# **TDK·Lambda**



**RoHS** 

### Simple function, 50 to 600W DC-DC converters

- PHEOOS 280-5
- ♦ High Density
- ◆ Wide Range Input
- Output adjustment Capability
- Remote On/Off
- Fixed Switching Frequency
- International Safety Approvals

#### Key Market Segments & Applications

Telecom Custom Power Supplies Point of Load

## **PH Features and Benefits**

#### Feature

- ♦ High density
- ◆ Low component count
- Fixed operating frequency
- Variety of input voltages

#### Benefit

- Smaller package size
- High reliability Demonstrated 5 million hours MTBF
- Easier system filtering
- Systems can operate from different input voltages

Specifications								
		3.3V	5V	12V	15V	24V	28V	48V
ITEMS								
Input range	VDC	24V nom:	18-36, 48	V nom: 36-76	6V, 110V nom	: 82-185V, 28	0V nom: 200	-400V
Output Voltage Adj. Range	VDC				13.5~16.5			
Line Regulation					iter) over entir			
Load Regulation		0.8% or 40	mV (whiche	ver is greater)	from no load	to full load w	ith constant ir	nput line
Ripple and Noise	pk-pk	100	)mV	150	DmV	240mV	280mV	480mV
Series Operation	-	Possible - Refer to installation manual						
Over Voltage Protection	-	150 - 180% 125 - 145%						
Overload Protection	-	Approximately 105 - 140%, automatic recovery						
Remote On/Off	-	Low = ON, Open = OFF						
Remote Sensing	-	PH100S, PH150S, PH300S, PH600S models						
Parallel operation	-	PH300S & PH600S only: Requires external circuitry						
Inverter Good signal	-	PH300S & PH600S only: Signal available for status of inverter						
Thermal Protection	-	Internal sensing, self resetting						
Cooling	-	Conduction or forced air. See application notes for cooling and heatsink selection						
Operating Temperature Range	-	Baseplate temperature -20°C to +85°C (100°C on PH300 & PH600).						
	-	-40°C start up possible - consult factory						
Storage Temperature	-	-40°C to +85°C (+100°C on PH300 & PH600)						
Temperature Coefficient	-	0.02%/°C						
Isolation	-	Input to output: 3000VAC, Input to Baseplate: 2500VAC(1)						
Isolation Resistance	-	Output to Baseplate -100MOhm at 500VDC and 70%RH						
Safety Agency Approval	-		UL609	50-1, CSA609	950-1, EN609	50-1 and CE	Mark.	
Warranty	-	Two years						

Note: See Installation Manual for full details, test methods of parameters and application notes

(1) PH300S48 models: Input to output 1.5kVAC, input to baseplate 1.5kVAC

# **TDK·Lambda**

# **PH-S Series**

#### **Model Selector**

Output Voltage (V)     Output Current (A)     Power (W)     24V input     48V input     110V input     280V input       3.3     10.0     33.0     -     PH50548-3.3     -     PH505280-3.3       3.3     15.0     49.5     -     PH100548-3.3     -     PH1005280-3.3       3.3     30.0     99.0     -     PH100548-3.3     -     PH1005280-3.3       3.3     50.0     165.0     -     PH300548-3.3     -     PH3005280-3.3       3.3     100.0     50.0     PH505110-5     PH505280-3.3     -     PH4005280-3.3       5.0     10.0     50.0     PH50524-5     PH505110-5     PH505280-5       5.0     20.0     100.0     -     PH100548-5     PH1505110-5     PH1005280-5       5.0     30.0     150.0     -     PH300548-5     -     PH3005280-5       5.0     100.0     500.0     -     -     -     PH605280-12       12.0     4.2     50.0     PH50544-12     PH505110-12     PH505280-12	Nominal						
3.3     10.0     33.0     -     PH50S48-3.3     -     PH50S280-3.3       3.3     15.0     49.5     -     PH75548-3.3     -     PH150S280-3.3       3.3     20.0     66.0     -     PH100S48-3.3     -     PH150S280-3.3       3.3     30.0     99.0     -     PH150S48-3.3     -     PH100S280-3.3       3.3     100.0     50.0     PH50S24-5     PH50S48-5     PH50S110-5     PH50S280-5       5.0     10.0     50.0     PH50S24-5     PH50S48-5     PH50S110-5     PH50S280-5       5.0     20.0     100.0     -     PH100S48-5     PH50S110-5     PH50S280-5       5.0     30.0     150.0     -     PH150S14-12     PH50S110-15     PH150S280-5       5.0     100.0     500.0     -     -     PH50S110-12     PH50S280-5       12.0     6.3     75.0     -     PH150S110-12     PH50S280-12       12.0     5.0     300.0     -     PH100S48-12     PH150S110-12       12.0 <t< th=""><th></th><th></th><th>Output</th><th></th><th></th><th></th><th></th></t<>			Output				
3.3   15.0   49.5   -   PH75548-3.3   -   PH1005280-3.3     3.3   20.0   66.0   -   PH100548-3.3   -   PH1005280-3.3     3.3   30.0   165.0   -   PH300548-3.3   -   PH3005280-3.3     3.3   100.0   300.0   -   -   -   PH605280-3.3     5.0   10.0   50.0   PH50524-5   PH50548-5   PH505110-5   PH505280-5     5.0   15.0   75.0   -   PH100548-5   -   PH1005280-5     5.0   20.0   100.0   -   PH100548-5   -   PH1005280-5     5.0   30.0   150.0   -   PH100548-5   -   PH1005280-5     5.0   30.0   150.0   -   PH3005280-5   -   PH3005280-5     5.0   100.0   500.0   -   -   PH3005280-5   -   PH3005280-12     12.0   4.2   50.0   PH50524-12   PH50548-12   PH755110-12   PH305280-12     12.0   5.3   75.0   -   PH100548-12   -   PH1005280-12 <th>Voltage (V)</th> <th>Current (A)</th> <th>Power (W)</th> <th>24V input</th> <th>48V input</th> <th>110V input</th> <th>280V input</th>	Voltage (V)	Current (A)	Power (W)	24V input	48V input	110V input	280V input
3.3   20.0   66.0   -   PH100S48-3.3   -   PH100S280-3.3     3.3   30.0   99.0   -   PH100S48-3.3   -   PH100S280-3.3     3.3   100.0   330.0   -   -   PH50S48-3.3   -   PH300S48-3.3     3.0   100.0   30.0   -   -   PH50S110-5   PH50S110-5   PH50S280-5     5.0   15.0   75.0   -   PH10S48-5   PH150S110-5   PH50S280-5     5.0   30.0   150.0   -   PH100S48-5   PH150S110-5   PH300S280-5     5.0   30.0   250.0   -   PH300S48-5   PH150S110-12   PH50S280-12     12.0   4.2   50.0   PH50S24-12   PH50S48-12   PH50S110-12   PH50S280-12     12.0   6.3   75.0   -   PH10S48-12   PH75S110-12   PH50S280-12     12.0   8.4   100.0   -   PH10S48-12   PH75S110-12   PH50S280-12     12.0   12.5   150.0   -   PH300S280-15   PH50S110-15   PH50S280-12     12.0   25.0   300.0 <td< th=""><th>3.3</th><th>10.0</th><th></th><th>-</th><th>PH50S48-3.3</th><th>-</th><th>PH50S280-3.3</th></td<>	3.3	10.0		-	PH50S48-3.3	-	PH50S280-3.3
3.3   30.0   99.0   -   PH150S48-3.3   -   PH150S280-3.3     3.3   100.0   330.0   -   -   -   PH300S280-3.3     5.0   10.0   50.0   PH50S24-5   PH50S110-5   PH50S110-5   PH50S280-5     5.0   15.0   75.0   -   PH150S48-5   PH75S110-5   PH75S280-5     5.0   20.0   100.0   -   PH150S48-5   PH150S110-5   PH150S280-5     5.0   30.0   150.0   -   PH300S48-5   -   PH160S280-5     5.0   100.0   500.0   -   -   PH300S48-5   -   PH600S280-5     5.0   100.0   500.0   -   -   -   PH300S48-5   -   PH400S280-5     12.0   4.2   50.0   PH50S24-12   PH50S48-12   PH75S110-12   PH55280-12     12.0   8.4   100.0   -   PH100S48-12   -   PH300S280-12     12.0   2.5   300.0   -   PH30S48-15   PH150S110-15   PH30S280-12     12.0   50.0   600.0   - <td< td=""><th></th><td>15.0</td><td></td><td>-</td><td>PH75S48-3.3</td><td>-</td><td>PH75S280-3.3</td></td<>		15.0		-	PH75S48-3.3	-	PH75S280-3.3
3.3   50.0   165.0   -	3.3	20.0	66.0	-	PH100S48-3.3	-	PH100S280-3.3
3.3   100.0   330.0   -   -   -   PH4005280-3.3     5.0   10.0   50.0   75.0   -   PH75548-5   PH755110-5   PH755280-5     5.0   20.0   100.0   -   PH100548-5   -   PH1005280-5     5.0   30.0   150.0   -   PH100548-5   -   PH3005280-5     5.0   50.0   250.0   -   PH300548-5   -   PH3005280-5     5.0   100.0   500.0   -   -   -   PH6005280-5     5.0   100.0   500.0   -   -   -   PH6005280-5     12.0   4.2   50.0   PH50524-12   PH50548-12   PH505110-12   PH505280-12     12.0   8.4   100.0   -   PH100548-12   -   PH1005280-12     12.0   12.5   150.0   -   PH3003280-12   -   PH3005280-12     12.0   12.5   30.0   -   PH300548-12   -   PH3005280-15     15.0   50.0   75.0   -   PH30524-15   PH505110-15   PH505280-15		30.0	99.0	-	PH150S48-3.3	-	PH150S280-3.3
5.0     10.0     50.0     PH50S24-5     PH50S48-5     PH50S110-5     PH50S280-5       5.0     15.0     75.0     -     PH105S48-5     PH75S110-5     PH170S280-5       5.0     30.0     150.0     -     PH100S48-5     -     PH100S280-5       5.0     50.0     250.0     -     PH300S48-5     -     PH300S280-5       5.0     100.0     500.0     -     -     PH300S48-5     -     PH300S280-5       12.0     4.2     50.0     PH50S24-12     PH50S48-12     PH75S110-12     PH50S280-12       12.0     4.3     100.0     -     PH100S48-12     -     PH100S280-12       12.0     8.4     100.0     -     PH100S48-12     -     PH130S280-12       12.0     12.5     150.0     -     PH300S48-12     -     PH300S280-12       12.0     25.0     300.0     -     -     PH300S48-15     PH50S110-15     PH50S280-15       15.0     5.0     67.0     -     -     PH400S280-15	3.3	50.0	165.0	-	PH300S48-3.3	-	PH300S280-3.3
5.0     15.0     75.0     -     PH75S48-5     PH75S110-5     PH75S280-5       5.0     30.0     150.0     -     PH100S48-5     -     PH100S280-5       5.0     50.0     250.0     -     PH300S48-5     -     PH300S280-5       5.0     100.0     500.0     -     -     PH300S48-5     -     PH300S280-5       5.0     100.0     500.0     -     -     -     PH600S280-12       12.0     4.2     50.0     PH50S24-12     PH50S48-12     PH75S110-12     PH50S280-12       12.0     6.3     75.0     -     PH100S48-12     -     PH100S280-12       12.0     12.5     150.0     -     PH100S48-12     PH75S110-12     PH150S280-12       12.0     25.0     300.0     -     PH300S280-12     -     PH300S280-12       12.0     3.4     50.0     PH50S24-15     PH50S48-15     PH50S110-15     PH30S280-15       15.0     6.7     100.0     -     PH100S48-15     -     PH100S280-15				-	-	-	
5.0     20.0     100.0     -     PH100S48-5     -     PH100S280-5       5.0     30.0     150.0     -     PH100S48-5     PH150S110-5     PH150S280-5       5.0     100.0     500.0     -     -     PH300S280-5     -     PH300S280-5       12.0     4.2     50.0     PH50S24-12     PH50S48-12     PH50S110-12     PH75S280-12       12.0     6.3     75.0     -     PH75S48-12     PH50S110-12     PH75S280-12       12.0     8.4     100.0     -     PH100S48-12     -     PH100S280-12       12.0     12.5     150.0     -     PH100S48-12     -     PH300S280-12       12.0     25.0     300.0     -     PH300S48-12     -     PH300S280-12       12.0     50.0     600.0     -     -     -     PH300S280-12       12.0     50.0     600.0     -     -     -     PH300S280-15       15.0     5.0     75.0     PH50S24-15     PH50S48-15     PH100S280-15       1				PH50S24-5	PH50S48-5		PH50S280-5
5.0     30.0     150.0     -     PH150S48-5     PH150S110-5     PH150S280-5       5.0     100.0     500.0     -     -     PH300S48-5     -     PH300S280-5       12.0     4.2     50.0     PH50S24-12     PH50S48-12     PH50S110-12     PH50S280-12       12.0     6.3     75.0     -     PH75S48-12     PH75S110-12     PH75S280-12       12.0     8.4     100.0     -     PH150S48-12     PH75S110-12     PH150S280-12       12.0     12.5     150.0     -     PH150S48-12     PH150S110-12     PH150S280-12       12.0     25.0     300.0     -     PH300S48-12     -     PH300S280-15       15.0     5.0     75.0     -     PH300S48-15     PH75110-15     PH50S280-15       15.0     5.0     75.0     -     PH300S48-15     -     PH100S280-15       15.0     10.0     150.0     -     PH300S48-15     -     PH300S280-15       15.0     20.0     300.0     -     PH300S48-15     -				-		PH75S110-5	
5.0     50.0     250.0     -     PH300548-5     -     PH3005280-5       12.0     4.2     50.0     PH50524-12     PH50548-12     PH505110-12     PH505280-12       12.0     6.3     75.0     -     PH75548-12     PH755110-12     PH755280-12       12.0     8.4     100.0     -     PH100548-12     -     PH1005280-12       12.0     8.4     100.0     -     PH100548-12     -     PH1005280-12       12.0     12.5     150.0     -     PH100548-12     -     PH1005280-12       12.0     50.0     600.0     -     -     -     PH3005280-12       12.0     50.0     600.0     -     -     -     PH300548-15     PH305110-15     PH305280-15       15.0     3.4     50.0     PH50524-15     PH30548-15     PH505110-15     PH505280-15       15.0     10.0     150.0     -     PH100548-15     -     PH1005280-15       15.0     40.0     60.0     -     -     -     PH				-		-	
5.0     100.0     500.0     -     -     PH6005280-5       12.0     4.2     50.0     PH50S24-12     PH50S48-12     PH50S110-12     PH50S280-12       12.0     6.3     75.0     -     PH75S48-12     PH75S110-12     PH50S280-12       12.0     8.4     100.0     -     PH100548-12     -     PH1005280-12       12.0     12.5     150.0     -     PH100548-12     -     PH1005280-12       12.0     25.0     300.0     -     PH300548-12     -     PH3005280-12       12.0     50.0     600.0     -     -     -     PH3005280-12       12.0     50.0     600.0     -     -     -     PH3005280-12       15.0     3.4     50.0     PH50524-15     PH50548-15     PH505110-15     PH505280-15       15.0     10.0     150.0     -     PH150548-15     PH1505110-15     PH1505280-15       15.0     10.0     150.0     -     PH300548-15     PH1505110-15     PH3005280-15       14.				-		PH150S110-5	
12.0     4.2     50.0     PH50S24-12     PH50S48-12     PH50S110-12     PH50S280-12       12.0     6.3     75.0     -     PH75S48-12     PH75S10-12     PH75S280-12       12.0     8.4     100.0     -     PH150S48-12     -     PH100S280-12       12.0     12.5     150.0     -     PH150S48.12     PH150S110-12     PH150S280-12       12.0     25.0     300.0     -     PH300S48.12     -     PH300S280-12       12.0     50.0     600.0     -     -     PH300S48.15     PH50S110-15     PH50S280-15       15.0     5.0     75.0     -     PH75S48-15     PH50S110-15     PH50S280-15       15.0     6.7     100.0     -     PH100S48.15     -     PH100S280-15       15.0     10.0     150.0     -     PH150S48.15     PH150S110.15     PH300S280-15       15.0     40.0     600.0     -     -     -     PH300S280-15       24.0     2.1     50.0     PH50S24-24     PH50S48-24     PH50S110				-	PH300S48-5	-	
12.0   6.3   75.0   -   PH75S48-12   PH75S110-12   PH75S280-12     12.0   8.4   100.0   -   PH100S48-12   -   PH100S280-12     12.0   12.5   150.0   -   PH150S48-12   PH150S110-12   PH150S280-12     12.0   25.0   300.0   -   PH300S48-12   -   PH300S280-12     12.0   50.0   600.0   -   -   PH300S48-15   PH50S110-15   PH50S280-15     15.0   3.4   50.0   PH50S24-15   PH50S48-15   PH75110-15   PH50S280-15     15.0   6.7   100.0   -   PH100S48-15   PH75110-15   PH50S280-15     15.0   6.7   100.0   -   PH150S48-15   PH75110-15   PH150S280-15     15.0   10.0   150.0   -   PH150S48-15   PH150S110-14   PH50S280-15     15.0   20.0   300.0   -   PH30S48-15   PH150S110-24   PH50S280-24     24.0   2.1   50.0   PH50S24-24   PH50S110-24   PH50S280-24     24.0   3.2   75.0   -   P				-	-	-	
12.0   8.4   100.0   -   PH100S48-12   -   PH100S280-12     12.0   12.5   150.0   -   PH150S48-12   PH150S110-12   PH150S280-12     12.0   25.0   300.0   -   PH300S48-12   -   PH300S280-12     12.0   50.0   600.0   -   -   PH300S280-12     15.0   3.4   50.0   PH50S24-15   PH50S48-15   PH50S110-15   PH50S280-15     15.0   5.0   75.0   -   PH100S48-15   PH50S110-15   PH50S280-15     15.0   6.7   100.0   -   PH100S48-15   PH75110-15   PH75280-15     15.0   0.0   150.0   -   PH100S48-15   -   PH100S280-15     15.0   20.0   300.0   -   PH300S48-15   -   PH300S280-15     15.0   20.0   300.0   -   PH300S48-15   -   PH300S280-15     15.0   40.0   600.0   -   -   -   PH300S280-24     24.0   2.1   50.0   PH50S24-24   PH50S48-24   PH75S110-24   PH50S280-24				PH50S24-12			
12.0   12.5   150.0   -   PH150S48-12   PH150S110-12   PH150S280-12     12.0   25.0   300.0   -   PH300S48-12   -   PH300S280-12     12.0   50.0   600.0   -   -   -   PH300S280-12     12.0   50.0   600.0   -   -   -   PH300S280-12     15.0   3.4   50.0   PH50S24-15   PH50S48-15   PH50S110-15   PH55280-15     15.0   5.0   75.0   -   PH150S48-15   PH75110-15   PH752820-15     15.0   6.7   100.0   -   PH100S48-15   -   PH100S280-15     15.0   10.0   150.0   -   PH300S48-15   -   PH300S280-15     15.0   20.0   300.0   -   PH300S48-15   -   PH300S280-15     15.0   40.0   600.0   -   -   -   PH60S280-24     24.0   2.1   50.0   PH50S24-24   PH50S48-24   PH50S110-24   PH50S280-24     24.0   4.2   100.0   -   PH300S48-24   -   PH100S280-24				-		PH75S110-12	
12.0   25.0   300.0   -   PH300S48-12   -   PH300S280-12     12.0   50.0   600.0   -   -   PH50S280-12     15.0   3.4   50.0   PH50S24-15   PH50S48-15   PH50S110-15   PH50S280-15     15.0   5.0   75.0   -   PH75348-15   PH75110-15   PH752820-15     15.0   6.7   100.0   -   PH100S48-15   -   PH100S280-15     15.0   10.0   150.0   -   PH100S48-15   -   PH100S280-15     15.0   20.0   300.0   -   PH300S48-15   -   PH100S280-15     15.0   40.0   600.0   -   -   -   PH300S280-15     24.0   2.1   50.0   PH50S24-24   PH50S48-24   PH50S110-24   PH50S280-24     24.0   3.2   75.0   -   PH300S48-24   -   PH100S280-24     24.0   4.2   100.0   -   PH10S48-24   PH50S110-24   PH150S280-24     24.0   4.2   100.0   -   PH300S48-24   -   PH300S280-24  <				-		-	
12.0   50.0   600.0   -   -   -   PH600S280-12     15.0   3.4   50.0   PH50S24-15   PH50S48.15   PH50S110-15   PH50S280-15     15.0   5.0   75.0   -   PH75S48.15   PH75110-15   PH75S280.15     15.0   6.7   100.0   -   PH100S48-15   -   PH100S280-15     15.0   10.0   150.0   -   PH130S48-15   PH 150S110-15   PH150S280-15     15.0   20.0   300.0   -   PH300S280-15   -   PH300S280-15     15.0   40.0   600.0   -   -   -   PH60S280-24     24.0   2.1   50.0   PH50S24-24   PH50S48-24   PH50S110-24   PH50S280-24     24.0   3.2   75.0   -   PH100S48-24   -   PH100S280-24     24.0   4.2   100.0   -   PH150S48-24   PH75S110-24   PH50S280-24     24.0   12.5   300.0   -   PH300S48-24   -   PH300S280-24     24.0   12.5   300.0   -   PH300S48-24   -   PH				-		PH150S110-12	
15.0     3.4     50.0     PH50S24-15     PH50S48-15     PH50S110-15     PH50S280-15       15.0     5.0     75.0     -     PH75S48-15     PH75110-15     PH75S280-15       15.0     6.7     100.0     -     PH100S48-15     -     PH100S280-15       15.0     10.0     150.0     -     PH300S48-15     PH150S110-15     PH30S280-15       15.0     20.0     300.0     -     PH30OS48-15     -     PH300S280-15       15.0     40.0     600.0     -     -     PH30OS48-15     -     PH300S280-15       24.0     2.1     50.0     PH50S24-24     PH50S48-24     PH50S110-24     PH50S280-24       24.0     3.2     75.0     -     PH75S48-24     PH50S110-24     PH50S280-24       24.0     4.2     100.0     -     PH300S48-24     -     PH300S280-24       24.0     2.5     300.0     -     PH300S48-24     -     PH300S280-24       24.0     2.5     300.0     -     PH300S48-28     PH150S110-28				-	PH300S48-12	-	
15.0   5.0   75.0   -   PH75S48-15   PH75110-15   PH75S280-15     15.0   6.7   100.0   -   PH100S48-15   -   PH100S280-15     15.0   10.0   150.0   -   PH150S48-15   PH150S110-15   PH150S280-15     15.0   20.0   300.0   -   PH300S48-15   -   PH300S280-15     15.0   40.0   600.0   -   -   PH300S280-15   PH300S280-15     24.0   2.1   50.0   PH50S24-24   PH50S48-24   PH50S110-24   PH50S280-24     24.0   3.2   75.0   -   PH75S48-24   PH75S110-24   PH75S280-24     24.0   4.2   100.0   -   PH100S48-24   -   PH100S280-24     24.0   4.2   100.0   -   PH100S48-24   -   PH100S280-24     24.0   6.3   150.0   -   PH150S48-24   PH150S110-24   PH150S280-24     24.0   12.5   300.0   -   -   PH300S280-24   -   PH300S280-24     24.0   12.5   300.0   -   - <t< td=""><th></th><td></td><td></td><td>-</td><td>-</td><td>-</td><td></td></t<>				-	-	-	
15.0   6.7   100.0   -   PH100S48-15   -   PH100S280-15     15.0   10.0   150.0   -   PH150S48-15   PH150S110-15   PH150S280-15     15.0   20.0   300.0   -   PH300S48-15   -   PH300S280-15     15.0   40.0   600.0   -   -   -   PH600S280-15     24.0   2.1   50.0   PH50S24-24   PH50S48-24   PH50S110-24   PH50S280-24     24.0   3.2   75.0   -   PH75S48-24   PH75S110-24   PH75S280-24     24.0   4.2   100.0   -   PH100S48-24   -   PH100S280-24     24.0   4.2   100.0   -   PH100S48-24   PH75S110-24   PH75S280-24     24.0   4.2   100.0   -   PH100S48-24   -   PH100S280-24     24.0   6.3   150.0   -   PH300S48-24   PH150S110-24   PH150S280-24     24.0   12.5   300.0   -   -   PH300S48-24   -   PH300S280-24     24.0   25.0   600.0   -   -   -				PH50524-15			
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28.0   2.7   75.0   -   PH75\$48-28   PH75\$110-28   PH75\$280-28     28.0   3.6   100.0   -   PH100\$48-28   -   PH100\$280-28     28.0   5.4   150.0   -   PH150\$48-28   PH150\$110-28   PH150\$280-28     28.0   5.4   150.0   -   PH300\$48-28   -   PH300\$280-28     28.0   10.8   302.0   -   PH300\$48-28   -   PH300\$280-28     28.0   21.5   602.0   -   -   -   PH600\$280-28     48.0   6.3   302.0   -   PH300\$48-48   -   PH300\$280-48				PH50S24-28	PH50S48-28	PH50S110-28	
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P	i	n	0	U	t	
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Pin Description	Function
-Vin	Negative Input Terminal
+Vin	Positive Input Terminal
+S	Positive Remote sense
-S	Negative Remote sense
+V	Positive Output Terminal
-V	Negative Output Terminal
IOG	Inverter Good Signal
TRIM	Output adjustment trim pin
CNT	On/Off Control Terminal
CS	Current Monitor Signal

## **Other Lambda DC-DC Products**

PH Full Function	50 - 300W, full function versions of PH
Paq, Pah, Paf	50 - 700W quarter, half & full bricks
PX	10-40W, 12-48V input, DC-DC
CC-E	1.5-25W, 5-48V input, DC-DC

For Additional Information, please visit us.tdk-lambda.com/lp/products/ph-series-sf.htm