25&30W DC-DC Converter P30C-Series

PHI-CON

- High efficiency up to 91%
- 2:1 wide input voltage range
- Over current protection
- Over voltage protection
- Over temperature protection
- Continuous short circuit protection
- Adjustable output voltage
- On/Off - remote control input
- Soft start
- Standard 2" x 1.6" x 0.4" package

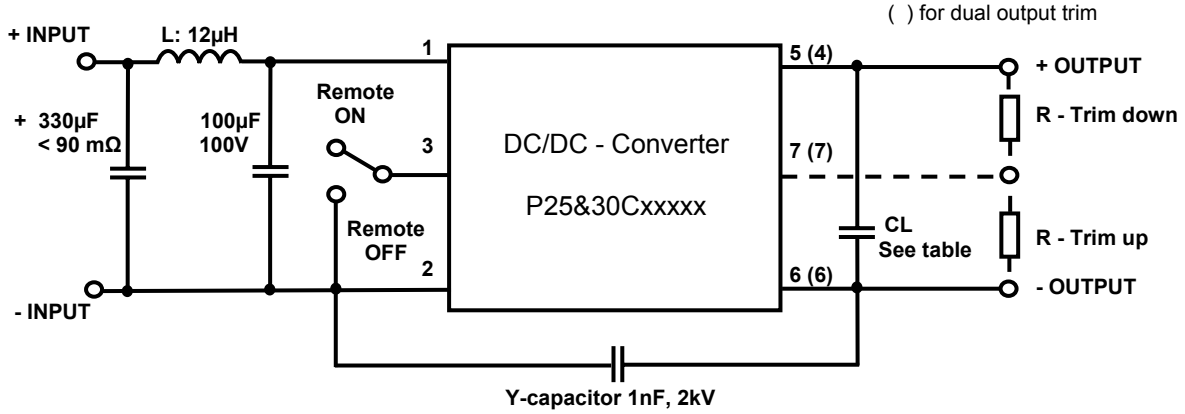


Model selection guide

Typ	Input voltage range [V_{DC}]	Input current no-load [mA]	Input current full-load [mA]	Output voltage [V_{DC}]	Output current range [mA]	Efficiency typ. [%]	Capacitor load max. [µF]
Single output							
P25C12S3P3	9...18	30	1867	3.3	0…5500	83	15000
P25C12S05	9...18	30	2480	5	0…5000	86	10000
P30C12S12	9...18	30	2850	12	0…2500	90	2200
P30C12S15	9...18	30	2850	15	0…2000	90	1000
P25C24S3P3	18...36	25	922	3.3	0…5500	84	15000
P25C24S05	18...36	25	1220	5	0…5000	87	10000
P30C24S12	18...36	25	1400	12	0…2500	91	2200
P30C24S15	18...36	25	1400	15	0…2000	91	1000
P25C48S3P3	36...75	20	460	3.3	0…5500	84	15000
P25C48S05	36...75	20	610	5	0…5000	87	10000
P30C48S12	36...75	20	700	12	0…2500	91	2200
P30C48S15	36...75	20	700	15	0…2000	91	1000
Dual output							
P30C12D12	9...18	30	2850	±12	0…±1250	90	2 x 1000
P30C12D15	9...18	30	2850	±15	0…±1000	90	2 x 680
P30C24D12	18...36	25	1400	±12	0…±1250	91	2 x 1000
P30C24D15	18...36	25	1400	±15	0…±1000	91	2 x 680
P30C48D12	36...75	20	710	±12	0…±1250	90	2 x 1000
P30C48D15	36...75	20	710	±15	0…±1000	90	2 x 680

Circuit diagram

The output voltage can be externally trimmed by using the method shown below.
( ) for dual output trim



HY-LINE® POWER COMPONENTS

Deutschland:
Inselkammerstrasse 10
D-82008 Unterhaching
Tel.: 089 614 503-10
E-Mail: power@hy-line.de

Schweiz:
Gründenstrasse 82
CH-8247 Flurlingen
Tel.: 052 647 42 00
E-Mail: power@hy-line.ch

25&30W DC-DC Converter P30C-Series

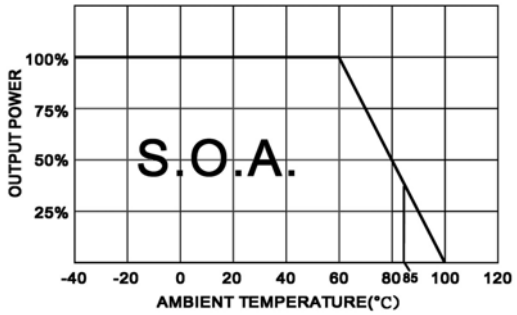
PHI-CON

Specifications

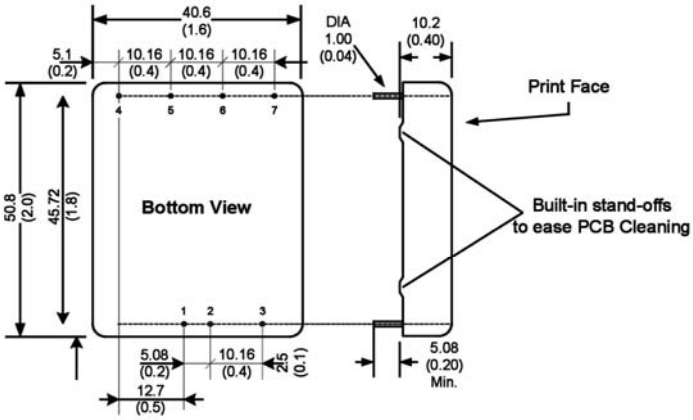
Input	
Input Filter:	Pi- type
Under voltage lockout	12V Type: on @ 8.6V, off @ 7.9V 24V Type: on @ 17.6V, off @ 16V 48V Type: on @ 33.5V, off @ 30.5V
Input surge voltage 100 ms max.	12 V input : -0.7…25 V_{DC} 24 V input : -0.7…50 V_{DC} 48 V input : -0.7…100 V_{DC}
Start up time	20ms typ.
input current remote "off"	2.5mA @ nominal Vin
Isolation	
Isolation voltage	Input to output 1500 V_{DC}, 3sec.
Resistance	10^9 Ω, min
Capacitance	1200 pF, max
Output	
over voltage protection with Z-diode clamp	3.3V-output-type 3.9V 5V-output-type 6.2V (±)12V-output-type 15V (±15V) (±)15V-output-type 18V (±18V)
Voltage accuracy	±1%
Voltage adjustability	±10%
Minimum load	0%
Ripple and noise (at 20 MHz BW)	75mVp-p
Short circuit protection	Hiccup, automatics recovery
Line voltage regulation	± 0.5%
Load voltage regulation	±0.5% @ 10…100% load
Cross regulation @ dual output	±5%
Temperature coefficient	± 0.02% / °C
Transient response recovery time	200µs
Over load protection	120% typ. of full load

General	
Switching frequency	270 kHz, typ.
Standard in accordance with	IEC 60950-1 EN60950-1
Conducted and radiated emissions	EN55022 level A
ESD	EN61000-4-2 pref. criteria B
Radiated immunity	EN61000-4-3 pref. criteria A
Fast transient	EN61000-4-4 pref. criteria A
Surge	EN61000-4-5 pref. criteria A
Conducted immunity	EN61000-4-6 pref. criteria A
PFMF	EN61000-4-8 pref. criteria A
MTBF	>1 Mhrs
Environmental	
Operating temperature	-40°C to +85°C (with derating)
Over temperature protection	110°C
Storage temperature	-55 °C to +125 °C
Maximum case temp.	+100 °C
Humidity	95% rel. Humidity
Thermal impedance	Free-air convection 10°C/W
Thermal shock	MIL-STD-810D
Vibration	10...55Hz, 10G, 30Min. X,Y,Z
Physical	
Dimensions	50.8 x 40.6 x 10.2 mm
Weight	48 g
Case material	Nickel-coated copper
Potting material	Epoxy (UL94-V0)
Soldering temperature	260°C, 10s, 1.5mm from case
Note	
Remote control on Remote control off	Open input or 2.5V…5.5V Short to –Vin or 0V…0.8V

Derating Curve



Dimensions



All dimensions are typical in millimeters (inches).
1. Pin diameter: 1.0 ±0.05 (0.04 ±0.002)
2. Pin pitch tolerance: ±0.35 (±0.014)
3. Case Tolerance: ±0.5 (±0.02)

Pin connections

Pin	Single	Dual
1	+ Input	+ Input
2	- Input	- Input
3	CTRL	CTRL
4	No Pin	+ Output
5	+ Output	Common
6	- Output	- Output
7	Trim	Trim

Life Support Policy: HY-LINE does not authorize the use of any of its products for use in life support devices or systems without the express written approval of an officer of the Company. Life support systems are devices which support or sustain life, and whose failure to perform, when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in significant injury to the user. Rev: 2/08 f

HY-LINE® POWER COMPONENTS

Deutschland:
Inselkammerstrasse 10
D-82008 Unterhaching
Tel.: 089 614 503-10
E-Mail: power@hy-line.de

Schweiz:
Gründenstrasse 82
CH-8247 Flurlingen
Tel.: 052 647 42 00
E-Mail: power@hy-line.ch