



PHI-CON

20W DC-DC Converter P20Y-Series

- 20 W Output Power
- 4:1 Wide Input Voltage Range
- Adjustable Output Voltage
- Remote Control Input
- International Safety Standard
- Six-Sided Continuous Shield
- High Efficiency up to 84%
- Standard 2" x 1.6" x 0.4" Package
- Fixed Switching Frequency



Model selection guide

Typ	Input nominal voltage [V _{DC}]	Input current full-load [mA]	Output voltage [V _{DC}]	Output current [mA]	Efficiency typ. [%]	Capacitor load max. [uF]	Output ripple @ bandwidth 20mHz [mV _{p-p}]
Single output							
P20Y24S33W	9-36	764	3.3	4000	76	13000	75
P20Y24S05W	9-36	1111	5	4000	79	6800	75
P20Y24S12W	9-36	1082	12	1670	81	2200	75
P20Y24S15W	9-36	1082	15	1330	81	755	75
P20Y48S33W	18-75	377	3.3	4000	77	13000	75
P20Y48S05W	18-75	548	5	4000	80	6800	75
P20Y48S12W	18-75	541	12	1670	81	2200	75
P20Y48S15W	18-75	541	15	1330	81	755	75
Dual output							
P20Y24D05W	9-36	1111	±5	±2000	79	2 x 3400	100
P20Y24D12W	9-36	1082	±12	±833	81	2 x 680	100
P20Y24D15W	9-36	1068	±15	±666	82	2 x 450	100
P20Y48D05W	18-75	556	±5	±2000	79	2 x 3400	100
P20Y48D12W	18-75	527	±12	±833	83	2 x 680	100
P20Y48D15W	18-75	521	±15	±666	84	2 x 450	100

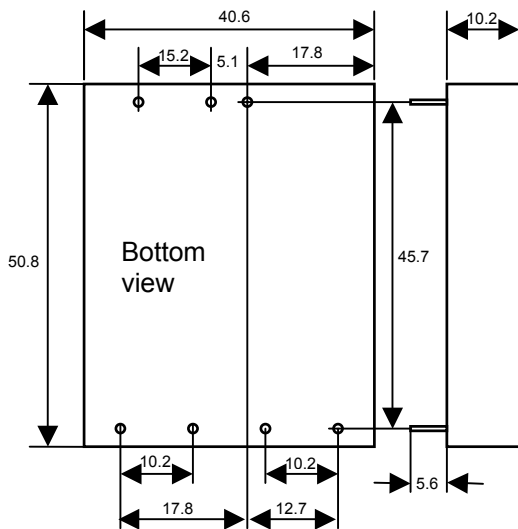
20W DC-DC Converter P20Y-Series

Specifications

Input	
Voltage range	P20Y: 9..36, 18..75V _{DC}
Filter	π Pi type
Input surge voltage for 100mS max.	24V type : 50 V _{DC} max. 48V type : 100 V _{DC} max.
Start up time	20mS typ
Remote CTRL	
Remote CTRL input current	On: open or 3.5..12 V _{DC} Off : 0...1.2 V _{DC}
Remote CTRL input reference	-Input
Output	
Power	20W max
Voltage accuracy	Single & Dual ±2% Auxiliary ±5%
Voltage adjustability	±10%
Short circuit protection	Hiccup, automatics recovery
Over voltage protection zener diode clamp	3.3V output: 3.9V, 5V output: 6.2V, 12V output: 15V, 15V output: 18V
Line voltage regulation	Auxiliary ±5%
Load voltage regulation	single: ± 0.5%, dual: ±3%, tiple3.3V/5V: ±2%, Auxiliary: 5%
Temperature coefficient	± 0.02% / °C max.
Minimum load	10% to maintain the specified regulation

General	
Efficiency	See table
Switching frequency	300 kHz, typ.
Transient response recovery time	@25% load change 500μs
Isolation voltage	1600 V _{DC}
Isolation Leakage current	1 mA
Isolation Resistance	10 ⁹ Ω
Isolation Capacitance	300 pF, typ.
Case material	Nickel-coated copper
Base material	Non conductive black plastic
Potting material	Epoxy (UL94-V0)
MTBF	@Ta 40°C, 50% stress: 1.928x10 ⁶ hrs
Bellcore TR-NWT-000332	
Environmental	
Operating temperature	-25 °C to +85 °C (standard, derating)
Storage temperature	-55 °C to +105 °C
Maximum case temp.	+100 °C
Thermal impedance	Nature convection 10°C/W with heatsink 8.3°C/W
Vibration	10..55Hz, 2G, 30min, X,Y, Z axis
Humidity	5% to 95% RH
Physical	
Dimensions	2 x 1.6x 0.4 inches 50.8x40.6x10.2 mm
Weight	48 g

Dimensions



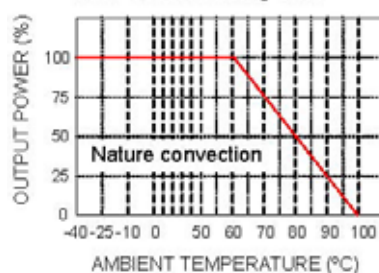
All dimensions in inches (mm)
Pin Pitch tolerance (0.35)

Pin connections

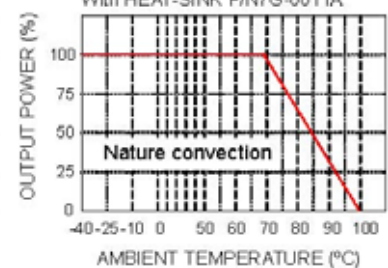
PIN	Single	Dual
1	+ Input	+ Input
2	- Input	- Input
4	Remote CTRL	Remote CTRL
5	No Pin	+ Output
6	+ Output	Common
7	- Output	- Output
8	TRIM Input	TRIM Input

Derating

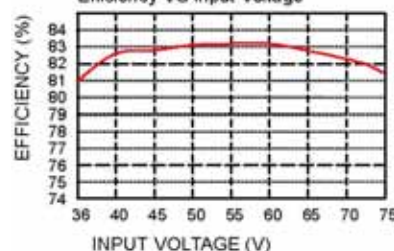
P20Y48S05W Derating Curve



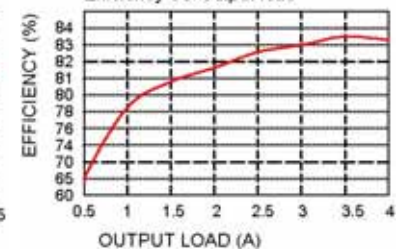
P20Y48S05W Derating Curve With HEAT-SINK P/N7G-0011A



P20Y48S05W Efficiency VS Input Voltage

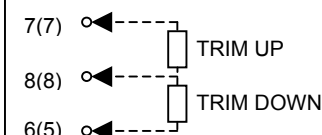


P20Y48S05W Efficiency VS Output load



Output adjustment

Output can be externally trimmed by using the method shown below. () for dual output trim.



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.

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