



PHI-CON

2W DC-DC Converter P2C-Series

- Regulated 24 Pin DIL Package
- Low ripple and noise
- Up to 6000 V_{DC} isolation
- MTBF > 3 MHours
- Continuous short circuit protection
- -40...85°C Operation temperature range
- Metal case optional



Model selection guide

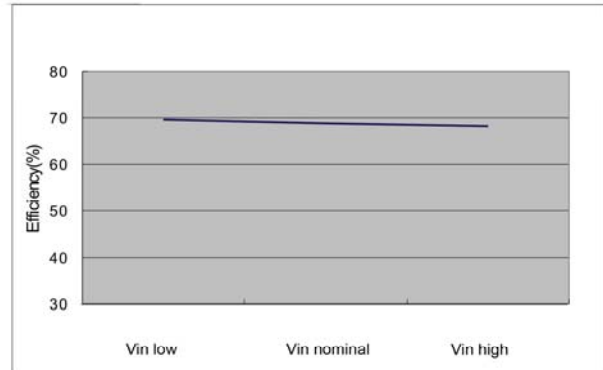
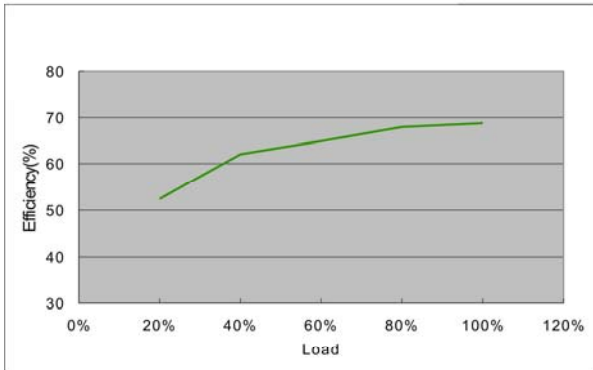
Typ	Input nominal voltage [V _{DC}]	Input current		Output voltage [V _{DC}]	Output current [mA]	Efficiency typ. [%]	Capacitor Load [μF]
		no load [mA]	full load [mA]				
Single output							
P2C053R3S2	4.5...5.5	75	622	3.3	500	53	330
P2C0505S2	4.5...5.5	75	615	5.0	400	65	330
P2C0509S2	4.5...5.5	75	597	9.0	222	67	330
P2C0512S2	4.5...5.5	75	571	12.0	166	70	330
P2C0515S2	4.5...5.5	75	588	15.0	133	68	330
P2C0518S2	4.5...5.5	75	600	18.0	111	66	330
P2C0524S2	4.5...5.5	75	615	24.0	83.5	65	330
P2C123R3S2	10.8...13.2	12	245	3.3	500	56	330
P2C1205S2	10.8...13.2	12	260	5.0	400	64	330
P2C1209S2	10.8...13.2	12	245	9.0	222	68	330
P2C1212S2	10.8...13.2	12	238	12.0	166	70	330
P2C1215S2	10.8...13.2	12	252	15.0	133	66	330
P2C1218S2	10.8...13.2	12	254	18.0	111	66	330
P2C1224S2	10.8...13.2	12	256	24.0	83.5	65	330
P2C243R3S2	21.6...26.4	25	120	3.3	500	57	330
P2C2405S2	21.6...26.4	25	132	5.0	400	63	330
P2C2409S2	21.6...26.4	25	132	9.0	222	63	330
P2C2412S2	21.6...26.4	25	122	12.0	166	68	330
P2C2415S2	21.6...26.4	25	122	15.0	133	68	330
P2C2418S2	21.6...26.4	25	122	18.0	111	68	330
P2C2424S2	21.6...26.4	25	122	24.0	83.5	68	330
Dual output							
P2C053R3D2	4.5...5.5	30	638	±3.3	±300	62	2 x 1000
P2C0505D2	4.5...5.5	30	588	±5.0	±200	68	2 x 1000
P2C0509D2	4.5...5.5	40	571	±9.0	±111	70	2 x 470
P2C0512D2	4.5...5.5	40	571	±12.0	±83	70	2 x 470
P2C0515D2	4.5...5.5	40	571	±15.0	±67	70	2 x 470
P2C0518D2	4.5...5.5	40	575	±18.0	±56	69	2 x 330
P2C0524D2	4.5...5.5	50	579	±24.0	±42	69	2 x 220
P2C123R3D2	10.8...13.2	20	250	±3.3	±300	66	2 x 1000
P2C1205D2	10.8...13.2	20	228	±5.0	±200	73	2 x 1000
P2C1209D2	10.8...13.2	20	222	±9.0	±111	75	2 x 470
P2C1212D2	10.8...13.2	20	213	±12.0	±83	78	2 x 470
P2C1215D2	10.8...13.2	35	216	±15.0	±67	77	2 x 470
P2C1218D2	10.8...13.2	35	217	±18.0	±56	77	2 x 330
P2C1224D2	10.8...13.2	35	219	±24.0	±42	76	2 x 220
P2C243R3D2	21.6...26.4	15	121	±3.3	±300	68	2 x 1000
P2C2405D2	21.6...26.4	15	114	±5.0	±200	73	2 x 1000
P2C2409D2	21.6...26.4	15	111	±9.0	±111	75	2 x 470
P2C2412D2	21.6...26.4	15	104	±12.0	±83	80	2 x 470
P2C2415D2	21.6...26.4	20	108	±15.0	±67	77	2 x 470
P2C2418D2	21.6...26.4	20	109	±18.0	±56	77	2 x 330
P2C2424D2	21.6...26.4	20	111	±24.0	±42	75	2 x 220

Suffix: "H" for 3kV, "H4" for 4kV, "H5" for 5.2kV, "H6" for 6kV isolation voltage

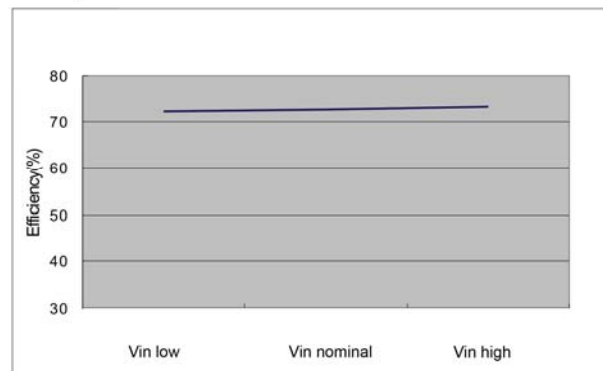
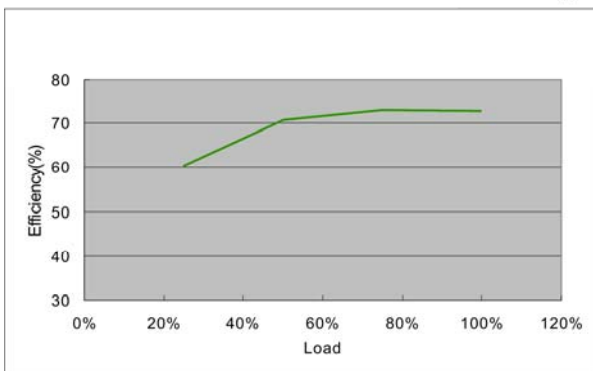
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Efficiency

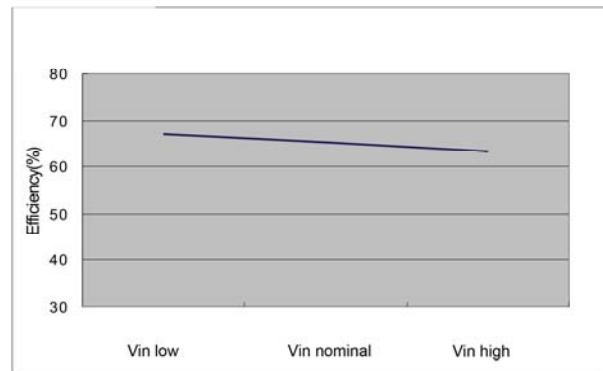
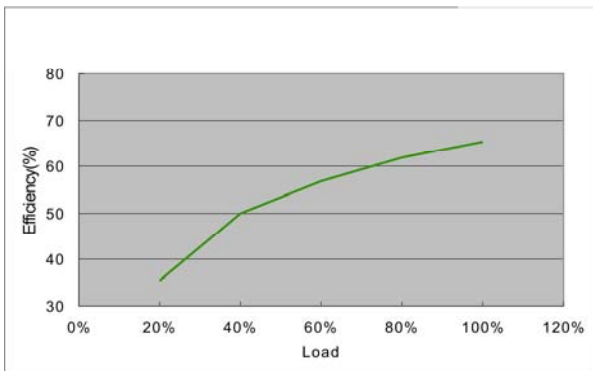
Vin 5V types, single output



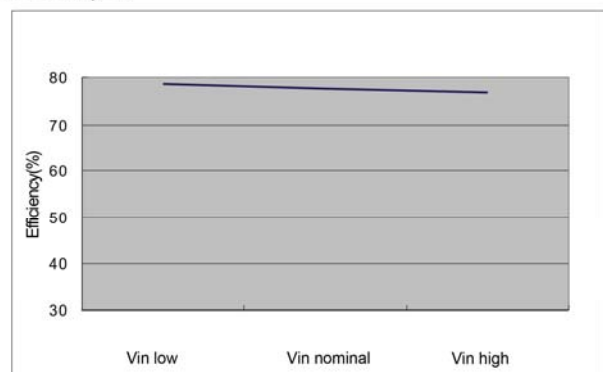
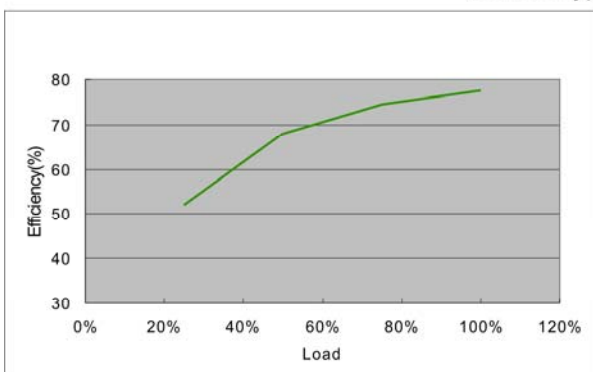
Vin 5V types, dual output



Vin 24V types, single output



Vin 24V types, dual output



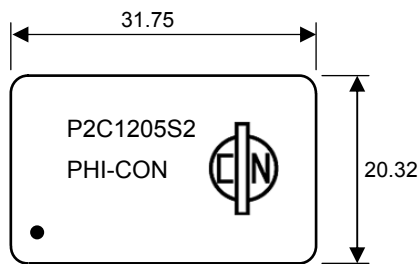
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Specifications

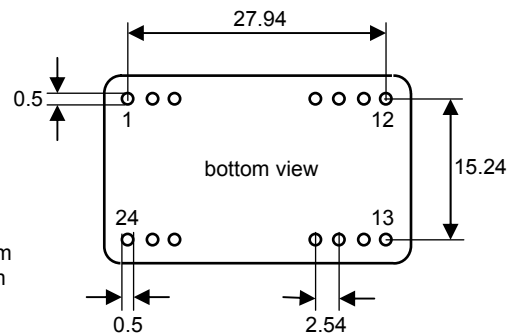
Input	
Voltage range	± 10%
Filter	Pi Network
Isolation:	
Rated voltage	1000 V _{DC} , Standard see table note
Resistance	10 ⁹ Ω
Capacitance	60 pF, typ.
Output	
Voltage accuracy	± 2%, max.
Ripple and noise (at 20 MHz BW)	75 mVp-p, max.
Short circuit protection	Continuous
Short circuit restart	Automatic
Line voltage regulation	± 0.5%, max.
Load voltage regulation	± 0.5%, max.
Temperature coefficient	± 0.02% / °C

General	
Switching frequency typ.	single output 40 kHz dual output 300 kHz
Safety Standard	IEC 60950-1
Environmental	
Operating temperatur (ambient)	-40 °C to +85 °C
Case temperature	100 °C, max.
Storage temperature	-40 °C to +125 °C
Derating	None required
Humidity	Up to 95%, non-condensing
Cooling	Free-air convection
Physical	
Dimensions	31.75x20.32x10.16 mm
Weight	12.5 g plastic case 15 g metal Suffix "M"
Case material	Standard, non-conductive black plastic
Potting material	Epoxy (UL94V-0 rated)
Pin soldering temperature	260°C for 10sec 1.5mm distance from body

Dimensions

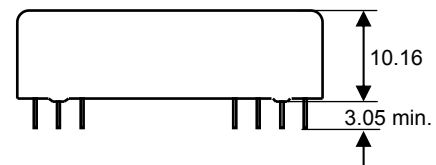


All dimensions in mm
Tolerance ±0.25 mm

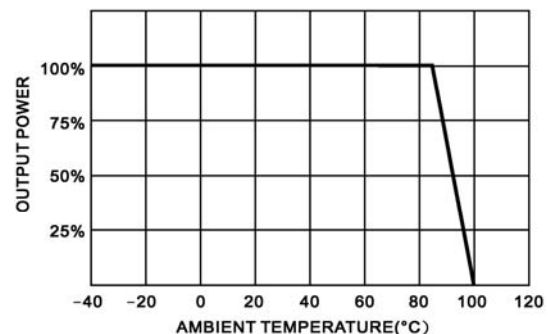


Pin connections

Pin	Standard		3 kV _{DC}	
	Single	Dual	Single	Dual
1	+V Input	+V Input	+V Input	+V Input
2	N.C.	-V Output	+V Input	+V Input
3	N.C.	Common	Omitted	Omitted
10	-V Output	Common	Omitted	Common
11	+V Output	+V Output	Omitted	Common
12	-V Input	-V Input	-V Output	Omitted
13	-V Input	-V Input	+V Output	-V Output
14	+V Output	+V Output	Omitted	Omitted
15	-V Output	Common	Omitted	+V Output
22	N.C.	Common	Omitted	Omitted
23	N.C.	-V Output	-V Input	-V Input
24	+V Input	+V Input	-V Input	-V Input



Derating Curve



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: 11.08 f