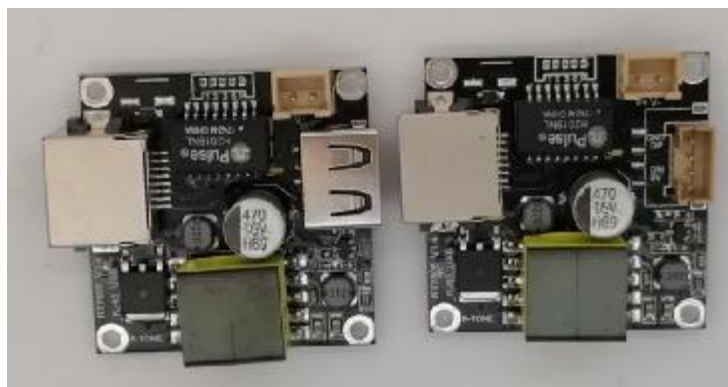


RT7805

POE to USB 2.0 Moudule (Isolation Model)

Product Description



Version	Date	Author	Approved By	Remarks
V1.0	2018/5/14	LI xiao yan	Rock	

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Features:

- IEEE802.3AF compliant
- Integrated 100M LAN Filters
- Integrated USB 2.0 IC (RTL8152B or SR9900)
- Input voltage range 36V to 57V
- Integral high efficiency DC/DC converter.
- Low output ripple and noise
- High performance with low price
- Short-circuit protection
- Adjustable Output
- Optional multi-voltage output 5V 12V 24V
- Transformer isolation , 1500V isolation (input to output)
- Easy to use, with a minimum number of external components.
- Rohs compliant



Applications:

- IP Cameras
- Wireless access point
- Security and alarm systems
- VOIP telephone
- Point of sale network terminal equipment

Description:

The RT7805 series of modules are designed to extract power from a conventional twisted pair Category 5 Ethernet cable, conforming to the IEEE 802.3af Power-over-Ethernet(PoE) standard.

The RT7805 signature and control circuit provides the PoE compatibility signature and power classification required by the Power Sourcing Equipment (PSE) before applying up to 15W power to the port. The RT7805 provides a Class 0 signature.

The DC/DC converter operates over a wide input voltage range and provides a regulated output. The DC/DC converter also has built-in short-circuit output protection.

USB2.0:

Integrated Single-Chip USB 2.0 to 10/100M Ethernet Controller, RTL8152B or SR9900, Supports USB 2.0 and 1.1

For more details, please visit the manufacturer website.

RTL8152B <http://www.realtek.com>

SR9900 <http://www.corechip-sz.com>

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I RT7805 Product Selector

Part Number	Nominal Output Voltage	Nominal Output current	Maximum Output Power*	USB2.0
RT7805 -5V_USB	5V	2A	10W**	Integrated
RT7805 -12V_USB	12V	1A	12W**	Integrated
RT7805 -24V_USB	24V	0.5A	12W**	Integrated
RT7805 -5V_RJ45	5V	2A	10W**	NO
RT7805 -12V_RJ45	12V	1A	12W**	NO
RT7805 -24V_RJ45	24V	0.5A	12W**	NO

*At 25°C with VIN = 48V

** Maximum Output Power: means it not could be operated in continuous stage .only short-term of Boot up/Heavy loading

I Pin Description:

Pin #	Name	Description
J1-1	-VDC	DC Return. This pin is the return path for the +VDC output.
J1-2	+VDC	DC Output. This pin provides the regulated output from the DC/DC converter.
J2-1	TXP1	LAN Filters putout 1, connection phy ic or RJ45
J2-2	TXM1	LAN Filters putout 2, connection phy ic or RJ45
J2-3	RXP1	LAN Filters putout 3, connection phy ic or RJ45
J2-4	RXM1	LAN Filters putout 6, connection phy ic or RJ45
J2-5	PWFBOU	LAN Filters mid, connection phy ic
J3-1	USB port	GND
J3-2	USB port	DP
J3-3	USB port	DM
J3-4	USB port	VCC

I Absolute Maximum Ratings

	Parameter	Symbol	Min	Max	Units
1	DC Supply Voltage	VCC	-0.3	60	V
2	DC Supply Voltage Surge for 1ms	VSURGE	-0.6	80	V
3	Storage Temperature	TS	-40	100	°C

Note 1: Exceeding the above ratings may cause permanent damage to the product. Functional operation under these conditions is not implied. Maximum ratings assume free airflow.

I Recommended Operating Conditions

	Parameter	Symbol	Min	Typ	Max	Units
1	Input Supply Voltage ¹	VIN	36	48	57	V
2	Under Voltage Lockout	VLOCK	30		36	V
3	Operating Temperature ²	TOP	-20	25	70	Ta / °C

Note 1: With minimum load

2: See Section Operating Temperature Range

** Extended use close to, or at the maximum operating temperature can reduce the life time of the device.

I DC Electrical Characteristics

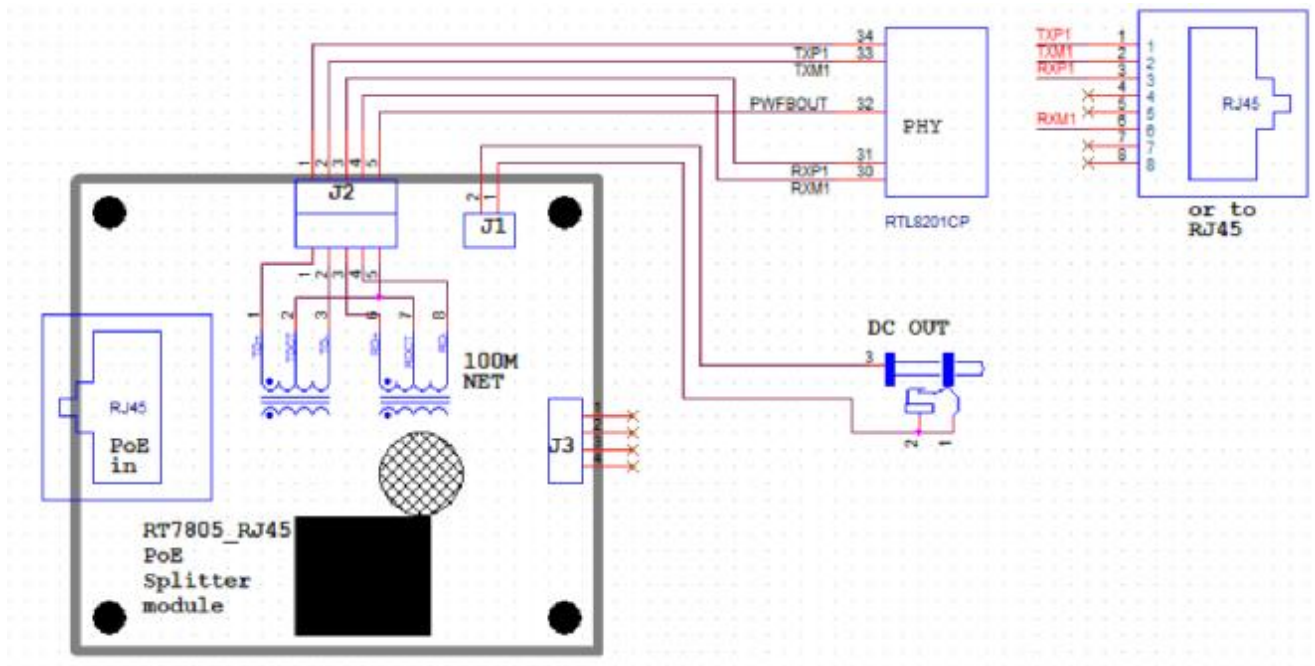
	DC Characteristic	Sym	Min	Typ ¹	Max	Units	Test Comments
1	Nominal Output Voltage	+VDC	4.75	5.0	5.25	V	RT7805-5V RT7805-12V RT7805-24V
			11.5	12.0	12.5	V	
			23.5	24.0	24.5	V	
2	Output Current (VIN = 48V)	PWR			2	A	
					2	A	
					1.0	A	
					0.5	A	
3	Line Regulation	VLINE		0.1		%	@ 50% Load
4	Load Regulation	VLOAD		1		%	@ VIN=48V
5	Output Ripple and Noise	VRN		100		mVp-p	@ Max load ²
6	Minimum Load	RLOAD	200			mA	RT7805-5V RT7805-12V RT7805-24V
			100			mA	
			50			MA	
7	Short-Circuit Duration ³	TSC			∞	sec	
8	Efficiency @ 80% Load	EFF		84		%	RT7805-5V RT7805-12V RT7805-24V
				87		%	
				87		%	
9	Isolation Voltage (I/O)	VISO		1500		V _{PK}	Impulse Test
10	Temperature Coefficient	TC		0.02		%	Per °C

Note 1: Typical figures are at 25°C with a nominal 48V supply and are for design aid only. Not Guaranteed

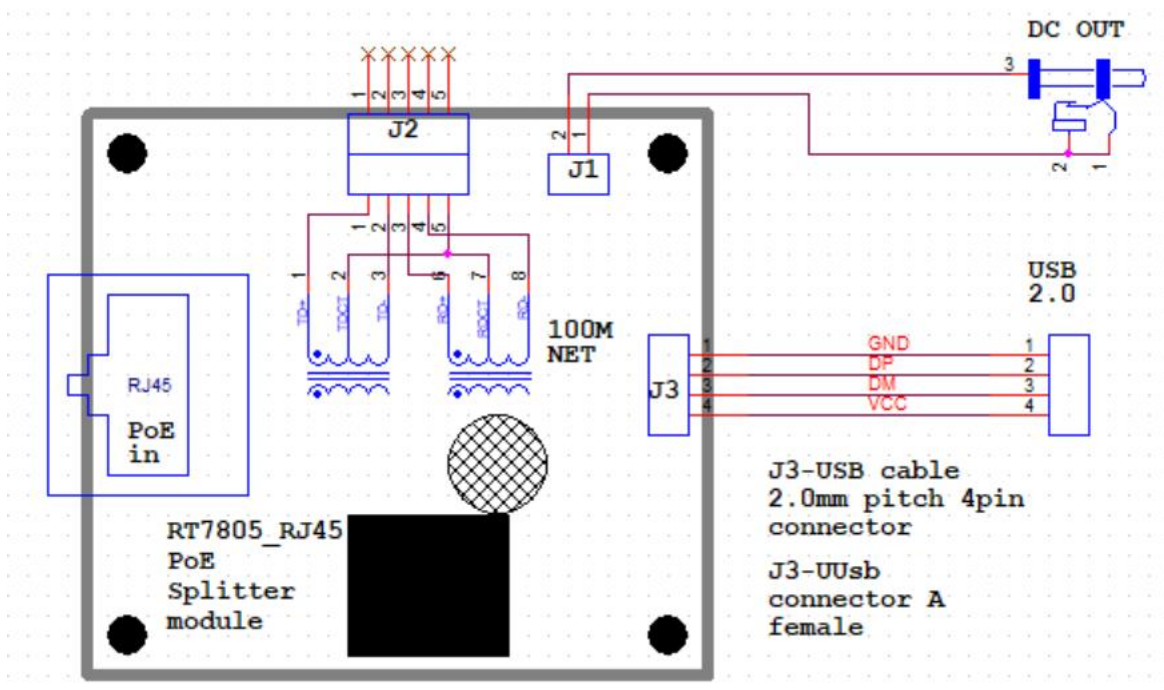
2: The output ripple and noise can be reduced with an external filter, see application note.

3: Continuous short circuit duration is applicable at 25°C ambient temperature in free air. At higher temperatures or with restricted airflow (e.g. in a sealed enclosure) the duration will need to be limited to avoid overheating.

I RT7805_RJ45 Typical Connection Diagram :



I RT7805_USB Typical Connection Diagram :



I Reliability MTBF:

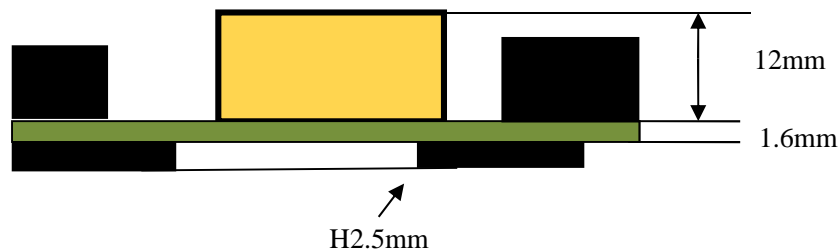
About the life time ,we design according to the following:

- 1) life time of RT7805 : 100,000 hours @ 25°C

I Safety test items & test report

Test Requested	Test result
Electric strength -1500Vrms at 50 to 60Hz for 60s, applied as specified in subclaususe 5.2.2 of IEC 60950	Pass

I RT7805 Package Size: (mm)



I RT7805 PCB Decal : (mm)

