



PHI-CON

3.5W DC-DC Converter P3L-Series

- 5 kV highest reinforced isolation
- Regulated output
- 24 Pin DIL package
- Continuous short circuit protection
- -40...85°C Operation temperature range
- Metal case optional



Model selection guide

Typ	Input voltage range [V _{DC}]	Input current		Output voltage [V _{DC}]	Output current [mA]	Efficiency typ. [%]	Ripple and noise [mV]	Capacitor Load [μF]
		no load [mA]	full load [mA]					
P3L053R3S	4...6	70	635	3.3	700	55	75	470
P3L0505S	4...6	85	910	5.0	700	65	75	470
P3L0512S	4...6	95	865	12.0	290	71	85	220
P3L0515S	4...6	115	895	15.0	235	71	75	220
P3L123R3S	9.6...14.4	30	260	3.3	700	58	75	470
P3L1205S	9.6...14.4	35	370	5.0	700	65	79	470
P3L1212S	9.6...14.4	50	365	12.0	290	71	80	220
P3L1215S	9.6...14.4	60	365	15.0	235	73	80	220

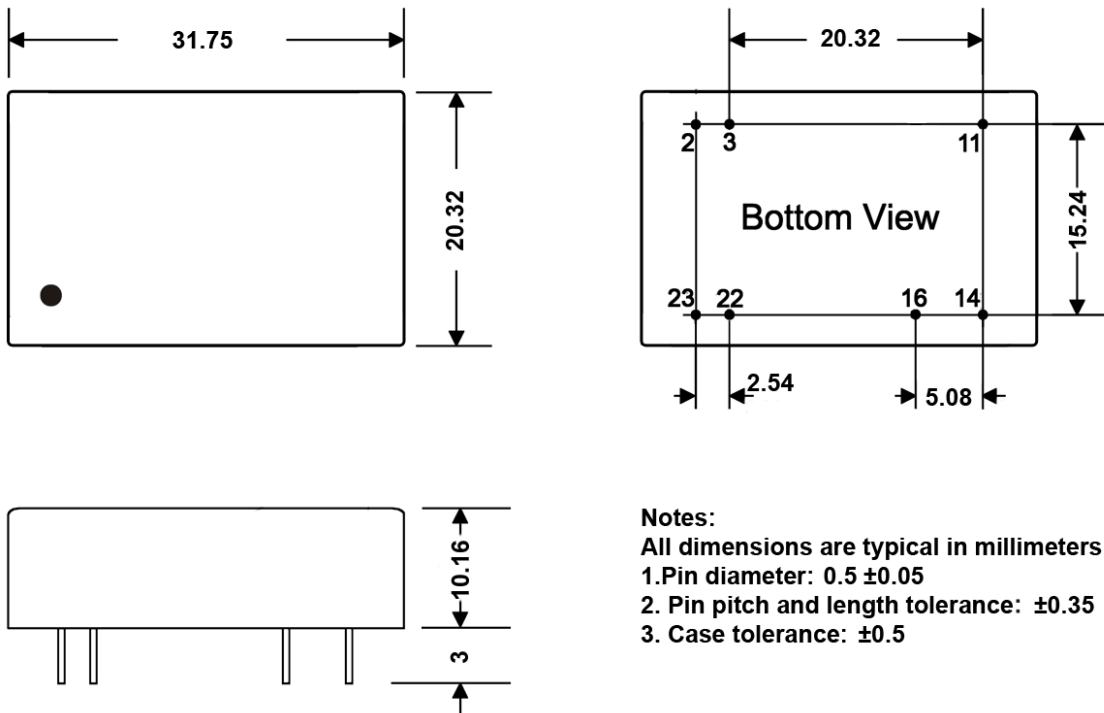
Specification

Input	
Voltage range	± 20 %
Filter	Capacitors
reflected input ripple current, with additional series L12 μH	35 mA p-p
Start up time @ resistive output load	70 ms
Isolation:	
Rated voltage	5000 V _{AC}
Resistance	10 ⁹ Ω
Capacitance	50 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	± 0.2%, max.
Load voltage regulation @ load change between 10 and 100%	± 0.5%, max.
Transient recovery time	250 μs @ 25% load steps
Transient response deviation	± 3 %
Temperature coefficient	± 0.02% / °C

General	
Switching frequency typ.	570 kHz
Safety Standard	IEC 60950-1
Reliability calculated MTBF @ 25°C (MIL-HDBK-217 F)	1.12 Mhrs
Environmental	
Operating ambient temperature	-40 °C to +85 °C
Case temperature	100 °C, max.
Storage temperature	-55 °C ... +125 °C
Derating	None required
Humidity	Up to 95%, non-condensing
Cooling	Free-air convection
Physical	
Dimensions	31.75 x 20.32 x 10.16 mm
Weight	12.5 g plastic case 15 g metal Suffix "M"
Case- and base- material	Standard, non-conductive black plastic (UL94V-0 rated)
Potting material	Epoxy (UL94V-0 rated)
Absolute maximum ratings	
Max. Input voltage < 100ms	
Vin 5 types	0 ~ 7 V
Vin 12 types	0 ~ 15 V
Pin soldering temperature 1.5mm distance from body	260°C for 10sec

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Dimensions



Notes:

All dimensions are typical in millimeters

1. Pin diameter: 0.5 ± 0.05

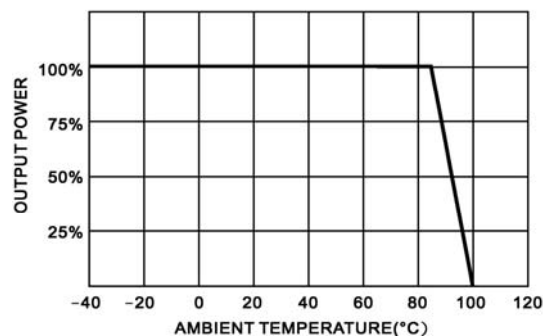
2. Pin pitch and length tolerance: ± 0.35

3. Case tolerance: ± 0.5

Pin connections

Pin	
2	-V Input
3	-V Input
11	NC
14	+V Output
16	-V Output
22	+V Input
23	+V Input

Derating Curve



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