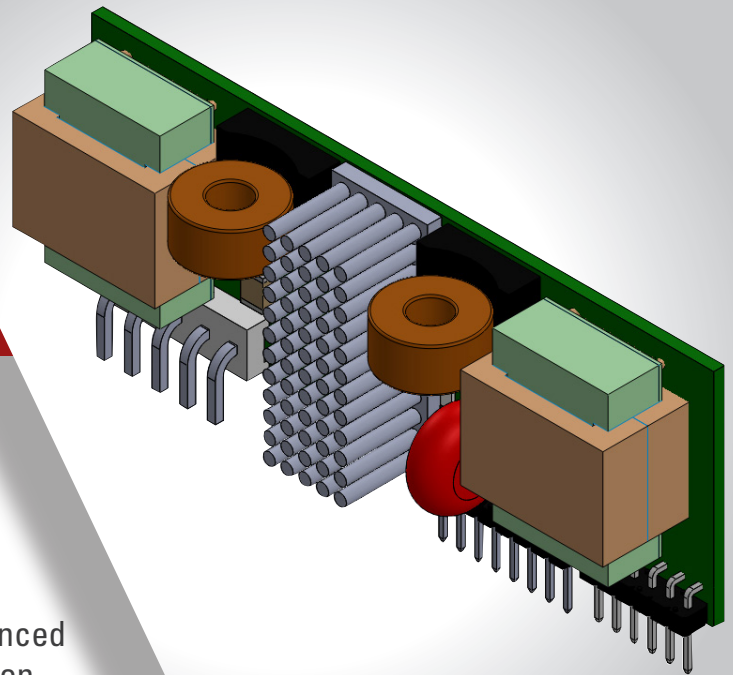
TD-PFC-500 Technical Specification  
*100 to 500W Power Module*

## FEATURES

- High-Efficiency
- Direct connection with ideal diode module
- Low profile, small size
- Low harmonic distortion
- High efficiency interleaved technology
- Vertical or horizontal mount

## PRODUCT OVERVIEW

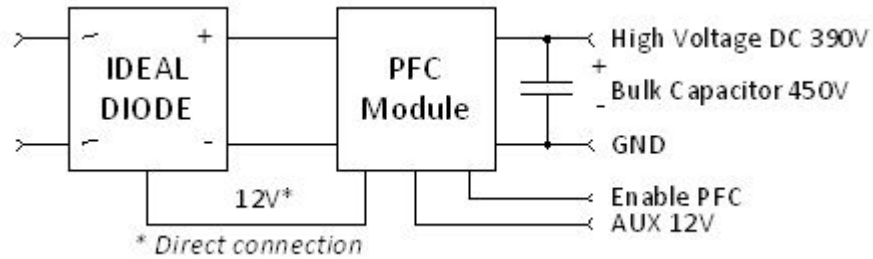
The Telcodium PFC module uses high efficiency interleaved technology with a fast switching mosfet for low loss and low emi integrated in a small form factor module. The Telcodium PFC module uses advanced switching technology to reduce the harmonic distortion under CISPR norm with greater efficiency from low line to high line input and across the load range.



## APPLICATIONS

- Power supply design with high efficiency PFC boost
- High efficiency equipment design
- Convection cooling equipment

Figure 1.



## SPECIFICATIONS

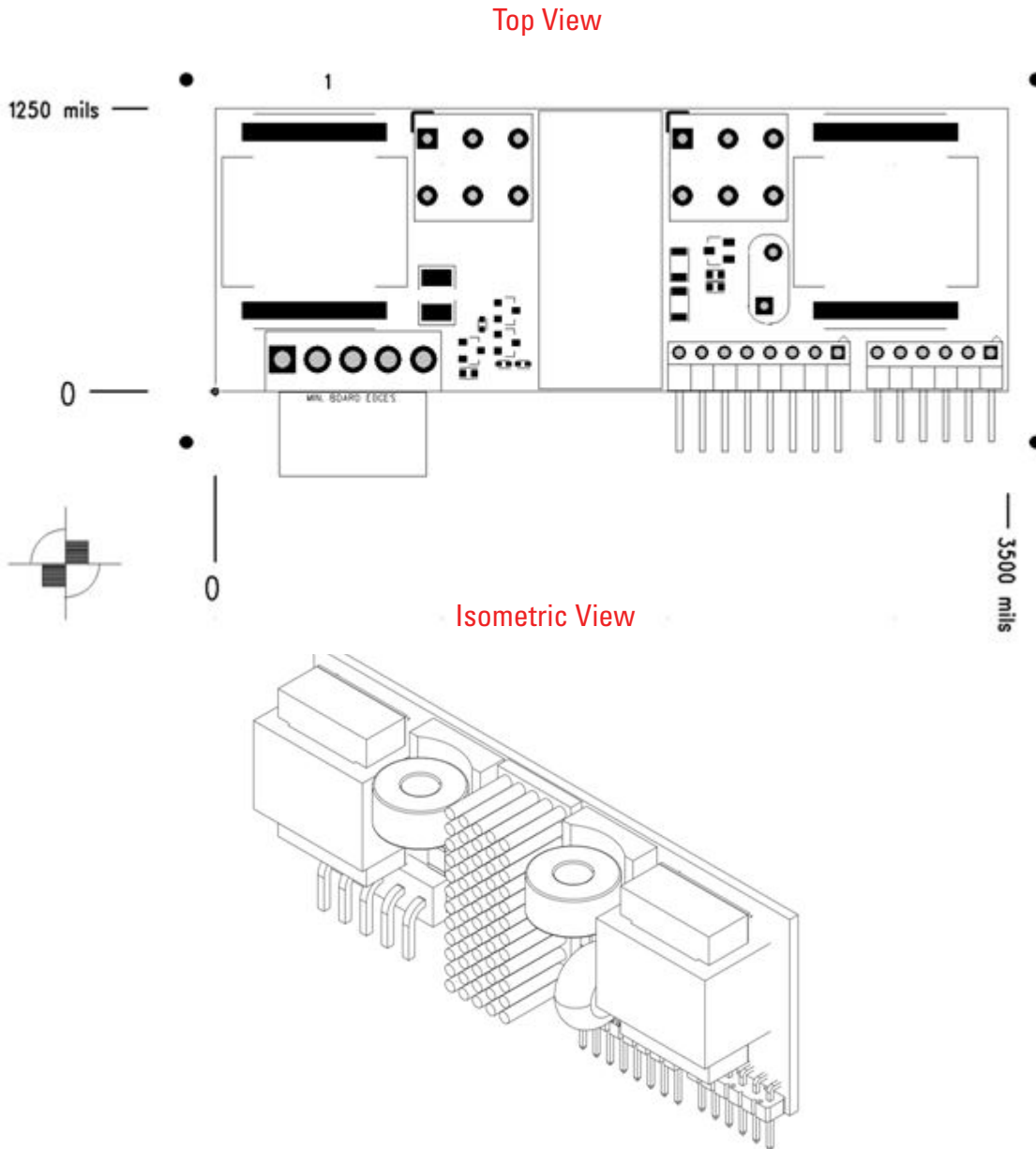
PARAMETERS	MIN	TYP	MAX	UNITS	NOTES
<b>Absolute maximum rating</b>					
Operating temperature	-40	-	95	C	Limited by bulk capacitor
Storage temperature	-45	-	125	C	
Humidity (non condensing)					
Operating	20	-	95	%	RH
Non-Operating	10	-	95	%	RH
<b>Input characteristic (L to N)</b>					
<i>Operating input voltage</i>					
AC input continuous	85	-	265	Vrms	
Operating input frequency	45	-	65	Hz	
Power Factor of AC input line	-	0.99	-		See Graphic
Total Harmonic distortion of AC input current	-	3	-	%	See Graphic
Inrush of AC input current	-	-	50	A	
Maximum input power	-	-	500	W	Vin>85Vrms
Maximum input current	-	-	6	A	Vin=85Vrms
Aux input voltage	11.00	12.00	17.00	Vdc	
Aux input current	tbd	-	tbd	mA	
Thermal Shutdown	140.00	-	160.00	C	
<b>Output characteristics</b>					
Output voltage set point	380	390	400	Vdc	
<i>Output voltage regulation</i>					
Over line		Tbd	(+/-)0.3	%	
Over load		Tbd	(+/-)2	%	
Operating output current range	0	-	1.3	A	
Output over voltage shutdown threshold	420	-	460	Vdc	tbd
Output capacitor (bulk)	100	-	390	uf	Note1

<b>Efficiency</b>						
	50% load		96	-	%	See Graphic 1
	100% load		97	-	%	See Graphic 1
<b>Reliability Characteristics</b>						
Calculated MTBF (MIL-217) MIL-HDBK-217F			10		10 <sup>6</sup> HRS	Tb=70C
<b>EMC</b>						
<i>With Ideal diode and EMC AC Filter</i>						
		EN5501		EN5502		
Operating output current range		1		2	FCC Part 15	
Output over voltage shutdown threshold		EN61000-3-2				
Output capacitor (bulk)		EN61000-3-3				
Electrostatic discharge immunity		EN61000-4-2				
Radiated radio frequency immunity		EN61000-4-3				
Electrical Fast transients/burst		EN61000-4-4				
Line surge immunity		EN61000-4-5				
Conducted immunity		En61000-4-6				
Power Frequency mag field		EN61000-4-8				
Voltage dip immunity		EN61000-4-11				
<b>Standards Compliance</b>						
UL 60950-1/R2011-12						
CAN/CSA-C22.2 No. 60950-1/A1:2011						
EN60950-1/A12:2011						
CE marking						
<b>Mechanical</b>						
Size (WxHxL)		3.5x1.25x0.775		inch		
		88.9x31.75x20		mm		
Weight		75		g		
Note1	For 20mS hold time at 500W , min 330uf at 450Vdc					

Table 1

## OUTLINE DRAWING

Figure 2.



- ✓ See design guide PCB layout for proper clearance and trace width routing
- ✓ Connector TE 640385-5, 0.156" (3.96mm)

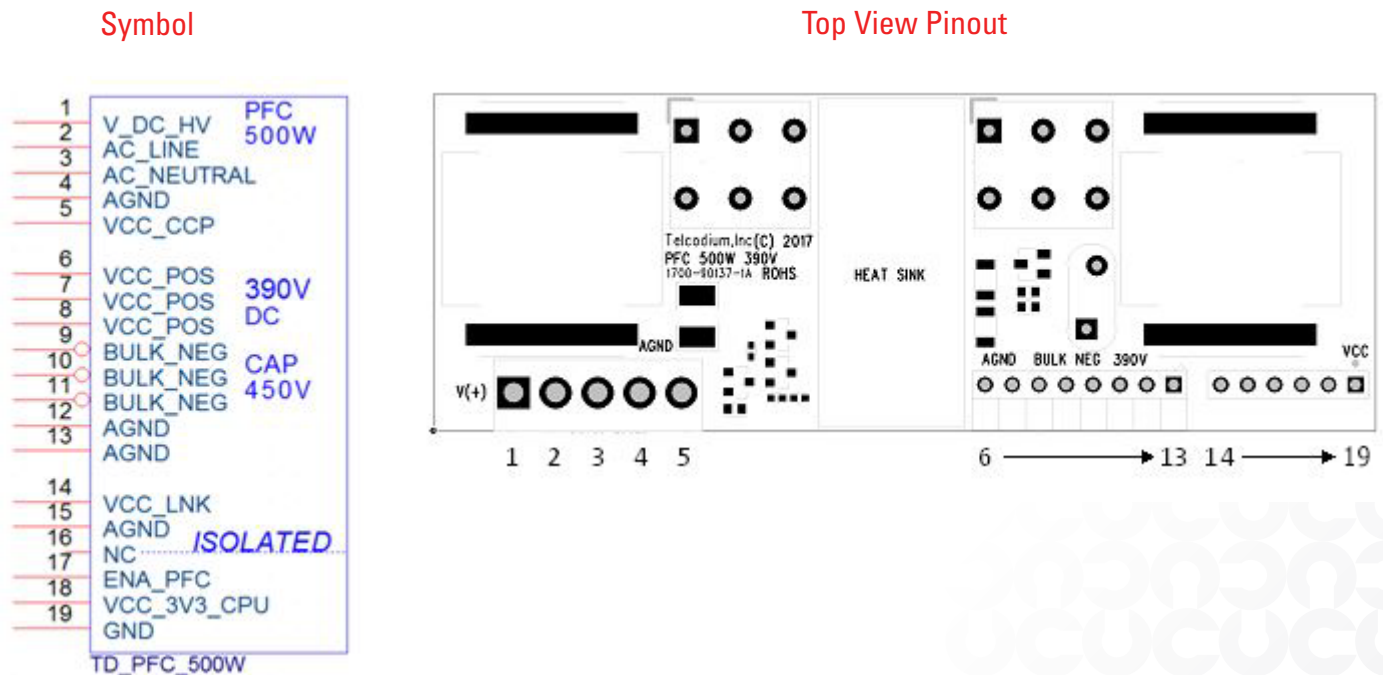
Figure 3.

## ELECTRICAL CONNECTIONS

### Pinout description

- Pin1: DC rectified input full wave rectified (from bridge)
- Pin2: AC line input
- Pin3: AC Neutral input
- Pin4: Ground non-isolated section
- Pin5: Auxiliary 12Vdc power source (100mA max), see design guide
- Pin6-8: Vout 390Vdc
- Pin9-11: External bulk capacitor (negative) connection
- P12-13,15: Ground non-isolated section
- P14: VCC 12-17vdc, input from local DC-DC
- P16: nc
- P17: ENABLE PFC (Active Low)
- P18: VCC 3V3, input pin from TD CPU Module or regulated 3.3V dc source 25mA
- P19: Isolated ground (Caution: do not connect with AGND)

✓ See design guide for connections



## RoHS COMPLIANCE

The EU led RoHS (Restriction of Hazardous Substances) Directive bans the use of Lead, Cadmium, Hexavalent Chromium, Mercury, Polybrominated Biphenyls (PBB), and Polybrominated Diphenyl Ether (PBDE) in Electrical and Electronic Equipment. Telcodium product is 6/6 RoHS compliant. For more information please refer to the Telcodium website RoHS addendum.



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