Digital Power®
Flexible Power Solutions

(877) 634-0982
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DPRL0603 Series

250W AC-DC Single Output Switching Power Supply

Product Specification

250W AC-DC Single Output

Switching Power Supply

Key Product Features

- Smallest 250W with 1U height Power Density: 10.4 watts/cu in.
- U-Chassis & Enclosed with built-in fan Mechanical Options
- Low Leakage Current 500uA @ 240Vac / 300uA @ 120Vac
- Providing Peak Power 600W within 500uS duty duration
- Power Factor Corrected to EN61000-3-2 class A
- Approved to UL CUL TUV CB and CE.
- AC Input Range Auto-Selectable
- Output Voltages from 2 ~ 60Vdc

Specifications

Input Voltage	90-132 / 180-264Vac, 47-63Hz auto selectable
Input Current	6/3A at 110-120 / 200-240VAC
Inrush Current	Max. 70A@230Vac & 35A@115Vac; cold start
PFC	Power factor corrected to EN61000-3-2 class A
Transient Response	Output voltage returns to within 1% in less than 2.5mS for a 50% load change, peak does not excess 5%.
Overshoot:	Turn-on & off overshoot < 5% over nominal voltage.
Efficiency	70% for 3.3V, 75% for 5V, 80% for 12V and 83% minimum for others output @ 230V and full load

Model Selection

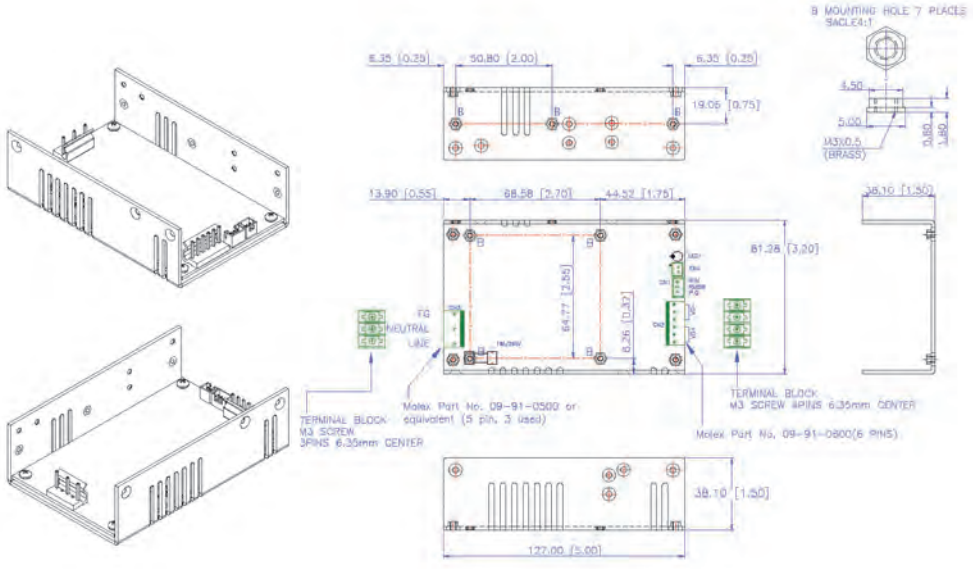
Model	Output Range	Preset Voltage	Max. Output Power or Current		Regulation	Ripple & Noise
			Type U (with forced air) & F	Type U (Convection)		
DPRL0603x-05	2 ~ 5V	5V	40A	20A	+/- 1%	0.01
DPRL0603x-09	6 ~ 10V	9 V	25A	13.5A	+/- 1%	1%
DPRL0603x-12	11 ~ 13.8V	12 V	250W	135W	+/- 1%	0.01
DPRL0603x-15	14 ~ 15.5V	15 V	250W	135W	+/- 1%	1%
DPRL0603x-18	16 ~ 20V	18V	250W	135W	+/- 1%	0.01
DPRL0603x-24	21 ~ 26V	24V	250W	135W	+/- 1%	1%
DPRL0603x-28	27 ~ 34V	28V	250W	135W	+/- 1%	1%
DPRL0603x-36	35 ~ 42V	36V	250W	135W	+/- 1%	1%
DPRL0603x-48	43 ~ 50V	48V	250W	135W	+/- 1%	1%
DPRL0603x-54	51 ~ 60V	54V	250W	135W	+/- 1%	1%

NOTE:

* DPRL0603 series are designated as DPRL0603x-y where x can be **U** (U-Chassis Type) or **F** (U-Chassis with Cover and built-in Fan installed); y can be **05, 09, 12, 15, 18, 24, 28, 36, 48, 54**.
* DPRL0603U Series: 250W max. with 16CFM forced air flow offering; 135W max. under air convection. (Option: Top Cover Type A or B). DPRL0603F Series: 250W max. with Top built-in Fan flow.
* Providing peak power to 600W within 500uS for all models, longer duty duration need contact manufacturer.
* Ripple and noise is measured from 10KHZ to 20MHz bandwidth at output with parallel 0.1uF ceramic and 22uF electrolytic capacitors.
* 1% minimum load is required to maintain the ripple and regulation. Output is fully isolated.

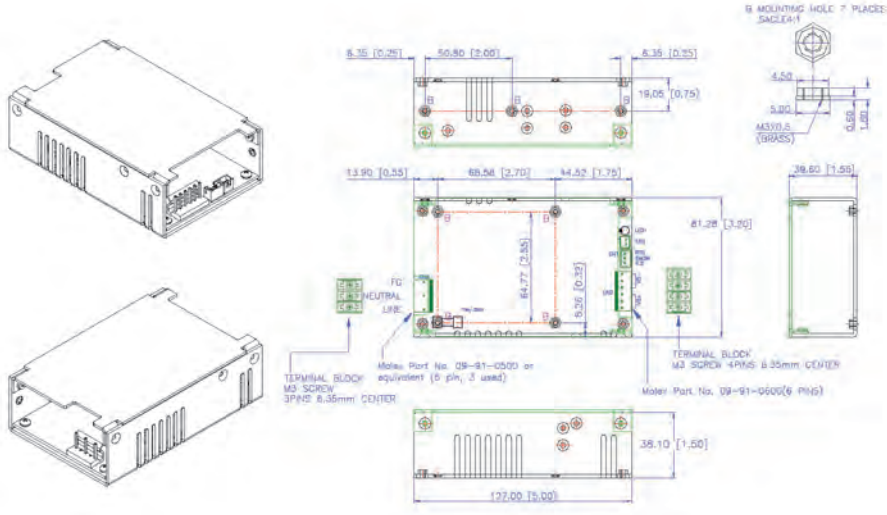
OUTLINE DRAWING:

DPRL0603U Series (U-Chassis Type): 5(L) x 3.2(W) x 1.5(H) inches; Weight: 400g.

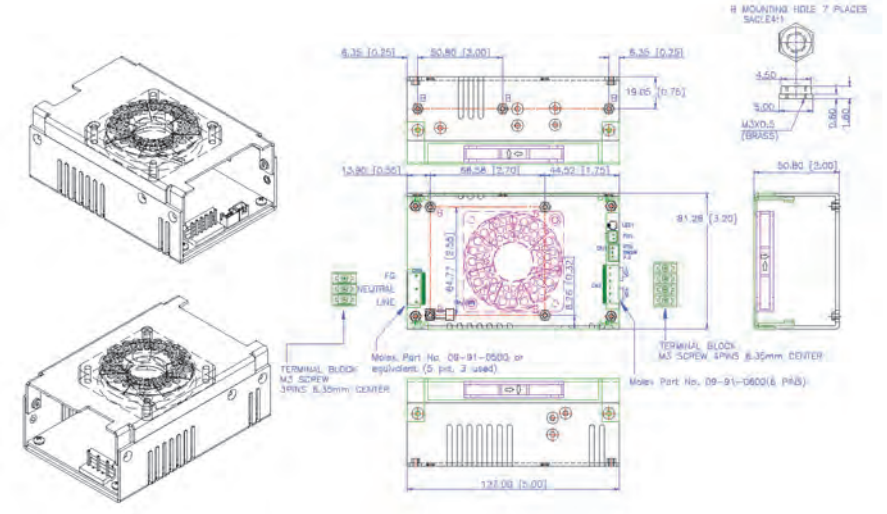


OUTLINE DRAWING:

DPRL0603U Series (U-Chassis with Top Cover): 5(L) x 3.2(W) x 1.56(H) inches; Weight: 420g.



DPRL0603F Series (Enclosed with Top Fan Type): 5(L) x 3.2(W) x 2(H) inches; Weight: 500g.



NOTES:
Input Connector(CN3): Mating Molex Part No. 09-91-0500 or equivalent (5 pin, 3 used) PCB Labeling: L = Line; N = Neutral; G = Chassis Ground; Molex Engineering Series 2478, 2578, 8818 or Howder M3. 3 pin Terminal block 6.35MM Center (HD-601-3P). Output Connector (CN2): Mating Molex Part No. 09-91-0600. Mating Pins: Molex Engineering Series 2478, 2578, 8818. or Howder M3. 3 pin Terminal block 6.35MM Center (HD-601-4P) Mating JST Part No. XHP-2 or equivalent (CHYAO SHIUNN JS- 4001-06).
Connector Pin Assignment: (See table in right).
Power Good, Remote On/Off mating connectors (CN1):
Mating JST Part No. XHP-3 or equivalent (CHYAO SHIUNN JS-2001-03). Mating Pins: JST SXH-002T-P0.6 FOR AWG 30 to 26.
Signal Pin Assignment:
Pins 1 : Power good . Pins 2 : Remote Switch. Pins 3 : RTN.
Fan Drive: Mating JST Part No. XHP-2 or equivalent (CHYAO SHIUNN JS-2001-02).
Mounting Inserts: 7 Places M3. Maximum Penetration 3.8mm sees outline drawing for location.

Howder	Molex
Pins 1-2: V+	Pins 1-3: V+
Pins 3-4: V-	Pins 4-6: V-

Specifications	
Turn On Delay	1 second maximum at 120 Vac
Hold Up Time	20mS min. at 80% of full load
Adjustability	Output user adjustable +/-5% minimum
Input Fusing Protection	One T6A/250V fuse inserted in primary
Over Voltage Protection	Unit latching down when output exceed 130% and recycle AC input to reset
Over-Power Protection	Fold back mode 110-140%; Auto-recovery. Short Circuit Protection
Short Circuit Protection	Trip without damage and auto-recovery
Over-Temperature Protection	Unit protected of excessive operating ambient 85 ℃, and automatic recovery
Operating Temperature	O to 70℃ ambient, de-rating at 2.5% per degree from 50℃ to 70℃
Operating Humidity	5% to 90% RH, Non-condensing
Storage Humidity	5% to 95% RH, Non-condensing
Storage Temperature	-20 to 85 ℃
Vibration	5 ~ 50 Hz, acceleration 7.35 m/s*s on X,Y and Z Axis
Remote On-Off	Designated as RMSW on the CN1, requires a low signal to inhibit output. Hiccough mode
Power Supply On	Green LED designated as LED1 on the PCB
Power Good	Designated as PG on the CN1 will go high 100-500mS after regulation and goes low 1mS before loss of regulation
Fan Drive	12VDC/300mA is available to drive an external fan
Switching Frequency	25K Hz fixed frequency
EMC Standards	CISPR 22 / EN55022 class B, EN61000-3-2,3, EN61000-4-2,3,4,5,6,8,11, EN55024 CE Marked (LVD)
Safety Regulation	Approved to UL60950-1, CSA C22.2 No. 60950-1, TUV EN60950-1 and CB certificate available
Leakage Current	Regular Type 1.5mA @ 240Vac. (optional for 500uA max. at 240Vac / 300uA max. at 120Vac input)
HI-POT Withstand Voltage	1500 VAC input line to chassis (10mA DC cut off current); Isolating 3000VAC primary to secondary windings; Primary to core 1500VAC. All for 3 sec
Grounding Test	Apply 25 A from ground pin of the three prong plug to the far most earth. Max allowable resistance 0.1 ohm
MTBF	100000 Hrs (according to MIL-HBK-217F) at 30 degree C
Cooling	DPRL0603U Series: 250/ 135W max. @ forced air flow/ convection DPRL0603F Series: 250W max. with top built-in fan flow
Burn in	45 +/- 5 degree C for 1 hour @230Vac with full load
Enclosure	DPRL0603U Series (U-Chassis Type): 5(L) x 3.2(W) x 1.5(H) inches. (Option: Top Cover Type A or B) DPRL0603F Series (Enclosed Type): 5(L) x 3.2(W) x 2(H) inches
Weight	DPRL0603U Series: 400g; DPRL0603F Series: 500g

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