

2W DC-DC Converter P2B-Series



PHI-CON

- 7 Pin SIL
- Low ripple and noise
- MTBF > 2 MHours
- Up to 5200 V_{DC} isolation



Model selection guide

Typ	Input voltage range [V _{DC}]	Output voltage [V _{DC}]	Output current [mA]	Efficiency typ. [%]	Capacitive load Max. [μF]
Single output					
P2B053R3SS	4.5...5.5	3.3	600	79	470
P2B0505SS	4.5...5.5	5.0	400	80	470
P2B057R2SS	4.5...5.5	7.2	278	83	470
P2B0509SS	4.5...5.5	9.0	222	84	470
P2B0512SS	4.5...5.5	12.0	167	86	470
P2B0515SS	4.5...5.5	15.0	133	84	470
P2B0524SS	4.5...5.5	24.0	83	85	470
P2B123R3SS	10.8...13.2	3.3	600	79	470
P2B1205SS	10.8...13.2	5.0	400	79	470
P2B127R2SS	10.8...13.2	7.2	278	79	470
P2B1209SS	10.8...13.2	9.0	222	84	470
P2B1212SS	10.8...13.2	12.0	167	86	470
P2B1215SS	10.8...13.2	15.0	133	85	470
P2B1224SS	10.8...13.2	24.0	83	84	470
P2B243R3SS	21.6...26.4	3.3	600	79	470
P2B2405SS	21.6...26.4	5.0	400	79	470
P2B247R2SS	21.6...26.4	7.2	278	79	470
P2B2409SS	21.6...26.4	9.0	222	84	470
P2B2412SS	21.6...26.4	12.0	167	88	470
P2B2415SS	21.6...26.4	15.0	133	85	470
P2B2424SS	21.6...26.4	24.0	83	86	470
Dual output					
P2B053R3S	4.5...5.5	±3.3	±300	73	2 x 390
P2B0505S	4.5...5.5	±5.0	±200	74	2 x 390
P2B0506S	4.5...5.5	±6.0	±167	75	2 x 390
P2B057R2S	4.5...5.5	±7.2	±139	76	2 x 390
P2B0509S	4.5...5.5	±9.0	±111	78	2 x 390
P2B0512S	4.5...5.5	±12.0	±84	80	2 x 390
P2B0515S	4.5...5.5	±15.0	±67	82	2 x 390
P2B0524S	4.5...5.5	±24.0	±42	81	2 x 390
P2B123R3S	10.8...13.2	±3.3	±300	75	2 x 390
P2B1205S	10.8...13.2	±5.0	±200	76	2 x 390
P2B127R2S	10.8...13.2	±7.2	±139	77	2 x 390
P2B1209S	10.8...13.2	±9.0	±111	81	2 x 390
P2B1212S	10.8...13.2	±12.0	±84	83	2 x 390
P2B1215S	10.8...13.2	±15.0	±67	85	2 x 390
P2B1224S	10.8...13.2	±24.0	±42	86	2 x 390
P2B243R3S	21.6...26.4	±3.3	±300	78	2 x 390
P2B2405S	21.6...26.4	±5.0	±200	78	2 x 390
P2B247R2S	21.6...26.4	±7.2	±139	80	2 x 390
P2B2409S	21.6...26.4	±9.0	±111	83	2 x 390
P2B2412S	21.6...26.4	±12.0	±84	84	2 x 390
P2B2415S	21.6...26.4	±15.0	±67	85	2 x 390
P2B2424S	21.6...26.4	±24.0	±42	88	2 x 390

Input voltage range reach from 5V to 48V and the output voltage range reach from 3.3V to 24V
 Suffix: "H" for 3kV, "H2" for 2kV, "H4" for 4kV, "H5" for 5.2kV

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Typ	Input voltage range [V _{DC}]	Output 1		Output 2		Efficiency typ. [%]	Capacitive load Max. [μF]
		Voltage [V _{DC}]	Current [mA]	Voltage [V _{DC}]	Current [mA]		
Dual isolated output with different voltages							
P2B053R3S01	4.5...5.5	5.0	200	3.3	200	77	2 x 390
P2B057R2S01	4.5...5.5	5.0	200	7.2	139	77	2 x 390
P2B0509S01	4.5...5.5	5.0	200	9.0	111	77	2 x 390
P2B0512S01	4.5...5.5	5.0	200	12.0	84	80	2 x 390
P2B0515S01	4.5...5.5	5.0	200	15.0	67	80	2 x 390
P2B123R3S01	10.8...13.2	5.0	200	3.3	200	77	2 x 390
P2B127R2S01	10.8...13.2	5.0	200	7.2	139	77	2 x 390
P2B1209S01	10.8...13.2	5.0	200	9.0	111	77	2 x 390
P2B1212S01	10.8...13.2	5.0	200	12.0	84	80	2 x 390
P2B1215S01	10.8...13.2	5.0	200	15.0	67	80	2 x 390
P2B243R3S01	21.6...26.4	5.0	200	3.3	200	77	2 x 390
P2B247R2S01	21.6...26.4	5.0	200	7.2	139	77	2 x 390
P2B2409S01	21.6...26.4	5.0	200	9.0	111	77	2 x 390
P2B2412S01	21.6...26.4	5.0	200	12.0	84	80	2 x 390
P2B2415S01	21.6...26.4	5.0	200	15.0	67	80	2 x 390
Dual isolated output							
P2B053R3S02	4.5...5.5	3.3	300	3.3	300	76	2 x 390
P2B0505S02	4.5...5.5	5.0	200	5.0	200	77	2 x 390
P2B057R2S02	4.5...5.5	7.2	139	7.2	139	78	2 x 390
P2B0509S02	4.5...5.5	9.0	111	9.0	111	78	2 x 390
P2B0512S02	4.5...5.5	12.0	84	12.0	84	82	2 x 390
P2B0515S02	4.5...5.5	15.0	67	15.0	67	82	2 x 390
P2B123R3S02	10.8...13.2	3.3	300	3.3	300	77	2 x 390
P2B1205S02	10.8...13.2	5.0	200	5.0	200	78	2 x 390
P2B127R2S02	10.8...13.2	7.2	139	7.2	139	78	2 x 390
P2B1209S02	10.8...13.2	9.0	111	9.0	111	78	2 x 390
P2B1212S02	10.8...13.2	12.0	84	12.0	84	82	2 x 390
P2B1215S02	10.8...13.2	15.0	67	15.0	67	82	2 x 390
P2B243R3S02	21.6...26.4	3.3	300	3.3	300	77	2 x 390
P2B2405S02	21.6...26.4	5.0	200	5.0	200	78	2 x 390
P2B247R2S02	21.6...26.4	7.2	139	7.2	139	78	2 x 390
P2B2409S02	21.6...26.4	9.0	111	9.0	111	78	2 x 390
P2B2412S02	21.6...26.4	12.0	84	12.0	84	82	2 x 390
P2B2415S02	21.6...26.4	15.0	67	15.0	67	82	2 x 390
P2B2424S02	21.6...26.4	24.0	42	24.0	42	82	2 x 390

Dual separate converter only 1000V isolation voltage

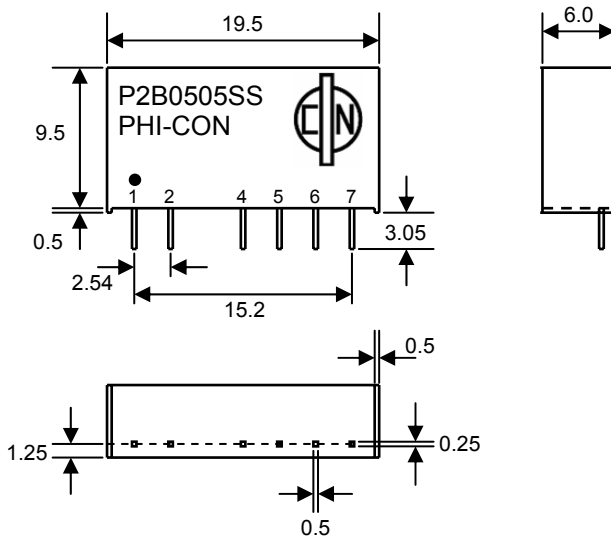
2W DC-DC Converter P2B-Series

Specifications

Input	
Voltage range	± 10%
Filter	Capacitors
Isolation:	
Rated voltage	1000 V _{DC} Standard see suffix note on table
Resistance	10 ⁹ Ω
Capacitance	60 pF, typ.
Output	
Voltage accuracy	± 3%, max.
Voltage balance (dual outputs)	± 1%
Ripple and noise (at 20 MHz BW)	75 mVp-p, max.
Short circuit protection	Momentary
Line voltage regulation	± 1.2% / 1.0% of V _{in}
Load voltage regulation	± 8%, Load@20...100%
Temperature coefficient	± 0.02% / °C

General	
Efficiency	73% to 86%
Switching frequency	125 kHz, typ.
Environmental	
Operating temperature (ambient)	-40 °C to +85 °C
Case temperature	100 °C, max.
Storage temperature	-40 °C to +125 °C
Derating	None required
Humidity	Up to 90%, non-condensing
Cooling	Free-air convection
Physical	
Dimensions	SIL 19.50 x 6.00 x 9.50 mm
Weight	2.5 g
Case material	non-conductive black plastic
For V _{IN} 48V series add a capacitor with 4μ7...47μF in the input!	

Dimensions



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Rev: 5.07 f

Pin connections

Pin	Standard		3kV _{DC}		Dual isolated
	Single	Dual	Dual	Single	
1	+V Input	+V Input	+V Input	+V Input	+V Input
2	-V Input	-V Input	-V Input	-V Input	-V Input
4	-V Output	-V Output	Omitted	Omitted	+V1 Output
5	Omitted	Common	-V Output	-V Output	-V1 Output
6	+V Output	+V Output	Common	Omitted	+V2 Output
7	Omitted	Omitted	+V Output	+V Output	-V2 Output