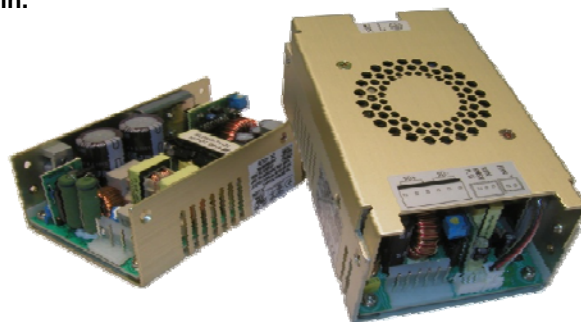


## 135W ~ 250W AC-DC SWITCHING POWER SUPPLY RL0603 SINGLE OUTPUT SERIES

### 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 (Enclosed Type): 5(L) x 3.2(W) x 2(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. Hiccough 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:** EN55022 class B conducted / radiated, EN61000-3-2, EN61000-3-3; EN55024 (IEC61000-4-2, IEC61000-4-3, IEC61000-4-4, IEC61000-4-5, IEC61000-4-6, IEC61000-4-11).

**Safety Regulation:** UL60950-1, EN60950-1, IEC60950-1.

**Leakage Current:** < 1mA @ 264Vac.

(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.

**Warranty:** 2 years.

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

**Cooling:**

RL0603U Series: 250/ 135W max. @ forced air flow/ convection.

RL0603F 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.

(Option: Top Cover Type A or B)

RL0603F Series (Enclosed Type): 5(L) x 3.2(W) x 2(H) inches.

**Weight:** RL0603U Series: 400g; RL0603F Series: 500g.

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

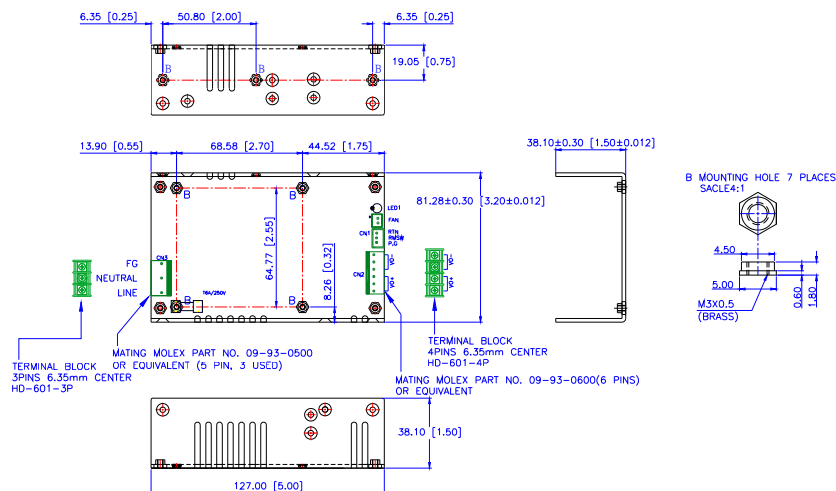
Model	Output Range	Preset Voltage	Max. Output Power or Current		Regulation	Ripple & Noise
			Type U (with forced air) & F	Type U (Convection)		
RL0603x-05	2 ~ 5V	5V	40A	20A	+/- 1%	1%
RL0603x-09	6 ~ 10V	9V	25A	13.5A	+/- 1%	1%
RL0603x-12	11 ~ 13.8V	12V	250W	135W	+/- 1%	1%
RL0603x-15	14 ~ 15.5V	15V	250W	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); y can be **05, 09, 12, 15, 18, 24, 28, 36, 48, 54**.
- \* RL0603U Series: 250W max. with 16CFM forced air flow offering; 135W max. under air convection. (Option: Top Cover Type A or B)
- \* RL0603F 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.

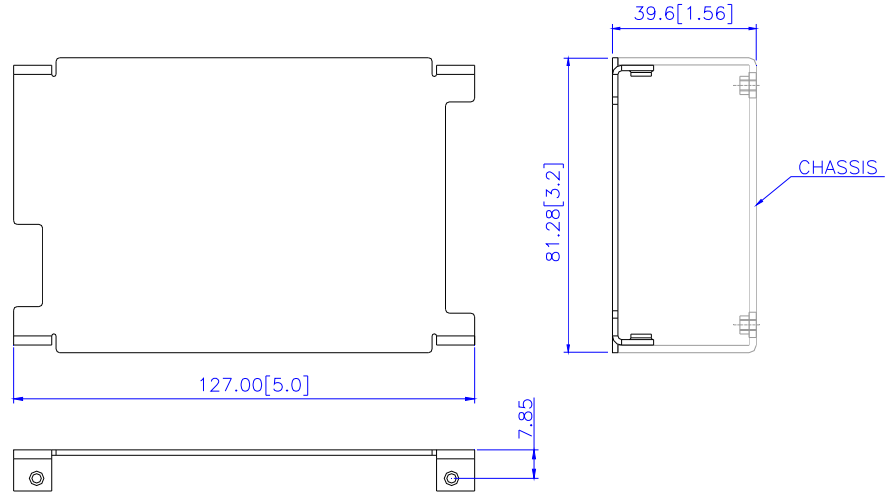
**OUTLINE DRAWING:**

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



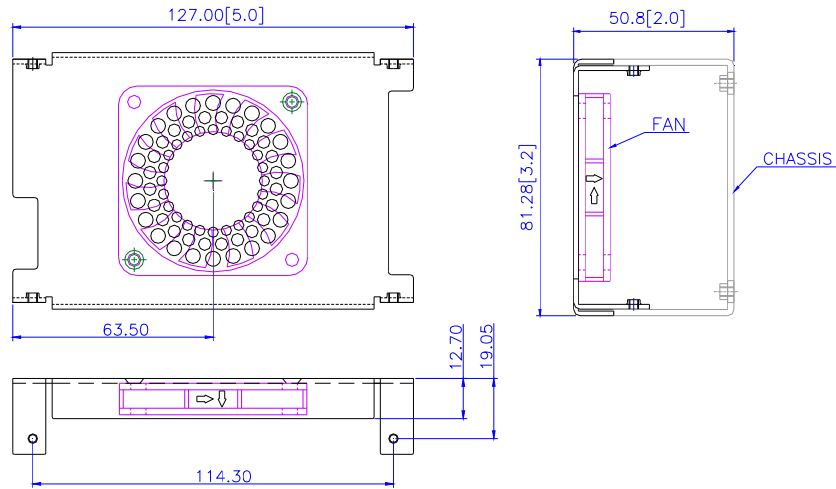
**RL0603U Series (U-Chassis with Top Cover): 5(L) x 3.2(W) x 1.56(H) inches; Weight: 420g.**

COVER (TYPE A)  
\*FOR RL0603 SERIES



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

COVER WITH  
BUILT-IN DC FAN  
\*FOR RL0603F SERIES



**NOTES:**

**Input Connector(CN3):** 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).

**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) 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-