8 W DC-DC Converter P8A-Series

PHI-CON

- 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	Output current		Efficiency	Capacitor load (see 1)
	Nominal [V_{DC}]	Range [V_{DC}]	No load [mA] max.	Full load [mA] typ.	[V_{DC}] nom.	[mA] min.	[mA] max.	[%] typ.	[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

HY-LINE® POWER COMPONENTS

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Specifications

Input	
Filter	Pi Network
Reflected input ripple current	35 mAp-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 mVp-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 % @ P8AxxxxS ± 1 % @ P8AxxxxD
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 Only metal case version	EN55032 Class A
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

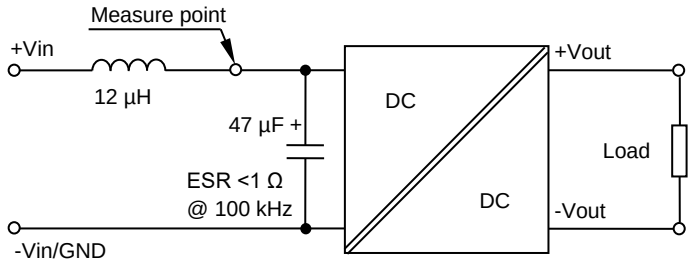

Figure 2 Measure circuit output ripple & noise voltage

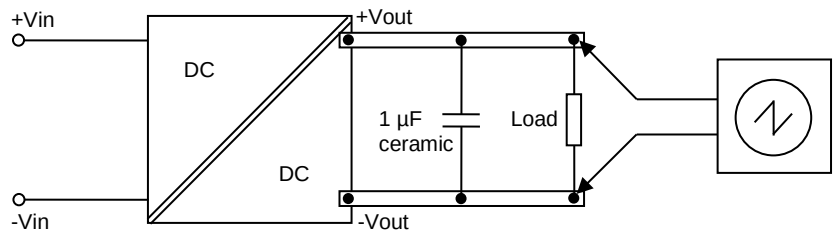

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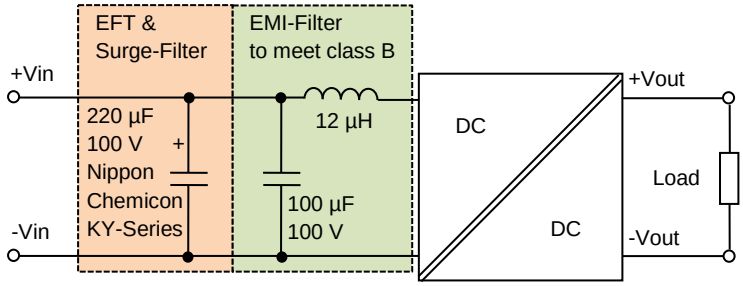
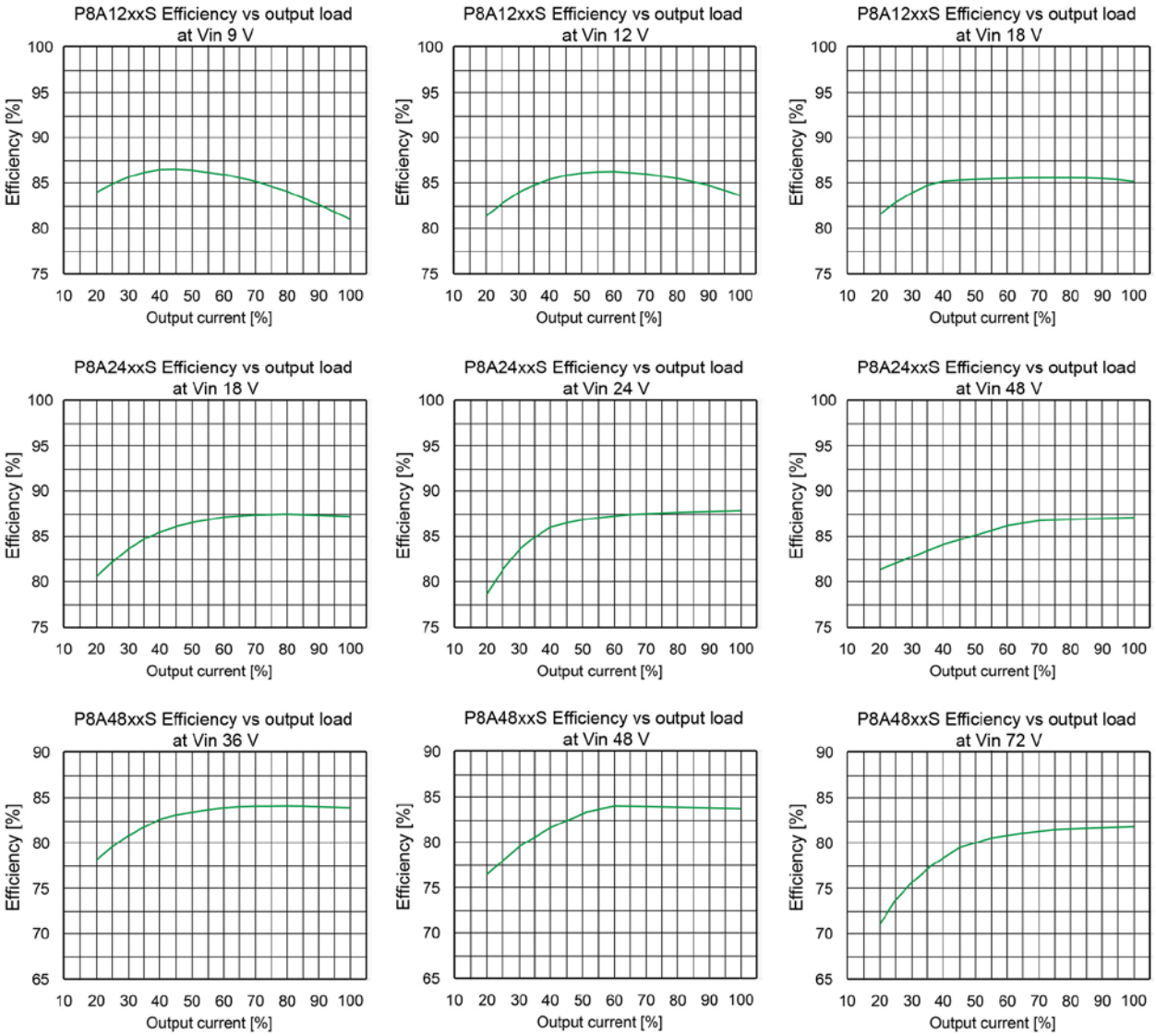
Figure 3
Application circuit to meet EFT IEC61000-4-4 class A, Surge IEC61000-4-5 class A and EMI conducted emission EN55032 Class A





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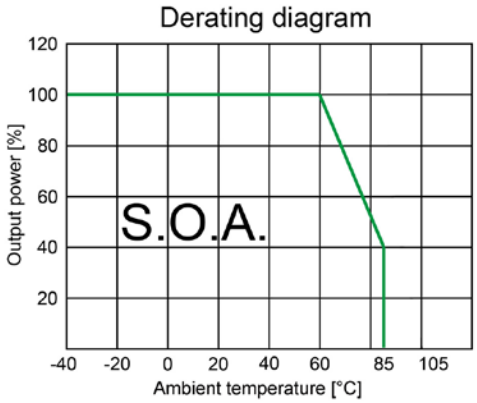
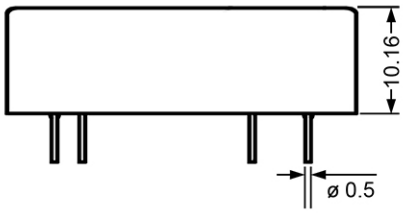
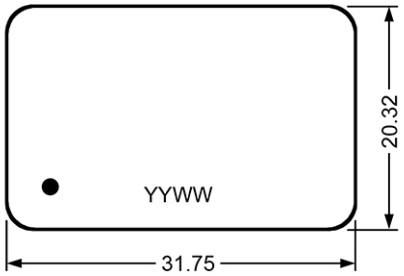


Dimensions

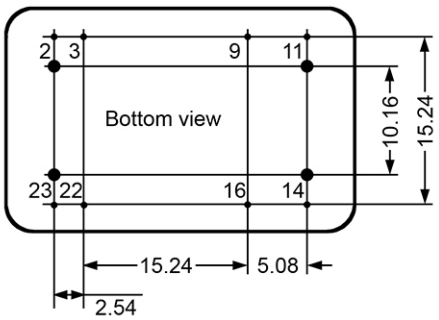


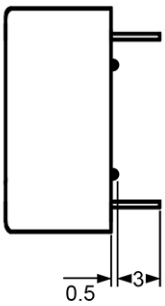
All units in mm

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





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