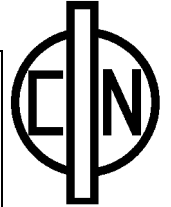


30W DC-DC Converter P30A-Series



PHI-CON

- Wide 2:1 input range
- 1500 V_{DC} isolation
- Continuous short circuit protection
- Standard package 2" x 2" x 0.4"
- MTBF > 1,12 Mhrs
- -40...+85°C operating temperature range



Model guide

Type	Input voltage range [V _{DC}]	Input current		Output voltage [V _{DC}]	Output current [mA]	Efficiency typ. [%]	Capacitive load max. [μF]
		no load [mA]	full load [mA]				
Single output							
P30A1205S	9...18	30	3048	5.0	6000	82	3300
P30A127R2S	9...18	30	3012	7.2	4166	83	3300
P30A1209S	9...18	30	2976	9.0	3333	84	2200
P30A1212S	9...18	30	2976	12.0	2500	84	1000
P30A1215S	9...18	30	2941	15.0	2000	85	1000
P30A1218S	9...18	30	2941	18.0	1666	85	680
P30A1224S	9...18	30	2941	24.0	1250	85	680
P30A243R3S	18...36	25	1031	3.3	6000	80	3300
P30A2405S	18...36	25	1488	5.0	6000	84	3300
P30A247R2S	18...36	25	1488	7.2	4166	84	3300
P30A2409S	18...36	25	1436	9.0	3333	87	2200
P30A2412S	18...36	25	1436	12.0	2500	87	1000
P30A2415S	18...36	35	1436	15.0	2000	87	1000
P30A2418S	18...36	35	1436	18.0	1666	87	680
P30A2424S	18...36	35	1436	24.0	1250	87	680
P30A483R3S	36...72	25	522	3.3	6000	79	3300
P30A4805S	36...72	25	753	5.0	6000	83	3300
P30A487R2S	36...72	25	744	7.2	4166	84	3300
P30A4809S	36...72	25	744	9.0	3333	84	2200
P30A4812S	36...72	25	726	12.0	2500	86	1000
P30A4815S	36...72	25	710	15.0	2000	88	1000
P30A4818S	36...72	25	710	18.0	1666	88	680
P30A4824S	36...72	30	710	24.0	1250	88	680
Dual output							
P30A123R3D	9...18	25	2115	±3.3	±3000	78	2 x 2200
P30A1205D	9...18	25	3048	±5.0	±3000	82	2 x 2200
P30A127R2D	9...18	25	3012	±7.2	±2083	83	2 x 1000
P30A1209D	9...18	25	2976	±9.0	±1666	84	2 x 1000
P30A1212D	9...18	25	2976	±12.0	±1250	84	2 x 1000
P30A1215D	9...18	35	2941	±15.0	±1000	85	2 x 470
P30A1218D	9...18	35	2941	±18.0	±833	85	2 x 330
P30A1224D	9...18	35	2941	±24.0	±625	85	2 x 220
P30A243R3D	18...36	25	1057	±3.3	±3000	78	2 x 2200
P30A2405D	18...36	25	1488	±5.0	±3000	84	2 x 2200
P30A247R2D	18...36	25	1488	±7.2	±2083	84	2 x 1000
P30A2409D	18...36	25	1470	±9.0	±1666	85	2 x 1000
P30A2412D	18...36	25	1470	±12.0	±1250	85	2 x 1000
P30A2415D	18...36	25	1436	±15.0	±1000	87	2 x 470
P30A2418D	18...36	25	1436	±18.0	±833	87	2 x 330
P30A2424D	18...36	30	1436	±24.0	±625	87	2 x 220
P30A483R3D	36...72	20	515	±3.3	±3000	80	2 x 2200
P30A4805D	36...72	20	735	±5.0	±3000	85	2 x 2200
P30A487R2D	36...72	20	735	±7.2	±2083	85	2 x 1000
P30A4809D	36...72	20	735	±9.0	±1666	85	2 x 1000
P30A4812D	36...72	20	718	±12.0	±1250	87	2 x 1000
P30A4815D	36...72	20	710	±15.0	±1000	88	2 x 470
P30A4818D	36...72	20	710	±18.0	±833	88	2 x 330
P30A4824D	36...72	20	710	±24.0	±625	88	2 x 220

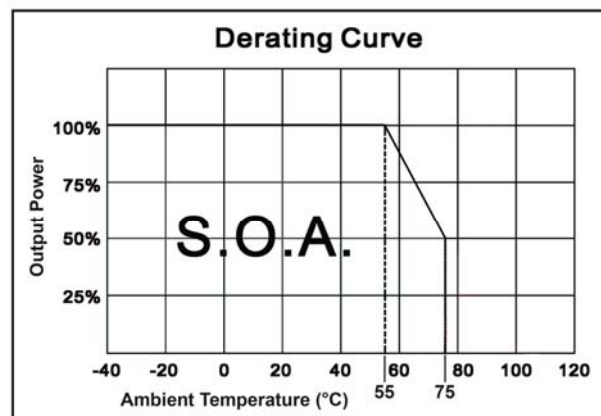
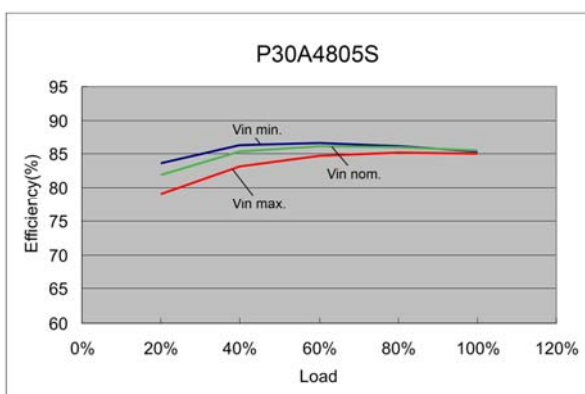
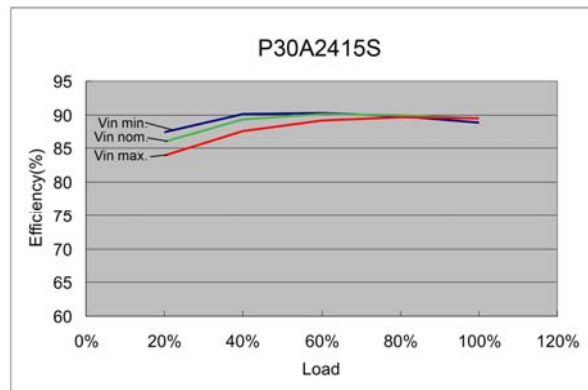
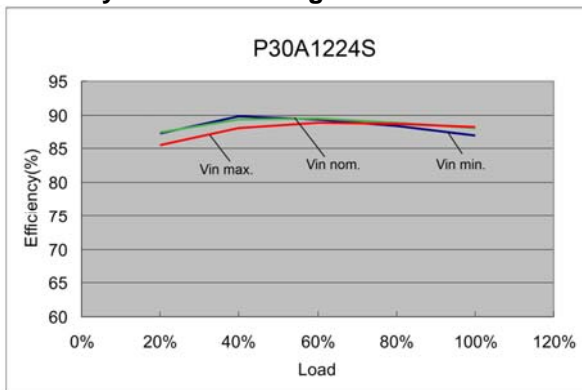
30W DC-DC Converter P30A-Series

Specifications

Input	
Start up time	20 mS, typ.
Filter	Capacitors
Isolation:	
Rated voltage, input to output	1500 V _{DC} , 3s tested
Rated voltage, input or output to case	1000 V _{DC}
Resistance	10 ³ Ω
Capacitance	1000 pF, typ.
Output	
Voltage accuracy	± 1 %
Voltage balance (dual outputs)	± 1 %
Ripple and noise (at 20 MHz BW)	100 mVp-p
Short circuit protection	Indefinite (Automatic recovery)
Over load protection	140 %, typ.
Short circuit restart	Automatic
Line voltage regulation	± 0.5 %
Load regulation, single outp. type	± 0.5% @ 0%...100% load
Load regulation, dual outp. type	± 0.5% @ 10%...100% load
Temperature coefficient	± 0.02% / °C

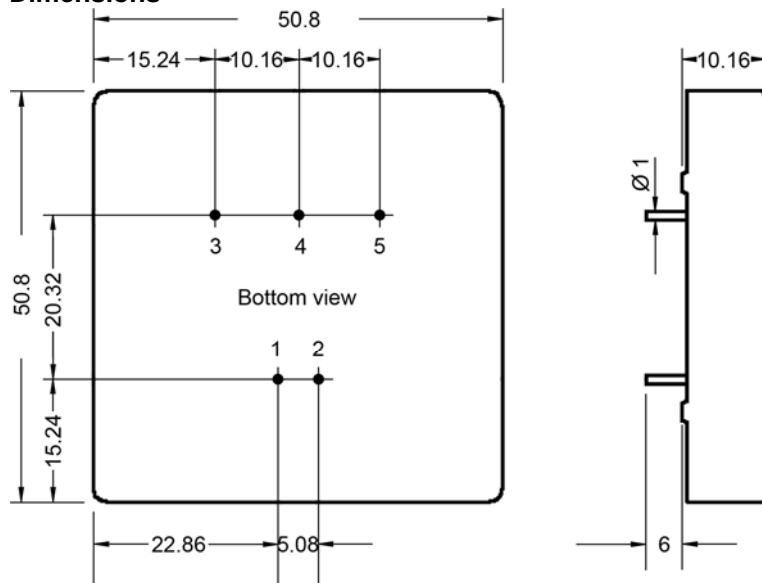
General	
Switching frequency	125 kHz, typ.
Safety standard	IEC 60950-1
Reliability Calculated MBTF	1.12 Mio. h
Environmental	
Operating ambient temperature	-40 °C to 85 °C see derating
Case temperature	100 °C, max.
Storage temperature	-40 °C to 125 °C
Derating	None required
Humidity	Up to 95%, non-condensing
Cooling	Free-air convection
Physical	
Dimensions	50.80 x 50.80 x 10.16 mm
Weight	60 g
Case material	Nickel-coated brass
Potting Material	Epoxy UL94V-0 rated
Absolute maximum ratings	
Vin 12 V models	25 V _{DC} max. for 0.1 s max.
Vin 24 V models	50 V _{DC} max. for 0.1 s max.
Vin 48 V models	100 V _{DC} max. for 0.1 s max.
Pin soldering temperature distance 1.5 mm from body	260°C for 10sec

Efficiency vs load change



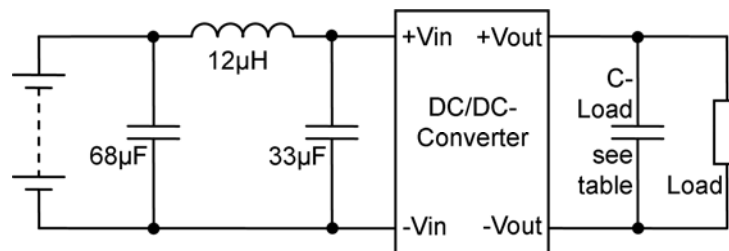
30W DC-DC Converter P30A-Series

Dimensions



Pin connections		
Pin	Single output	Dual output
1	+V input	+V input
2	-V input	-V input
3	+V output	+V output
4	Omitted	Common
5	-V output	-V output

All dimensions in mm
 Pin pitch and length tolerance: ± 0.35 mm
 Case tolerances: ± 0.5 mm



1. Ripple and Noise measured with 20 MHz bandwidth
2. Tested by minimal V_{in} and constant resistive load.
3. Measured Input reflected ripple current with a simulated source inductance of $12 \mu\text{H}$.
4. Exceeding the absolute ratings of the unit could cause damage. It is not allowed for continuous operating.
5. Operation under no-load conditions will not damage these devices, however they may not meet all listed specifications.
6. For reduce converter's ripple and noise, it is recommended to add a $4.7..100 \mu\text{F}$ ($2 \times 4.7..68 \mu\text{F}$ for dual output) capacitor on output. For EMI performance improvement, it is recommended to add a $12 \mu\text{H}$ inductor and a $10..100 \mu\text{F}$ capacitor in input end.

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