

15W DC-DC Converter P15C-Series



PHI-CON

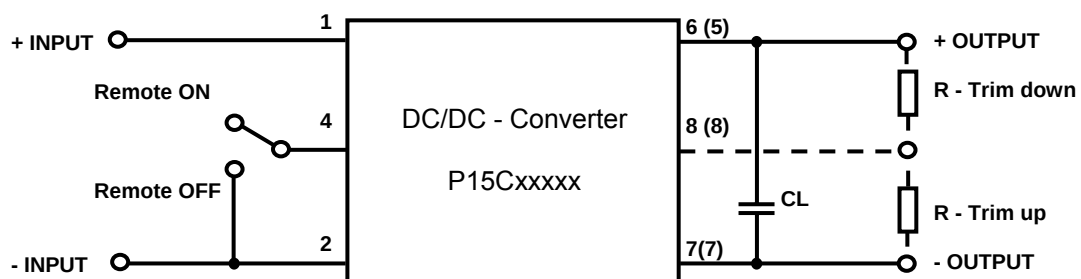
- Output voltage up to 140V
- 4:1 wide input voltage range
- Six-Sided continuous shield
- High efficiency up to 86%
- Standard 2" x 1.6" x 0.4" package
- Fixed switching frequency



Model selection guide

Typ	Input nominal voltage [V _{DC}]	Input current full-load [mA]	Output voltage [V _{DC}]	Output current [mA]	Efficiency typ. [%]	Capacitor load max. [uF]
Single output						
P15C24S05	9 ... 36	822	5	3000	79	6800
P15C24S12	9 ... 36	801	12	1250	82	890
P15C24S15	9 ... 36	801	15	1000	82	570
P15C48S05	18 ... 75	411	5	3000	80	6800
P15C48S12	18 ... 75	401	12	1250	82	890
P15C48S15	18 ... 75	401	15	1000	82	570
P15C48S110	20 ... 72	382	110	140	84	-
P15C48S140	20 ... 72	373	140	110	86	-
Dual output						
P15C24D05	9 ... 36	822	±5	±1500	80	2 x 1700
P15C24D12	9 ... 36	801	±12	±625	82	2 x 300
P15C24D15	9 ... 36	801	±15	±500	82	2 x 200
P15C48D05	18 ... 75	411	±5	±1500	80	2 x 1700
P15C48D12	18 ... 75	401	±12	±625	82	2 x 300
P15C48D15	18 ... 75	401	±15	±500	82	2 x 200

Circuit diagram



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

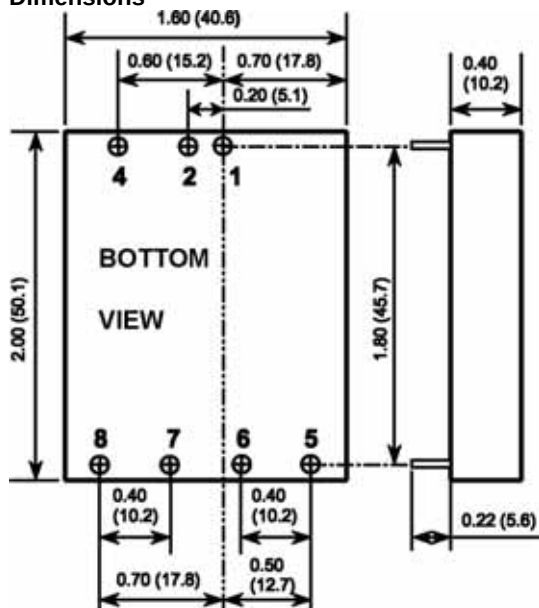
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Specifications

Input	
Voltage range	24V type : 9 ... 36 V _{DC} 48V type : 18 ... 75 V _{DC} HV type : 20 ... 72 V _{DC}
Filter	π Pi type
Input surge voltage for 100mS max.	24V type : 50 V _{DC} max. 48V type : 100 V _{DC} max.
Remote CTRL	On: open or 3.5...12 V _{DC} Off : 0...1.2 V _{DC}
Remote CTRL input current	-2.5mA
Remote CTRL input reference	-Input
Output	
Power	15W max
Voltage accuracy	± 2%
Trim adjustment range	±10 %
Ripple and noise (at 20 MHz BW)	5, 12, 15 V type: 75 mVp-p 110 V type: 100mVp-p 140 V type: 250mVp-p
Short circuit protection	Hiccup, automatics recovery
Line voltage regulation	± 0.5%
Load voltage regulation 10% to full load	single: ± 1% dual: ± 5% 110 V, 140 V type: ± 1%
Transient response recovery time	500 μs at 25 % load chance
Temperature coefficient	± 0.02% / °C
Minimum load	10 % to maintain the specified regulation

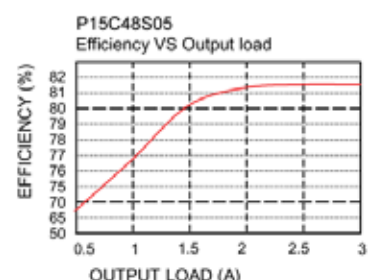
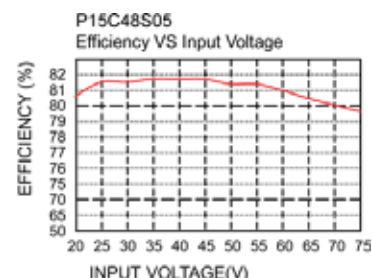
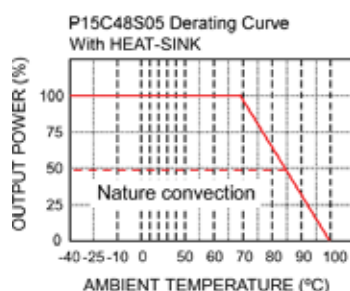
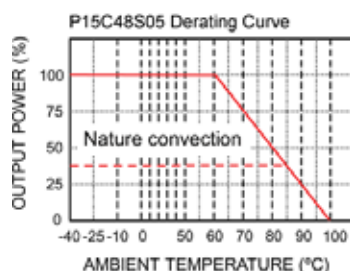
General	
Efficiency	See table
Switching frequency	300 kHz, typ.
Isolation voltage	1600 V _{DC}
Isolation Resistance	10 ⁹ Ω min.
Isolation Capacitance	300 pF, max.
MTBF	2x10 ⁶ hrs
Standard in accordance with	EN60950, IEC60950, UL1950
Environmental	
Operating temperature	-40 °C to +85 °C (with derating)
Storage temperature	-55 °C to +105 °C
Maximum case temp.	+100 °C
Thermal impedance	10°C/W 8.24 °C/W with heat-sink 7G-0011A
Thermal shock	MIL-STD-810D
Vibration	2G, 10-55 Hz, 30 min., XYZ-axis
Humidity	5% to 95% RH
Cooling	Free-air convection
Physical	
Dimensions	2 x 1.6 x 0.4 inches 50.8 x 40.6 x 10.4 mm
Weight	48 g
Case material	Nickel-coated copper
Potting material	Epoxy (UL94-V0)
Conducted & radiated emissions	EN55022 Level A

Dimensions



All dimensions in inches (mm)
Pin Pitch tolerance ±0.014 (0.35)

Derating



Pin connections

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

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Rev: 04 / 2005 f