



ULTRA LEVEL TECH CO., LTD.

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We Supply the Power Customers Need ISO9001

135W ~ 250W AC-DC SWITCHING POWER SUPPLY RL0603 SINGLE OUTPUT SERIES

FEATURES:

- ◆ Compact 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
- ◆ Variable Fan Speed & Low Acoustical Noise
- ◆ High Quality & Reliable Component Usage
- ◆ Approved to UL CUL TUV CB and CE.
- ◆ AC Input Range Auto-Selectable
- ◆ Output Voltages from 2 ~ 60Vdc



RL0603U Series (U-Chassis Type): 5(L) x 3.2(W) x 1.5(H) inches.

RL0603F Series (U-Chassis with top built-in fan): 5(L) x 3.2(W) x 2(H) inches.

RL0603E Series (Enclosed with end built-in fan): 5.39(L) x 3.2(W) x 1.6(H) inches.

PRODUCT 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 exceed 5%.

Overshoot: Turn-on & off overshoot < 5% over nominal voltage.

Efficiency: 70% ~ 85% depends on model.

Turn On Delay: 1 second maximum at 230 Vac.

Hold Up Time: 20mS min. at 80% of full load.

Adjustability: Output user adjustable +/-5% minimum.

Input Fusing Protection: One T8A/250V fuse inserted in primary.

Over Voltage Protection: Unit latching down when output exceed 130% and recycle AC input to reset.

Over-Power Protection: 110-140% of I-Max; Auto-recovery.

Short Circuit Protection: Trip without damage and auto-recovery.

Over-Temperature Protection: Unit protected of excessive operating ambient 110 °C, and automatic recovery.

Operating Temperature: 0°C to 70°C ambient, de-rating at 2.5% per degree from 50°C to 70°C.

Operating Humidity: 5% to 90% RH, Non-condensing.

Storage Humidity: 5% to 95% RH, Non-condensing.

Storage Temperature: -20 to 85 °C.

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. Hiccup mode.

Power Supply On: Green LED designated as **LED1** on the PCB.

Power Good: **PG** on CN1 goes high 100-500mS after DC regulation and low at least 1mS before loss of regulation (Open collector).

Fan Drive: 12VDC/300mA is available to drive an external fan.

Switching Frequency: 25K Hz fixed frequency.

EMC: EN 55032: 2015+A11: 2020

EN 61000-3-2: 2014, EN 61000-3-3: 2013

EN 55035: 2017+A11: 2020

IEC 61000-4-2: 2008, IEC 61000-4-3: 2020

IEC 61000-4-4: 2012, IEC 61000-4-5: 2014+A1:2017

IEC 61000-4-6: 2013+C1: 2015, IEC 61000-4-8: 2009

IEC 61000-4-11: 2020+C1:2020

Safety Regulation: IEC/EN/UL 62368-1

Leakage Current: < 1mA @ 264Vac.

HI-POT Withstand Voltage: 1600 VAC input line to chassis (10mA DC cut off current); Isolating 3000VAC primary to secondary windings; Primary to core 1800VAC. 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.

Warranty: 2 years.

MTBF: 100000 Hrs (according to MIL-HBK-217F) at 30 degree C.

Cooling: RL0603U Series: 135W max. under air convection.
250W max. with min. 16CFM forced air flow.

RL0603F & E Series: 250W max. with top built-in fan flow.

Burn in: 45 +/- 5 degree C for 1 hour @230Vac with full load.

Enclosure:

RL0603U Series (U-Chassis Type): 5(L) x 3.2(W) x 1.5(H) inches.

RL0603F Series (U-Chassis with top built-in fan): 5(L) x 3.2(W) x 2(H) inches.

RL0603E Series (Enclosed with end built-in fan):5.39(L) x 3.2(W) x 1.6(H) inches.

Weight: RL0603U Series: 400g; RL0603F&E Series: 500g.



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OUTPUT VOLTAGE / CURRENT RATING CHART: Measured at output power connector.

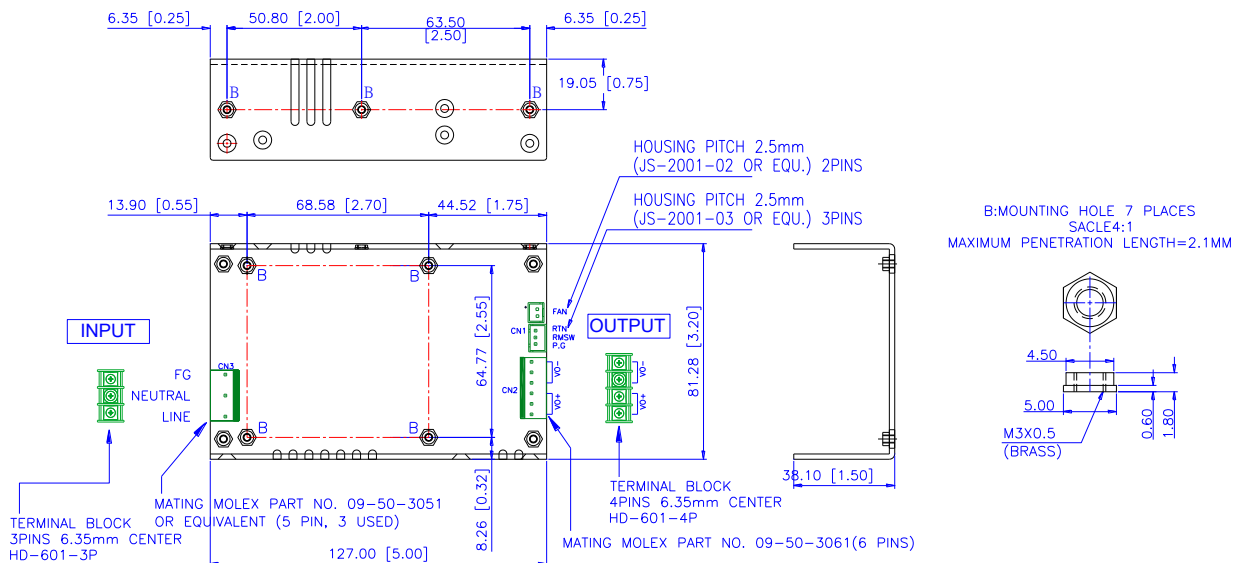
Model	Output Range	Preset Voltage	Max. Output Power or Current		Regulation	Ripple & Noise
			Type U (with min.16CFM forced air) & Type F & Type E	Type U (Convection)		
RL0603x-05	2 ~ 5V	5V	40A	20A	+/- 1%	1%
RL0603x-09	6 ~ 10V	9 V	25A	13.5A	+/- 1%	1%
RL0603x-12	11 ~ 13.8V	12 V	250W	135W	+/- 1%	1%
RL0603x-15	14 ~ 15.5V	15 V	250W	135W	+/- 1%	1%
RL0603x-18	16 ~ 20V	18V	250W	135W	+/- 1%	1%
RL0603x-24	21 ~ 26V	24V	250W	135W	+/- 1%	1%
RL0603x-28	27 ~ 34V	28V	250W	135W	+/- 1%	1%
RL0603x-36	35 ~ 42V	36V	250W	135W	+/- 1%	1%
RL0603x-48	43 ~ 50V	48V	250W	135W	+/- 1%	1%
RL0603x-54	51 ~ 60V	54V	250W	135W	+/- 1%	1%

NOTE:

- * RL0603 series are designated as RL0603x-y where x can be **U** (U-Chassis Type) or **F** (U-Chassis with Cover and built-in Fan installed) or **E** (Enclosed with end built-in fan); y can be **05, 09, 12, 15, 18, 24, 28, 36, 48, 54**.
- * RL0603U Series: 250W max. with min.16CFM forced air flow offering; 135W max. under air convection.
- * RL0603F&E 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:

RL0603U Series (U-Chassis Type): 5(L) x 3.2(W) x 1.5(H) inches; Weight: 400g.



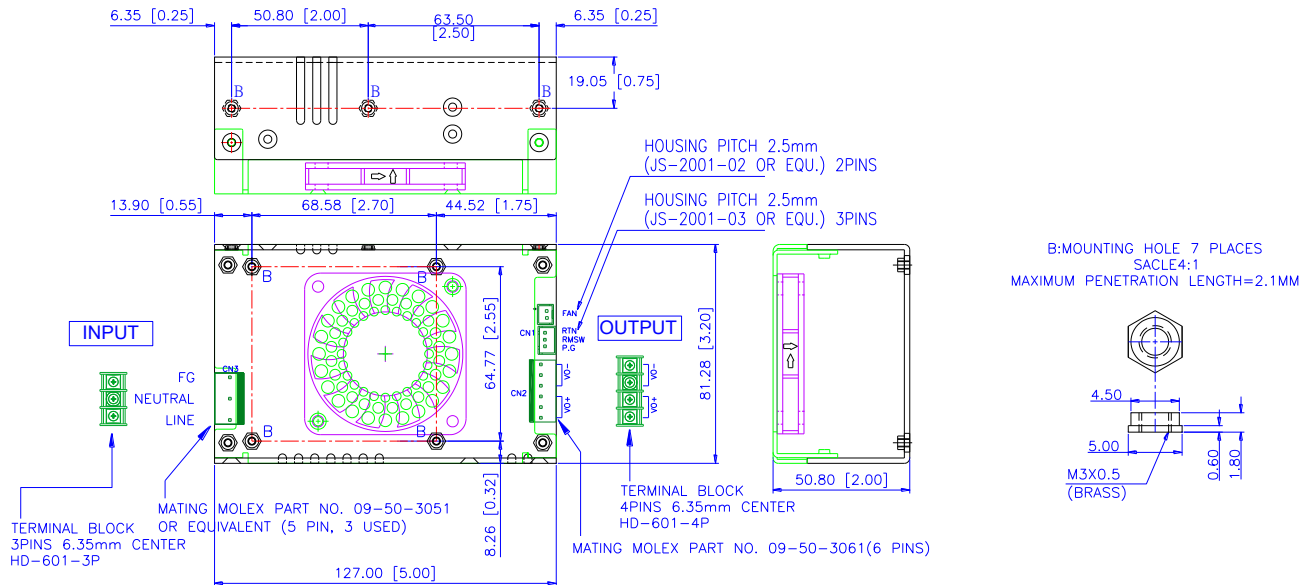


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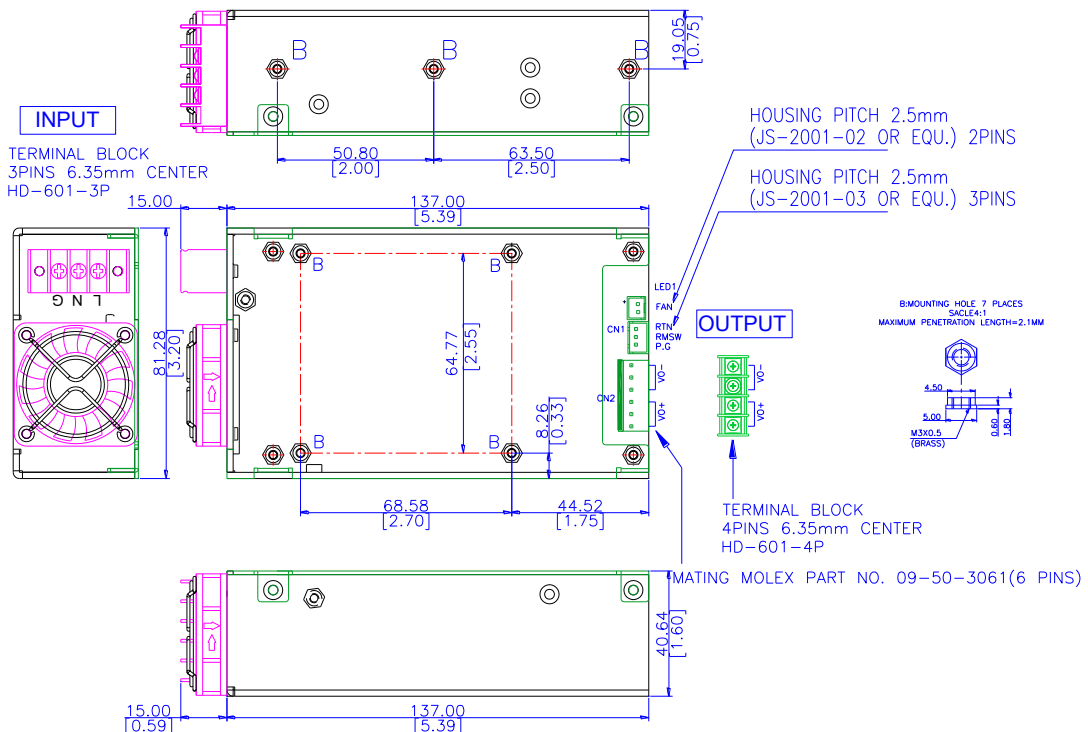
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RL0603F Series (Enclosed with Top Fan Type): 5(L) x 3.2(W) x 2(H) inches; Weight: 500g.



RL0603E Series (Enclosed with end built-in fan): 5.39(L) x 3.2(W) x 1.6(H) inches; Weight: 500g.



NOTES:

Input Connector(CN3):

U and F Type: Mating Molex Part No. 09-93-0500 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).

E type: : Terminal Block: Howder HD-602-3P.

Output Connector (CN2): Mating Molex Part No. 09-93-0600. Mating Pins: Molex Engineering Series 2478, 2578, 8818. or Howder M3. 3 pin Terminal block 6.35MM Center (HD-601-4P)

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 2.1mm sees outline drawing for location.

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