

PHI-CON

3W DC-DC Converter P3J-Series

- 7 Pin SIL
- Low ripple and noise
- Up to 3000 V_{DC} isolation
- MTBF > 1.8 Mhours
- -40...85°C operating temperature range
- High efficiency



Model selection guide

Typ	Input nominal voltage [V _{DC}]	Input current no-load [mA]	Input current full-load [mA]	Output voltage [V _{DC}]	Output current [mA]	Efficiency typ. [%]	Capacitive load [μF]
Single output							
P3J0505S	4.5..5.5	80	730	5.0	600	80	220
P3J0509S	4.5..5.5	80	730	9.0	333	81	220
P3J0512S	4.5..5.5	80	725	12.0	250	82	100
P3J0515S	4.5..5.5	80	725	15.0	200	84	100
P3J1205S	10.8..13.2	20	295	5.0	600	84	220
P3J1209S	10.8..13.2	20	295	9.0	333	86	220
P3J1212S	10.8..13.2	20	274	12.0	250	89	100
P3J1215S	10.8..13.2	20	274	15.0	200	90	100
Dual output							
P3J0505D	4.5..5.5	70	730	±5.0	±300	82	2 x 100
P3J0509D	4.5..5.5	70	730	±9.0	±167	83	2 x 100
P3J0512D	4.5..5.5	70	700	±12.0	±125	84	2 x 47
P3J0515D	4.5..5.5	70	700	±15.0	±100	86	2 x 47
P3J1205D	10.8..13.2	20	300	±5.0	±300	85	2 x 100
P3J1209D	10.8..13.2	20	300	±9.0	±167	86	2 x 100
P3J1212D	10.8..13.2	20	275	±12.0	±125	89	2 x 47
P3J1215D	10.8..13.2	20	275	±15.0	±100	90	2 x 47

Suffix: "H" for 3kV isolation voltage

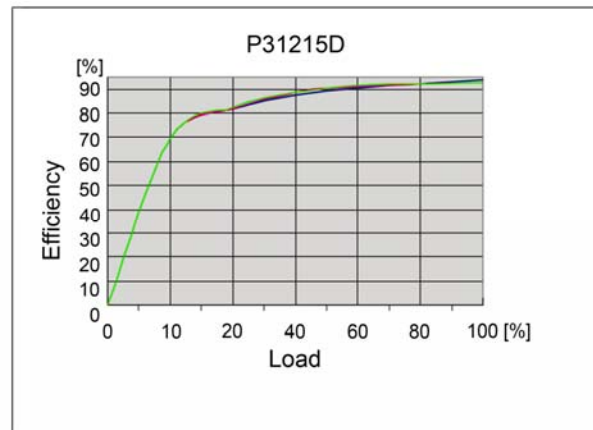
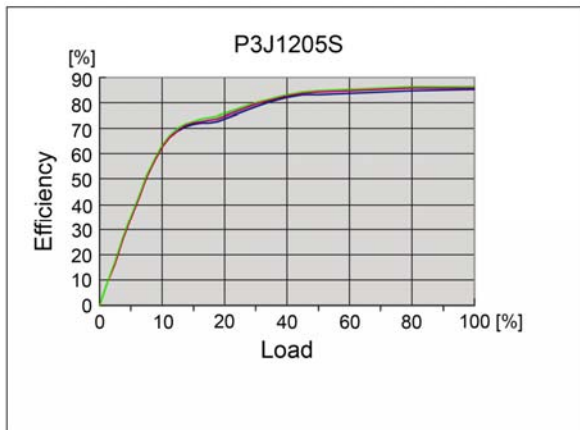
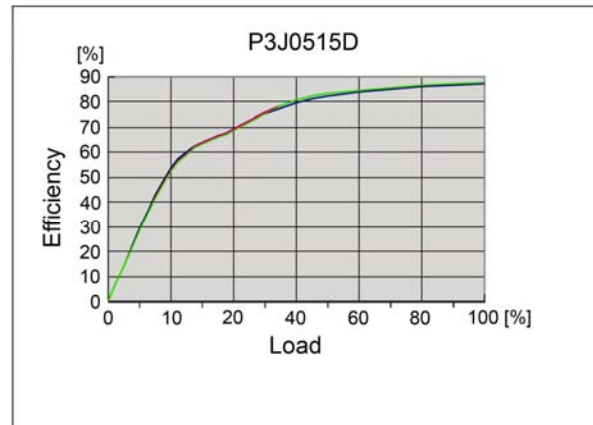
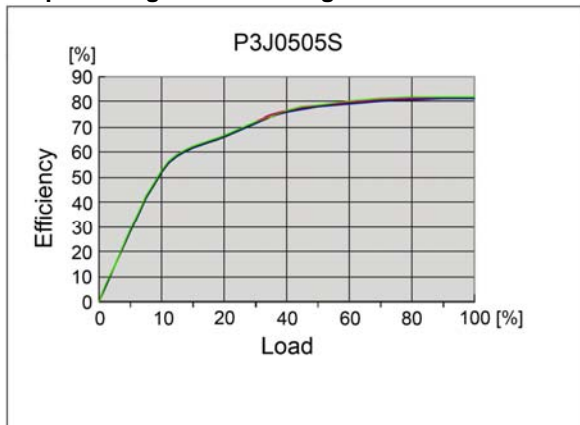
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Specifications

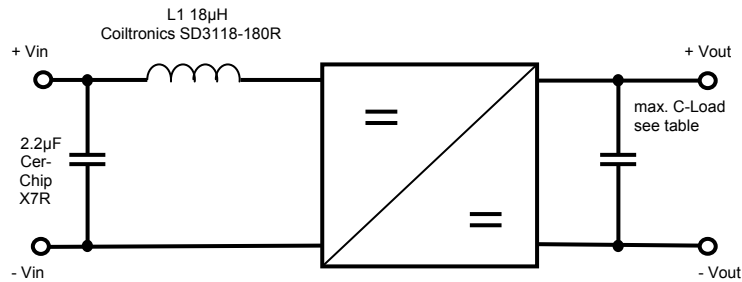
Input	
Voltage range	± 10 %
Filter	Capacitors
I/O-Isolation:	
DC-Isolation voltage tested for 3 sec.	1 kV, 3 kV
Resistance	10 ⁹ Ω, max.
Capacitance	60 pF, typ.
Output	
Voltage accuracy	± 3 %, max.
Ripple and noise (at 20 MHz BW)	50 mVp-p, max.
Line voltage regulation @ 1% V _{in} change	± 1.2 %
Temperature coefficient	0.02 % / °C
Short circuit protection	Momentary
Voltage stability at load change 10...100%	± 10 % ± 20 % @ 3.3 V output
EMC	
EME	EN 55022 Class A
ESD	IEC 61000-4-2 / A
RS	IEC 61000-4-3 / A

General	
Safety standard	IEC 60950-2001
Switching frequency	~ 70 kHz
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 95%, non-condensing
Cooling	Free-air convection
Physical	
Dimensions	SIL 19.50 x 6.00 x 9.50 mm
Weight	2.8 g
Case material	non-conductive black plastic (UL94V-0 rated)
Capacitive Load:	
Single Output	220 µF, max.
Dual Output	100 µF, max.
Pin soldering temperature 1.5mm distance from body	260°C for 10sec

Output voltage at load change

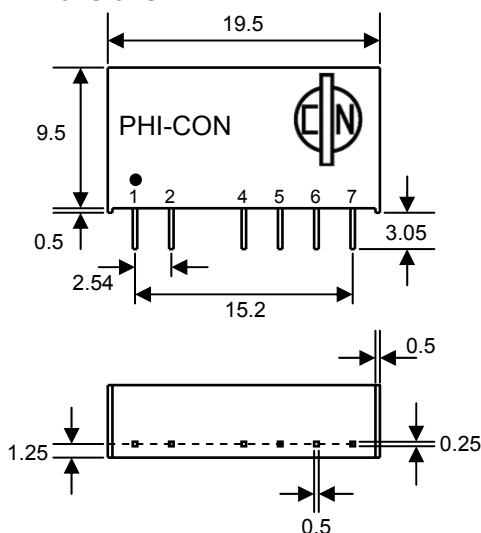


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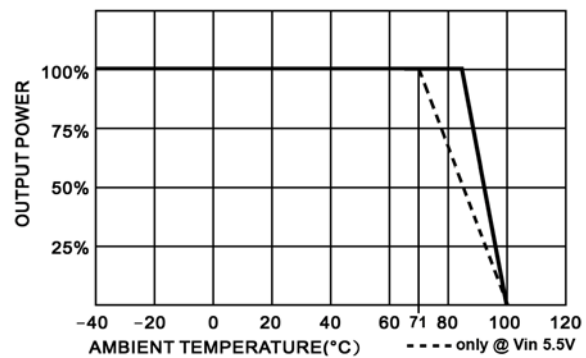


1. Ripple & Noise measured with a 1µF ceramic capacitor on output.
2. Tested by minimal V_{in} and constant resistive full load.
3. Exceeding the absolute ratings of the unit could cause damage. It is not allowed for continuous operating.
4. Operation under no-load conditions will not damage these devices, however they may not meet all listed specifications.
5. Input filter components (2.2µF and 18µH) are used to help meet conducted emissions requirement for the module. These components should be mounted as close as possible to the module; and all leads should be minimized to decrease radiated noise.

Dimensions



Derating Curve



All dimensions in mm
Tolerances:
 Case ± 0.5
 Pin pitch ± 0.35
 Pin diameter ± 0.05

Pin connections

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

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.

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