

PHI-CON

2W DC-DC Converter P2U-Series

- 8 Pin SIL
- Wide 2:1 input range
- MTBF >2.7 MHours
- 1000 V_{DC} isolation
- Up to 3000 V_{DC} isolation
- Continuous short circuit protection



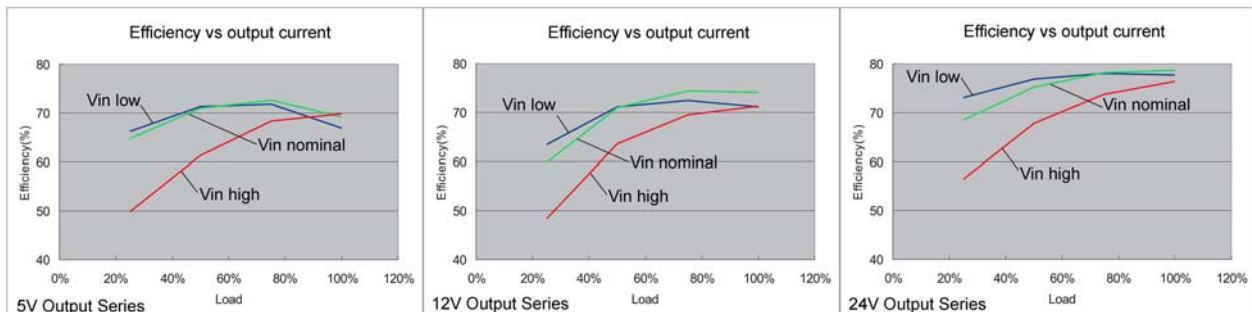
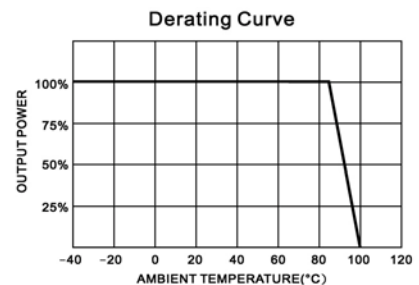
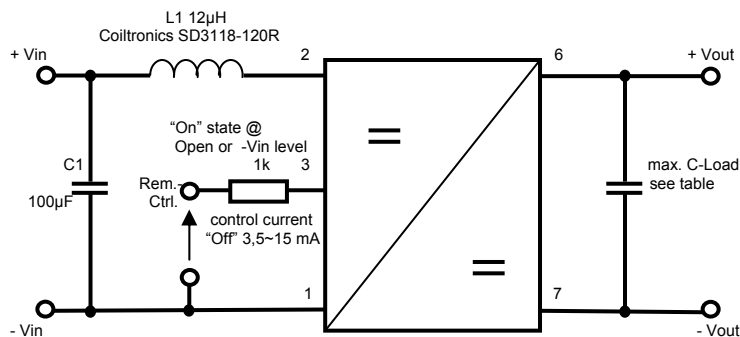
Model selection guide

Typ	Input nominal voltage [V _{DC}]	Input current no-load [mA]	Input current full-load [mA]	Output voltage [V _{DC}]	Output current [mA]	Efficiency typ. [%]	Capacitive load max. [μF]
P2U053R3	4.5...9	30	550	3.3	500	60	3300
P2U053R6	4.5...9	30	580	3.6	500	60	3300
P2U0505	4.5...9	30	606	5.0	400	66	3300
P2U057R2	4.5...9	30	597	7.2	278	67	470
P2U0509	4.5...9	30	588	9.0	222	68	470
P2U0512	4.5...9	30	571	12.0	167	70	470
P2U0515	4.5...9	30	571	15.0	133	70	470
P2U0518	4.5...9	30	571	18.0	111	70	220
P2U0524	4.5...9	30	588	24.0	83	68	220
P2U123R3	9...18	15	208	3.3	500	66	3300
P2U123R6	9...18	15	210	3.6	500	66	3300
P2U1205	9...18	15	222	5.0	400	75	3300
P2U127R2	9...18	15	222	7.2	278	75	470
P2U1209	9...18	15	222	9.0	222	75	470
P2U1212	9...18	15	216	12.0	167	77	470
P2U1215	9...18	15	216	15.0	133	77	470
P2U1218	9...18	15	216	18.0	111	77	220
P2U1224	9...18	15	222	24.0	83	75	220
P2U243R3	18...36	8	100	3.3	500	69	3300
P2U2405	18...36	8	111	5.0	400	75	3300
P2U247R2	18...36	8	110	7.2	278	76	470
P2U2409	18...36	8	108	9.0	222	77	470
P2U2412	18...36	8	104	12.0	167	80	470
P2U2415	18...36	8	104	15.0	133	80	470
P2U2418	18...36	8	104	18.0	111	80	220
P2U2424	18...36	8	108	24.0	83	77	220
P2U483R3	36...72	6	55	3.3	500	62	3300
P2U4805	36...72	6	60	5.0	400	70	3300
P2U487R2	36...72	6	59	7.2	278	71	470
P2U4809	36...72	6	58	9.0	222	72	470
P2U4812	36...72	6	55	12.0	167	76	470
P2U4815	36...72	6	55	15.0	133	76	470
P2U4818	36...72	6	56	18.0	111	75	220
P2U4824	36...72	6	56	24.0	83	74	220

Part number structure															
Output power		Series	Input voltage		Output voltage		Outputs		Isolation		Case		Remote control		
P2		T	05		3R3		S		H		M		C		
P2	2 W		05	4.5..9 V	3R3	3.3 V	blanc	single	blanc	1 kV	blanc	plastic	C	control	
			12	9..18 V	05	5 V	D	dual	H	3 kV	M	metal		Input	
			24	18..36 V	7R2	7.2 V	Z	other pin assignment			M only for 1kV				
			48	36..72 V	09	9 V									
					12	12 V									
					15	15 V									
					18	18 V									
					24	24 V									

2W DC-DC Converter P2U-Series

Typ	Input nominal voltage [V _{DC}]	Input current no-load [mA]	Input current full-load [mA]	Output voltage [V _{DC}]	Output current [mA]	Efficiency typ. [%]	Capacitive load max. [μF]
P2U053R3D	4,5...9	30	471	±3.3	±250	70	2 x 1000
P2U0505D	4,5...9	30	571	±5.0	±200	70	2 x 1000
P2U0509D	4,5...9	30	540	±9.0	±111	74	2 x 220
P2U0512D	4,5...9	30	533	±12.0	±83	75	2 x 220
P2U0515D	4,5...9	30	533	±15.0	±67	75	2 x 220
P2U0524D	4,5...9	30	563	±24.0	±42	71	2 x 100
P2U123R3D	9...18	15	188	±3.3	±250	73	2 x 1000
P2U123R6D	9...18	15	198	±3.6	±250	73	2 x 1000
P2U1205D	9...18	15	222	±5.0	±200	75	2 x 1000
P2U1209D	9...18	15	210	±9.0	±111	79	2 x 220
P2U1212D	9...18	15	208	±12.0	±83	80	2 x 220
P2U1215D	9...18	15	210	±15.0	±67	79	2 x 220
P2U1224D	9...18	15	219	±24.0	±42	76	2 x 100
P2U243R3D	18...36	8	94	±3.3	±250	73	2 x 1000
P2U2405D	18...36	8	106	±5.0	±200	78	2 x 1000
P2U2409D	18...36	8	105	±9.0	±111	79	2 x 220
P2U2412D	18...36	8	104	±12.0	±83	80	2 x 220
P2U2415D	18...36	8	104	±15.0	±67	80	2 x 220
P2U2424D	18...36	8	106	±24.0	±42	78	2 x 100
P2U483R3D	36...72	6	47	±3.3	±250	73	2 x 1000
P2U4805D	36...72	6	56	±5.0	±200	74	2 x 1000
P2U4809D	36...72	6	53	±9.0	±111	79	2 x 220
P2U4812D	36...72	6	53	±12.0	±83	79	2 x 220
P2U4815D	36...72	6	52	±15.0	±67	80	2 x 220
P2U4824D	36...72	6	55	±24.0	±42	75	2 x 100



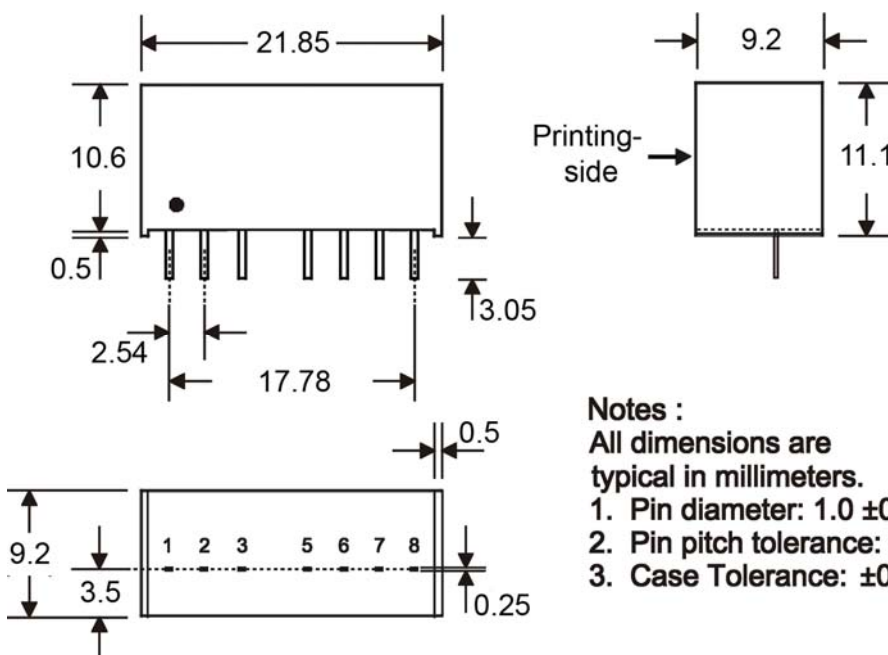
2W DC-DC Converter P2U-Series

Specifications

Input	
Voltage range	5V _{DC} , 4.5...9 V _{DC} 12V _{DC} , 9...18 V _{DC} 24V _{DC} , 18...36 V _{DC} 48V _{DC} , 36...72 V _{DC}
Filter	Capacitors
Isolation:	
Rated voltage	1000 V _{DC} , standard 3000 V _{DC} suffix H
Pin to case	1000 V _{DC}
Resistance	10 ⁹ Ω
Capacitance	60 pF, typ.
Output	
Voltage accuracy	± 2%, max.
Ripple and noise (at 20 MHz BW)	80 mVp-p, max.
Short circuit protection	Continuous
Short circuit restart	Automatic
Current limiting	110%
Line voltage regulation	± 0.5%, max.
Load regulation @ 25% to 100% loading	± 1%, max.
Temperature coefficient	± 0.02% / °C

General	
Switching frequency	100...650 kHz
Safety Standard in accordance with	IEC60950-1:2001
Environmental	
Operating temperatur (ambient)	-40 °C to +85 °C
Case temperature	100 °C, max.
Storage temperature	-40 °C ... +125 °C
Derating	None required
Humidity	Up to 95%, non-condensing
Cooling	Free-air convection
Physical	
Dimensions SIP8	21.9 x 11,2 x 9.2 mm
Weight	4.5 g plastic 6.5 g metal case
Case material	non-conductive black plastic, UL94-V0 nickel coated copper
Potting material	Epoxy UL94-V0
Soldering Temperature	
1.5 mm from package 10s	260°C

Dimensions



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: 08.09 f

Notes :

All dimensions are typical in millimeters.

1. Pin diameter: 1.0 ±0.05
2. Pin pitch tolerance: ±0.35
3. Case Tolerance: ±0.5

Pin connections

Pin	Single	Single (C)	Dual (D)	Dual (DC)	Dual (Z)	Dual (ZC)
1	-V Input	-V Input	-V Input	-V Input	-V Input	-V Input
2	+V Input	+V Input	+V Input	+V Input	+V Input	+V Input
3	No pin	Rem. Ctrl. on/off	N.C.	Rem. Ctrl. on/off	N.C.	Rem. Ctrl. on/off
5	No pin	N.C.	N.C.	N.C.	N.C.	N.C.
6	+V Output	+V Output	+V Output	+V Output	+V Output	+V Output
7	-V Output	-V Output	-V Output	-V Output	common	common
8	N.C.	N.C.	common	common	-V Output	-V Output