



PHI-CON

8 W DC-DC Converter P8A-Series

- Wide 2:1 input range
- 1500 V_{DC} isolation
- MTBF > 910000 h
- Continuous short circuit protection
- Over current protection



Model guide

Type	Input voltage		Input current		Output voltage [V _{DC}] nom.	Output current		Efficiency [%] typ.	Capacitor load (see 1) [mA] max.
	Nominal [V _{DC}]	Range [V _{DC}]	No load [mA] max.	Full load [mA] typ.		[mA] min.	[mA] max.		
Single output									
P8A123R3S	12	9...18	20	690	3.3	0	2000	80	3300
P8A1205S	12	9...18	20	760	5.0	0	1500	82	2200
P8A127R2S	12	9...18	20	800	7.2	0	1111	83	1000
P8A1209S	12	9...18	20	795	9.0	0	888	84	470
P8A1212S	12	9...18	20	785	12.0	0	665	85	470
P8A1215S	12	9...18	20	800	15.0	0	535	83	220
P8A243R3S	24	18...36	15	345	3.3	0	2000	80	3300
P8A2405S	24	18...36	15	380	5.0	0	1500	82	2200
P8A247R2S	24	18...36	15	400	7.2	0	1111	84	1000
P8A2409S	24	18...36	15	390	9.0	0	888	86	470
P8A2412S	24	18...36	15	390	12.0	0	665	85	470
P8A2415S	24	18...36	15	400	15.0	0	535	84	220
P8A483R3S	48	36...72	15	170	3.3	0	2000	80	3300
P8A4805S	48	36...72	15	190	5.0	0	1500	82	2200
P8A487R2S	48	36...72	15	200	7.2	0	1111	84	1000
P8A4809S	48	36...72	15	200	9.0	0	888	84	470
P8A4812S	48	36...72	15	200	12.0	0	665	84	470
P8A4815S	48	36...72	15	200	15.0	0	535	84	220
Dual output									
P8A1205D	12	9...18	20	815	±5.0	0	±800	82	2 x 1000
P8A127R2D	12	9...18	20	805	±7.2	0	±555	83	2 x 470
P8A1209D	12	9...18	20	800	±9.0	0	±444	84	2 x 330
P8A1212D	12	9...18	20	800	±12.0	0	±335	84	2 x 220
P8A1215D	12	9...18	20	800	±15.0	0	±265	84	2 x 100
P8A2405D	24	18...36	15	410	±5.0	0	±800	82	2 x 1000
P8A247R2D	24	18...36	15	400	±7.2	0	±555	84	2 x 470
P8A2409D	24	18...36	15	390	±9.0	0	±444	85	2 x 330
P8A2412D	24	18...36	15	400	±12.0	0	±335	83	2 x 220
P8A2415D	24	18...36	15	390	±15.0	0	±265	85	2 x 100
P8A4805D	48	36...72	15	205	±5.0	0	±800	82	2 x 1000
P8A487R2D	48	36...72	15	200	±7.2	0	±555	84	2 x 470
P8A4809D	48	36...72	15	200	±9.0	0	±444	84	2 x 330
P8A4812D	48	36...72	15	195	±12.0	0	±335	85	2 x 220
P8A4815D	48	36...72	15	195	±15.0	0	±265	85	2 x 100



PHI-CON

8 W DC-DC Converter P8A-Series

Specifications

Input	
Filter	Pi Network
Reflected input ripple current	35 mA _{p-p} (Figure 1)
Isolation:	
In / Out Rated voltage (60 s)	1500 V _{DC} , Standard
Input or output to case	1000 V _{DC}
Resistance	10 ⁹ Ω
Capacitance	1000 pF, typ.
Output	
Voltage accuracy	± 1 %
Ripple and noise (at 20 MHz BW)	75 mV _{p-p} , max.
Short circuit protection	Continuous (automatic restart)
Over current protection	150 %, typ. of max. current
Line regulation	± 0.5 %, max.
Load voltage regulation @ 0...100 % load change	± 0.5 % @ P8AxxxS ± 1 % @ P8AxxxD
Dual output cross deviation @ 75 % load difference	5 %, max.
Temperature coefficient	± 0.02 % / °C
General	
Switching frequency	330 kHz, typ.
Safety standards	IEC, EN, UL, cUL60950-1 IEC, EN, UL, cUL62368-1
Reliability calc. MTBF (MIL-HDBK-217F)	910000 h @ Ta 25 °C

EMC specifications	
Radiated emissions	EN55032 Class A
Only metal case version	
Conducted emissions	EN55032 Class A (see Fig. 3)
ESD	IEC61000-4-2 perf. criteria A
RS	IEC61000-4-3 perf. criteria A
EFT (see Fig. 3)	IEC61000-4-4 perf. criteria A
Surge (see Fig. 3)	IEC61000-4-5 perf. criteria A
CS	IEC61000-4-6 perf. criteria A
PFMF	IEC61000-4-8 perf. criteria A
Environmental	
Operating ambient temperature	-40 ... 85 °C
Case temperature	100 °C, max.
Storage temperature	-40 ... 125 °C
Derating	See SOA diagram
Humidity	95 % max., non condensing
Cooling	Free air convection
Physical	
Weight	17 g
Potting material	Epoxy (UL94V-0 rated)
Case material	Nickel coated copper
Absolute maximum ratings	
Input voltage < 100 ms	
P8A12xxx	25 V _{DC}
P8A24xxx	40 V _{DC}
P8A48xxx	80 V _{DC}
Lead soldering Temperature	260 °C for 10 s, distance from package 1.5 mm

1. Specified by nominal in voltage and constant resistive load.
2. Parallel operation of DC/DC-Converter outputs is not recommendet.
3. The P8A-series is not usable in IGBT and MOSFET driver applications.

Figure 1 Measure circuit input reflected ripple current

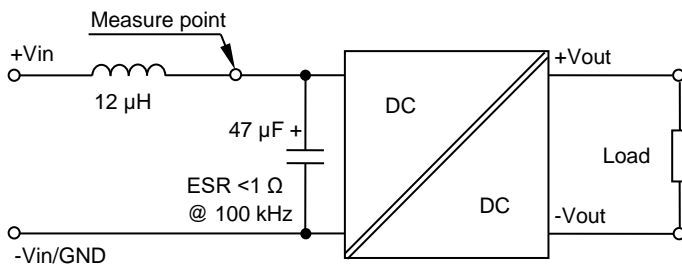
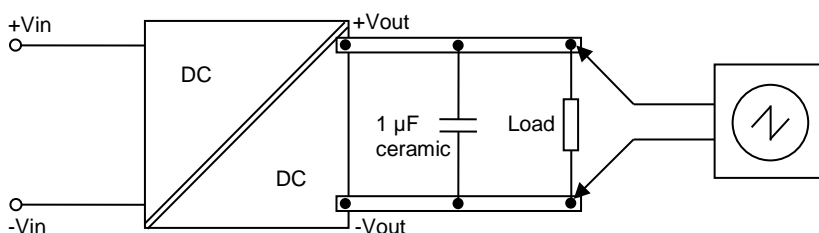
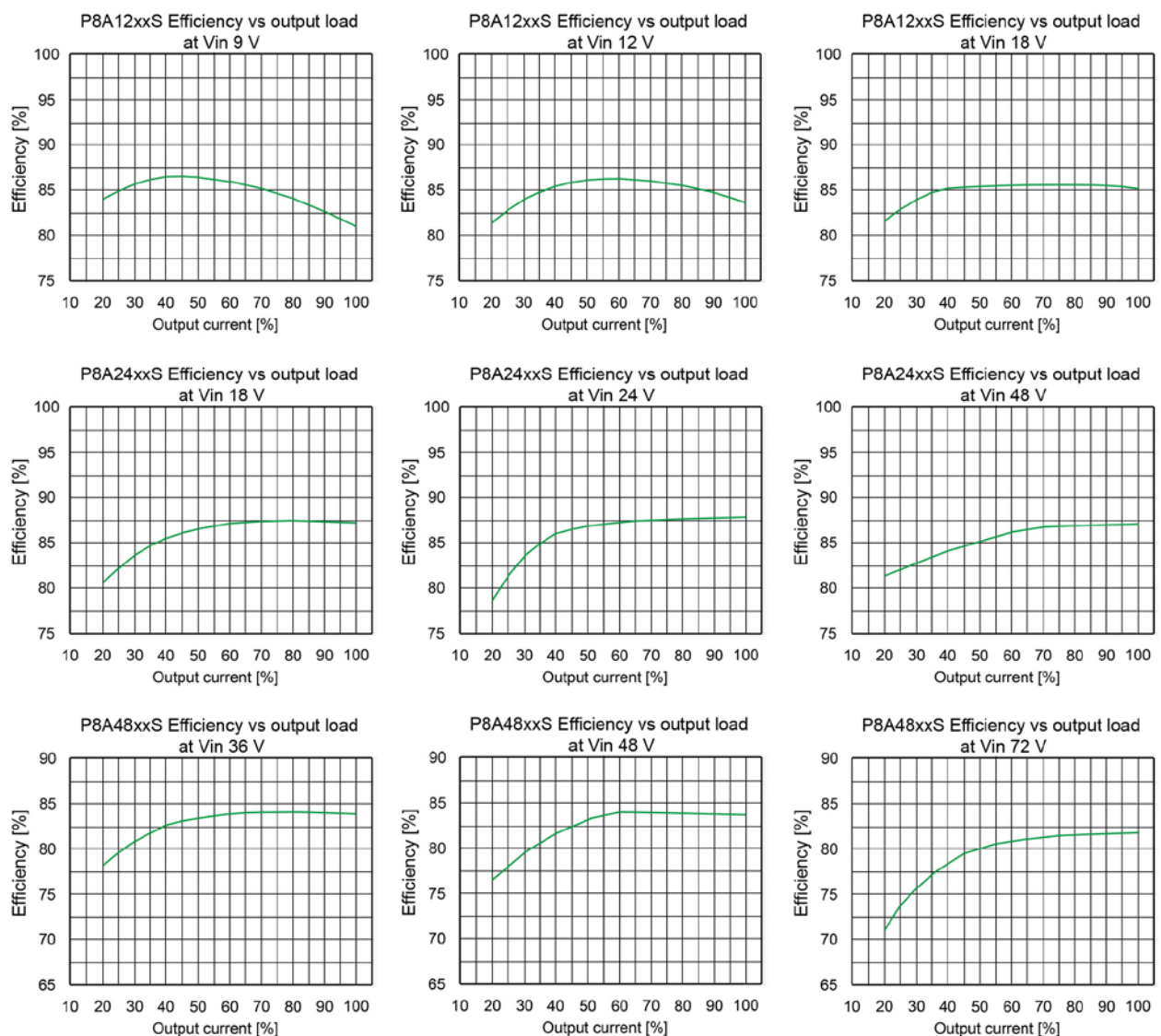
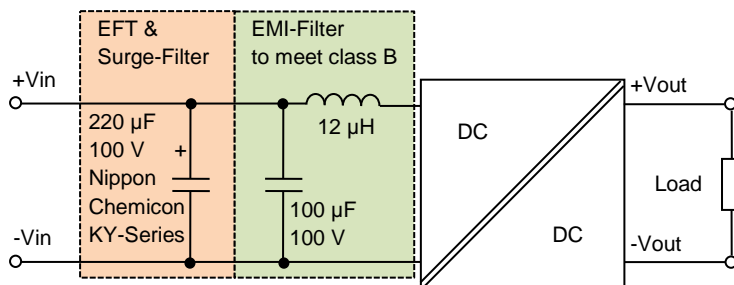


Figure 2 Measure circuit output ripple & noise voltage



8 W DC-DC Converter P8A-Series

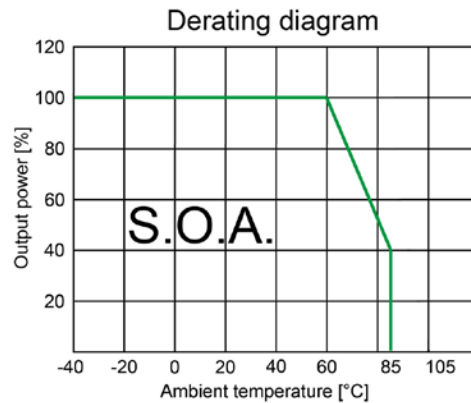
Figure 3
Application circuit to meet EFT IEC61000-4-4 class A, Surge IEC61000-4-5 class A and EMI conducted emission EN55032 Class A



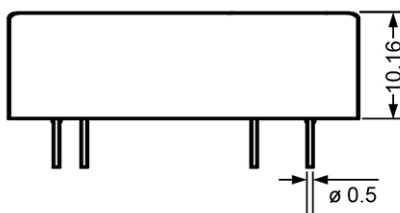


PHI-CON

8 W DC-DC Converter P8A-Series

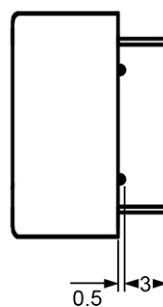
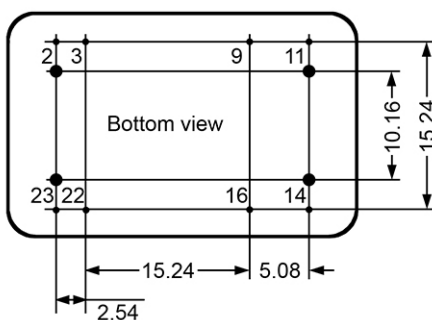
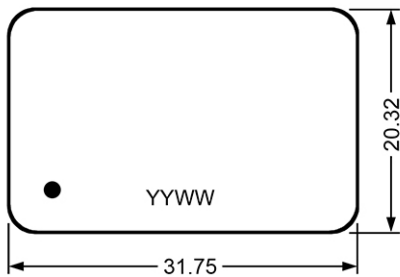


Dimensions



All units in mm

1. Pin diameter tolerance ± 0.05 mm
2. Pin pitch tolerance ± 0.35 mm
3. Case tolerance ± 0.5 mm



Pin assignment		
Pin	Single	Dual
2	-V Input	-V Input
3	-V Input	-V Input
9	No Pin	Common
11	Not Connected.	-V Output
14	+V Output	+V Output
16	-V Output	Common
22	+V Input	+V Input
23	+V Input	+V Input

PHI-CON is a trademark of HY-LINE Holding GmbH.

Only for professional use by professionals! Not for resale or distribution to the general public in any way! Read the instructions carefully before using!

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: 20171108 f