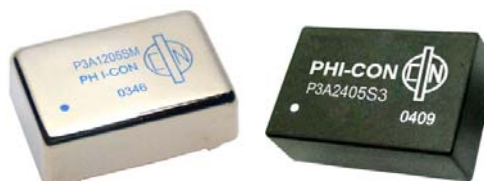


PHI-CON

3W DC-DC Converter P3A-Series

- Regulated 24 Pin DIL Package
- Low ripple and noise
- Up to 3000 V_{DC} isolation
- MTBF > 3 MHours
- Continuous short circuit protection
- -40...85°C Operation temperature range
- Metal case optional



Model selection guide

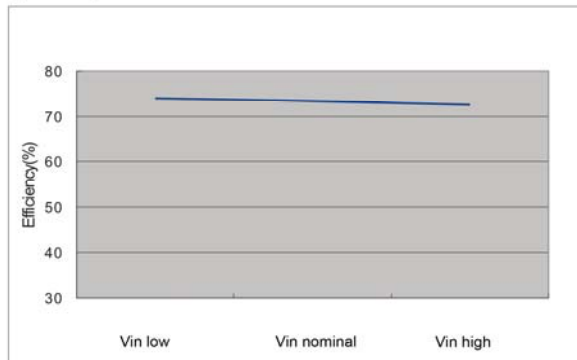
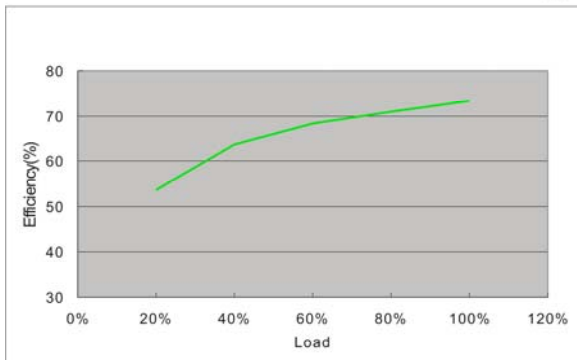
Typ	Input nominal voltage [V _{DC}]	Input current		Output voltage [V _{DC}]	Output current [mA]	Efficiency typ. [%]	Capacitor Load [μF]
		no load [mA]	full load [mA]				
Single output							
P3A053R3S	4.5...5.5	120	720	3.3	600	55	470
P3A0505S	4.5...5.5	120	923	5.0	600	65	470
P3A0509S	4.5...5.5	120	882	9.0	333	68	470
P3A0512S	4.5...5.5	120	845	12.0	250	71	470
P3A0515S	4.5...5.5	120	845	15.0	200	71	470
P3A0524S	4.5...5.5	120	937	24.0	125	64	470
P3A123R3S	10.8...13.2	50	284	3.3	600	58	470
P3A1205S	10.8...13.2	50	384	5.0	600	65	470
P3A1209S	10.8...13.2	50	357	9.0	333	70	470
P3A1212S	10.8...13.2	50	352	12.0	250	71	470
P3A1215S	10.8...13.2	50	342	15.0	200	73	470
P3A1224S	10.8...13.2	50	367	24.0	125	68	470
P3A243R3S	21.6...26.4	25	142	3.3	600	58	470
P3A2405S	21.6...26.4	25	192	5.0	600	65	470
P3A2409S	21.6...26.4	25	181	9.0	333	69	470
P3A2412S	21.6...26.4	25	173	12.0	250	72	470
P3A2415S	21.6...26.4	25	173	15.0	200	72	470
P3A2424S	21.6...26.4	25	178	24.0	125	70	470
Dual output							
P3A053R3D	4.5...5.5	30	825	±3.3	±400	64	2 x 1000
P3A0505D	4.5...5.5	30	909	±5.0	±300	66	2 x 1000
P3A0509D	4.5...5.5	40	882	±9.0	±167	68	2 x 470
P3A0512D	4.5...5.5	40	857	±12.0	±125	70	2 x 470
P3A0515D	4.5...5.5	40	857	±15.0	±100	70	2 x 470
P3A0524D	4.5...5.5	60	869	±24.0	±63	69	2 x 220
P3A123R3D	10.8...13.2	15	326	±3.3	±400	68	2 x 1000
P3A1205D	10.8...13.2	15	333	±5.0	±300	75	2 x 1000
P3A1209D	10.8...13.2	25	320	±9.0	±167	78	2 x 470
P3A1212D	10.8...13.2	25	312	±12.0	±125	80	2 x 470
P3A1215D	10.8...13.2	25	320	±15.0	±100	78	2 x 470
P3A1224D	10.8...13.2	25	328	±24.0	±63	76	2 x 220
P3A243R3D	21.6...26.4	15	157	±3.3	±400	70	2 x 1000
P3A2405D	21.6...26.4	15	162	±5.0	±300	77	2 x 1000
P3A2409D	21.6...26.4	15	160	±9.0	±167	78	2 x 470
P3A2412D	21.6...26.4	15	156	±12.0	±125	80	2 x 470
P3A2415D	21.6...26.4	15	160	±15.0	±100	78	2 x 470
P3A2424D	21.6...26.4	25	164	±24.0	±63	76	2 x 220

Suffix: "H" for 3kV isolation voltage

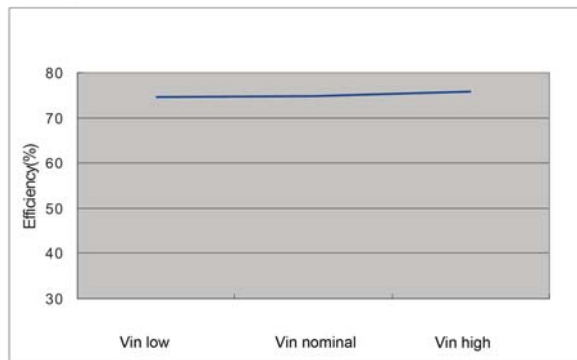
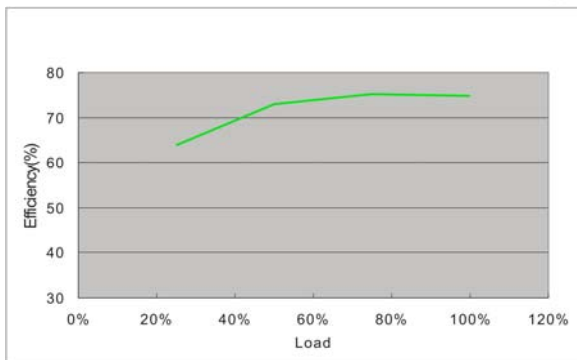
3W DC-DC Converter P3A-Series

Efficiency

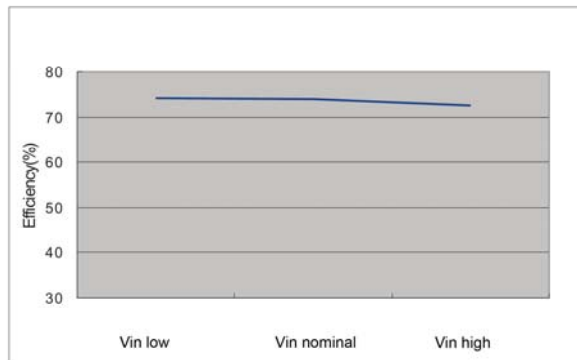
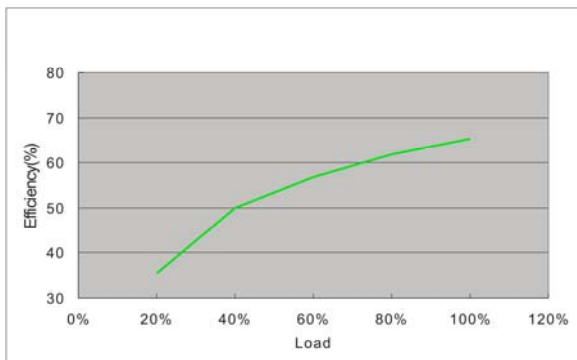
Vin 5V types, single output



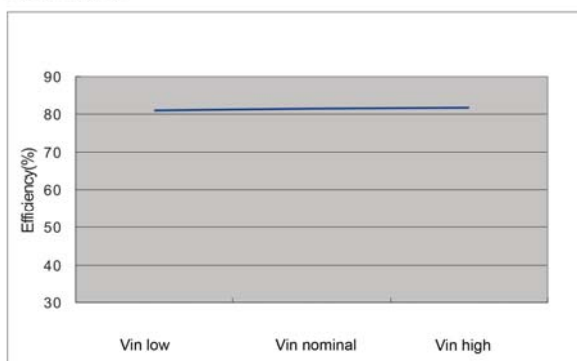
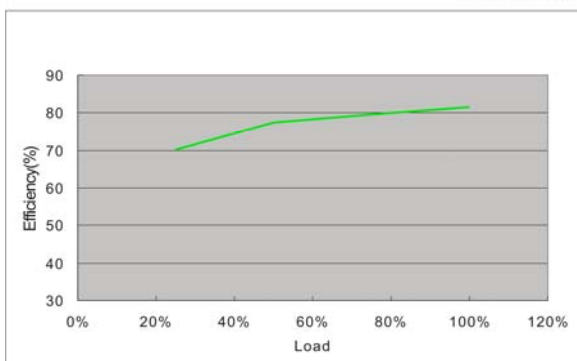
Vin 5V types, dual output



Vin 24V types, single output



Vin 24V types, dual output



3W DC-DC Converter P3A-Series

Specifications

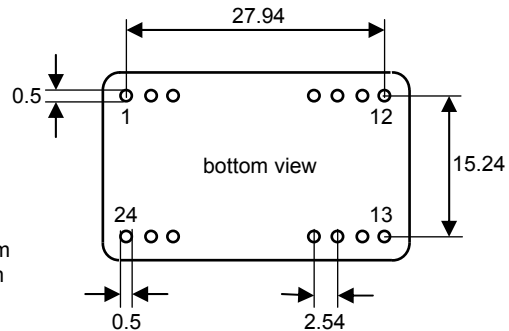
Input	
Voltage range	± 10%
Filter	Pi Network
Isolation:	
Rated voltage	1000 V _{DC} , Standard see table note
Resistance	10 ⁹ Ω
Capacitance	60 pF, typ.
Output	
Voltage accuracy	± 2%, max.
Ripple and noise (at 20 MHz BW)	75 mVp-p, max.
Short circuit protection	Continuous
Short circuit restart	Automatic
Line voltage regulation	± 0.5%, max.
Load voltage regulation	± 0.5%, max.
Temperature coefficient	± 0.02% / °C
EMC specifications	
Conducted emissions	EN55022 class A
Radiated emissions	EN55022 class A
ESD	IEC61000-4-2 perf. criteria B
RS	IEC61000-4-3 perf. criteria A
EFT	IEC61000-4-4 perf. criteria B
Surge	IEC61000-4-5 perf. criteria B
CS	IEC61000-4-6 perf. criteria A
PFMF	IEC61000-4-8 perf. criteria A

General	
Switching frequency typ.	single output 40 kHz dual output 250 kHz
Safety Standard	IEC 60950-1:2001
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)
Absolute maximum ratings	
Max. Input voltage < 100ms	
Vin 5 types	0 ~ 7 V
Vin 12 types	0 ~ 15 V
Vin 24 types	0 ~ 28 V
Pin soldering temperature 1.5mm distance from body	260°C for 10sec

Dimensions



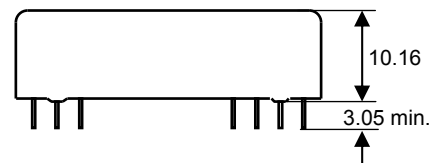
All dimensions in mm
Tolerance ±0.25 mm



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

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: 02.11 f



Derating Curve

