REYAX
TECHNOLOGY CORPORATION, LTD

1-AUG-2024 56312E33

RYLR948

868/915MHz LoRa® Proprietary Transceiver with Nuvoton® Arm® Cortex® M4 Module

Datasheet

PRODUCT DESCRIPTION

The RYLR948 is transceiver module feature the LoRa® long range modem that also provides ultra-long range spread spectrum communication and high interference immunity whilst minimizing current consumption.

Its open module architecture empowers customers to program their own firmware, granting them more flexibility and control over their end product's functionality. This versatility positions the module as a competitive choice for developers seeking a high level of customization.

FEATURES

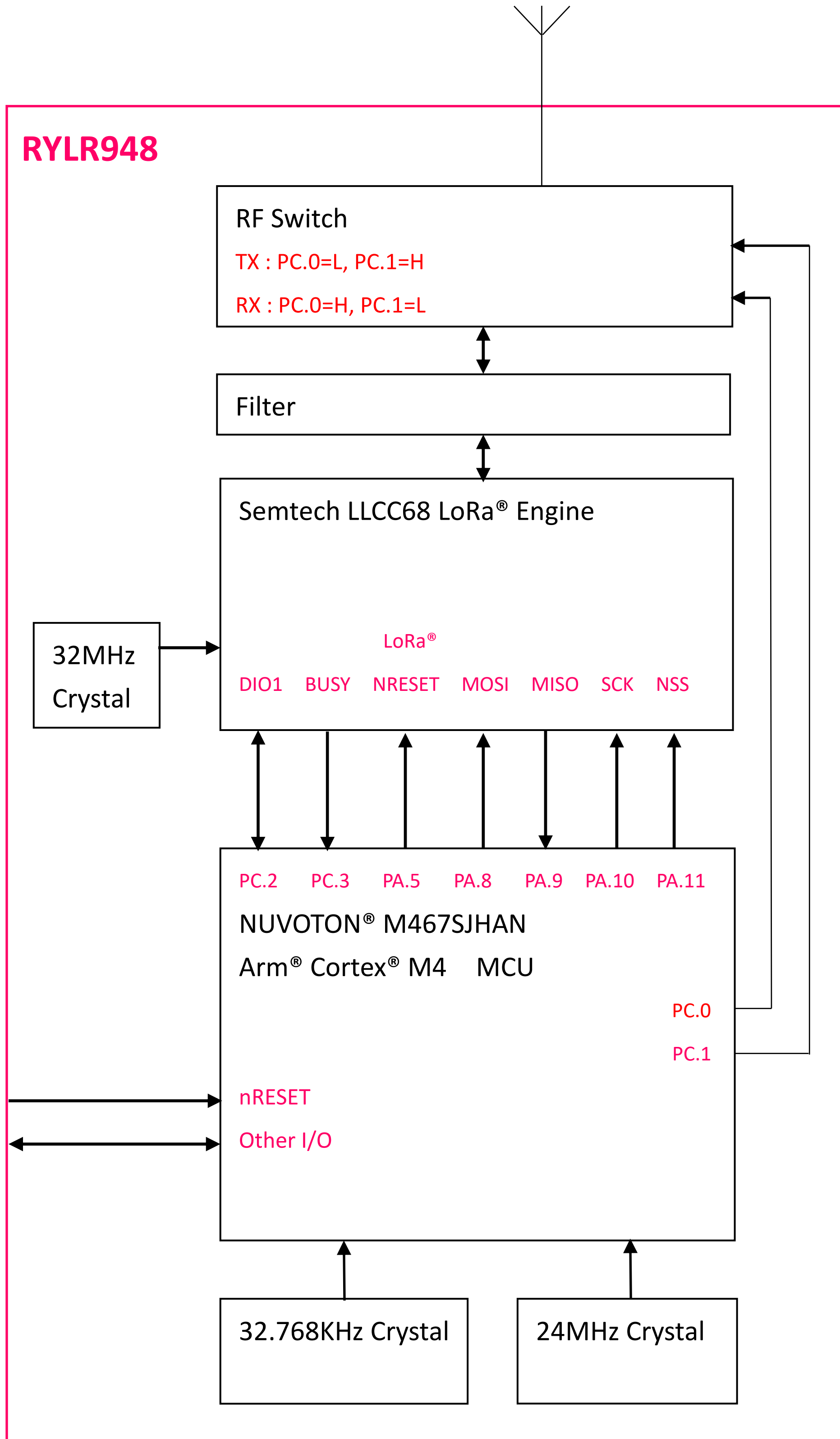
- NUVOTON M467SJHAN & Semtech LLCC68 LoRa® Engine.
- Excellent blocking immunity
- High sensitivity

APPLICATIONS

- IoT Applications
- Mobile Equipment
- Home Security
- Industrial Monitoring and Control Equipment

Copyright © 2024REYAX TECHNOLOGY CO., LTD.

BLOCK DIAGRAM



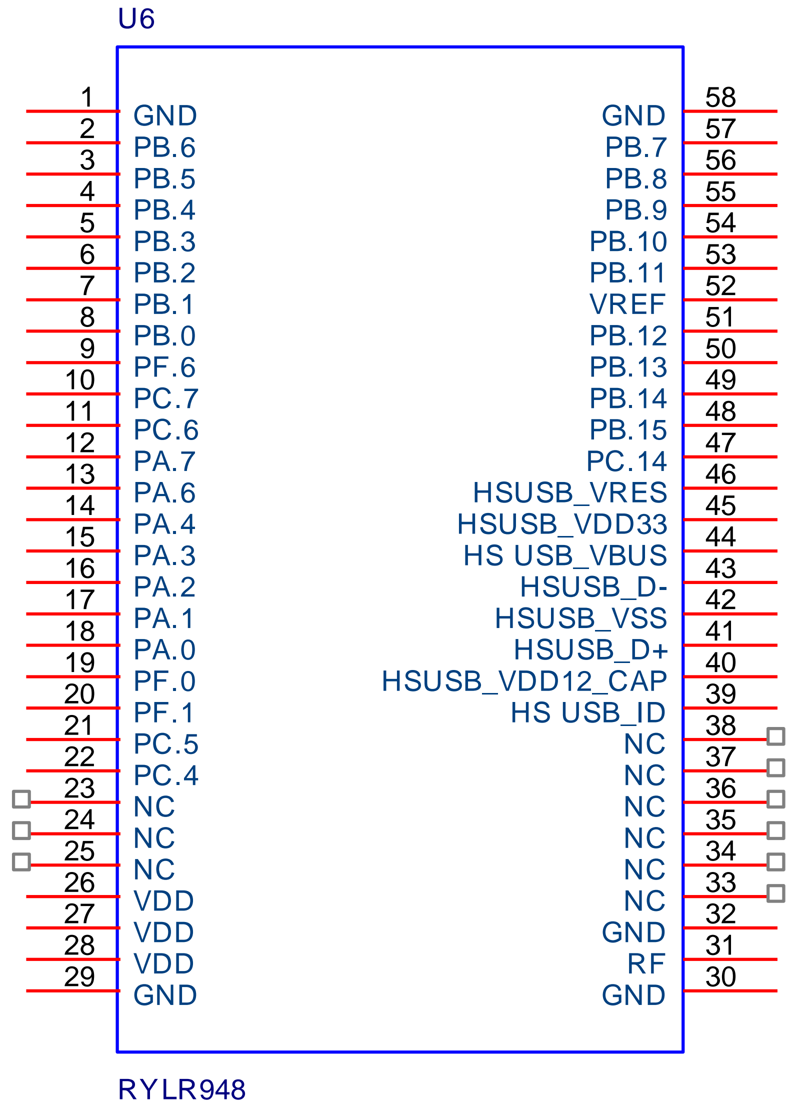
Copyright © 2024REYAX TECHNOLOGY CO., LTD.

SPECIFICATION

Item	Min.	Typical	Max.	Unit	Condition
VDD Power supply	2.3	3.3	3.6	V	VDD
LoRa					
RF Output power range	0		22	dBm	
Filter insertion loss	1	2	3	dB	
RF Sensitivity	-129			dBm	
RF Input level			10	dBm	
Frequency range	820	868/915	960	MHz	
Frequency accuracy		±10		ppm	
Transmit Mode current		140		mA	RFOP = +22dBm
Receive Mode current		17.5		mA	@VDD=+3.3V
Sleep mode current		10		uA	AT+MODE=1 @VDD=+3.3V
NUVOTON® M467SJHAN					
Flash		1024		KB	
SRAM		512		KB	
Weight		2.8		g	
Operating temperature	-40	25	+85	˚C	

Copyright © 2024REYAX TECHNOLOGY CO., LTD.

PIN DESCRIPTION



Copyright © 2024REYAX TECHNOLOGY CO., LTD.

REFLOW SOLDERING

Consider the "IPC-7530 Guidelines for temperature profiling for mass soldering (reflow and wave) processes, published 2001. **Only single reflow soldering processes are recommended for REYAX modules. Repeated reflow soldering processes and soldering the module upside down are not recommended.**

Preheat phase

Initial heating of component leads and balls. Residual humidity will be dried out. Please note that this preheat phase will not replace prior baking procedures.

- Temperature rise rate: max. 3 °C/s If the temperature rise is too rapid in the preheat phase it may cause excessive slumping.
- Time: 60 - 120 s If the preheat is insufficient, rather large solder balls tend to be generated.
  Conversely, if performed excessively, fine balls and large balls will be generated in clusters.
- End Temperature: 150 - 200 °C If the temperature is too low, non-melting tends to be caused in
  areas containing large heat capacity.

Heating/ Reflow phase

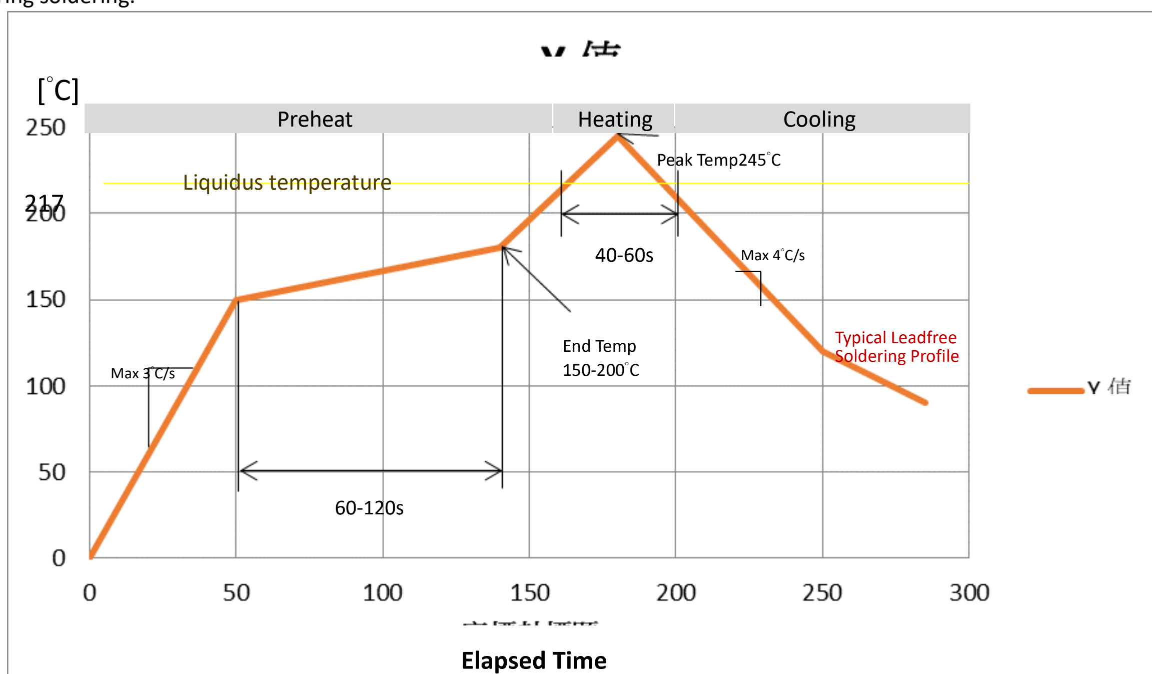
The temperature rises above the liquidus temperature of 217°C. Avoid a sudden rise in temperature as the slump of the paste could become worse.

- Limit time above 217 °C liquidus temperature: 40 - 60 s
- Peak reflow temperature: 245 °C

Cooling phase

A controlled cooling avoids negative metallurgical effects (solder becomes more brittle) of the solder and possible mechanical tensions in the products. Controlled cooling helps to achieve bright solder fillets with a good shape and low contact angle.

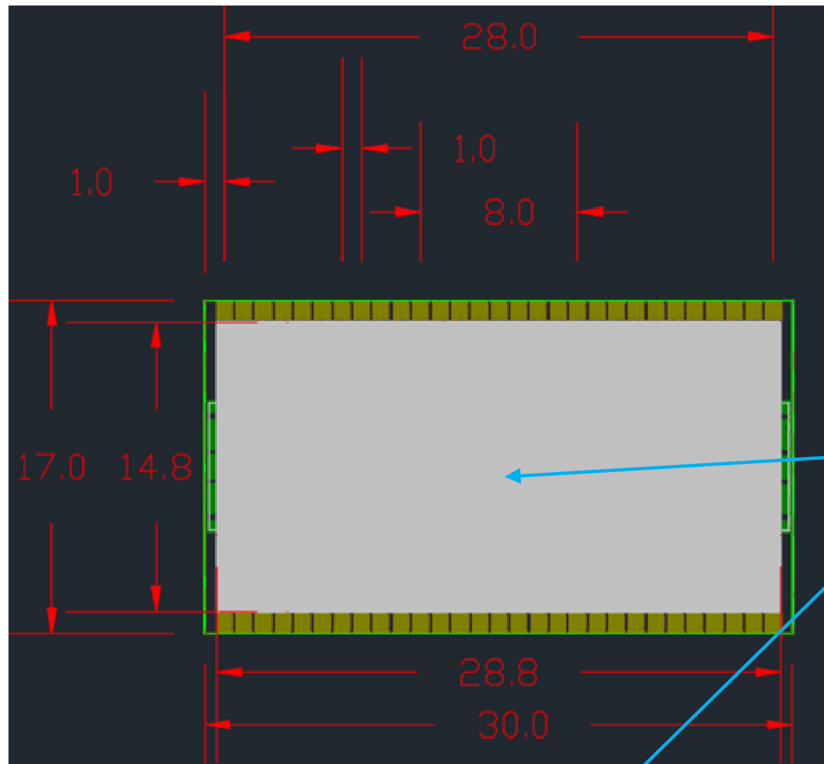
- Temperature fall rate: max 4 °C/s To avoid falling off, the REYAX module should be placed on the topside of the motherboard during soldering.

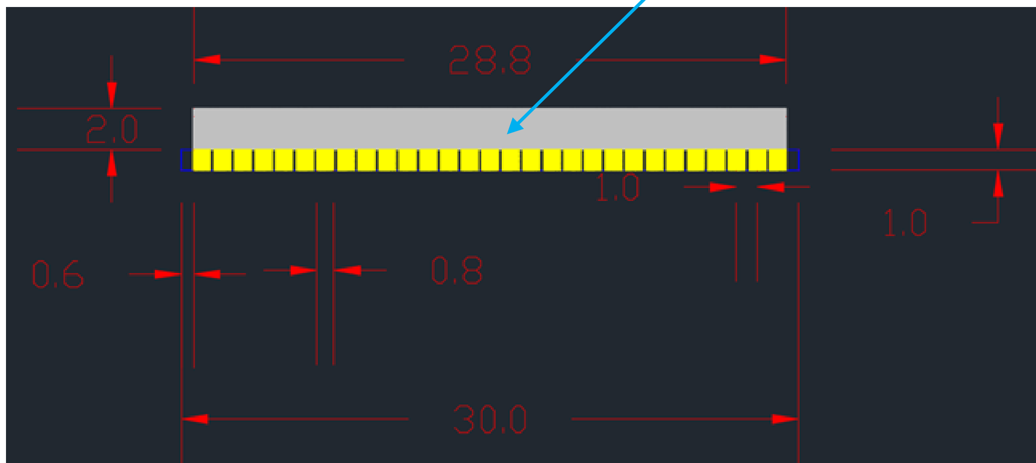


Recommended soldering profile

Copyright © 2024REYAX TECHNOLOGY CO., LTD.

DIMENSIONS

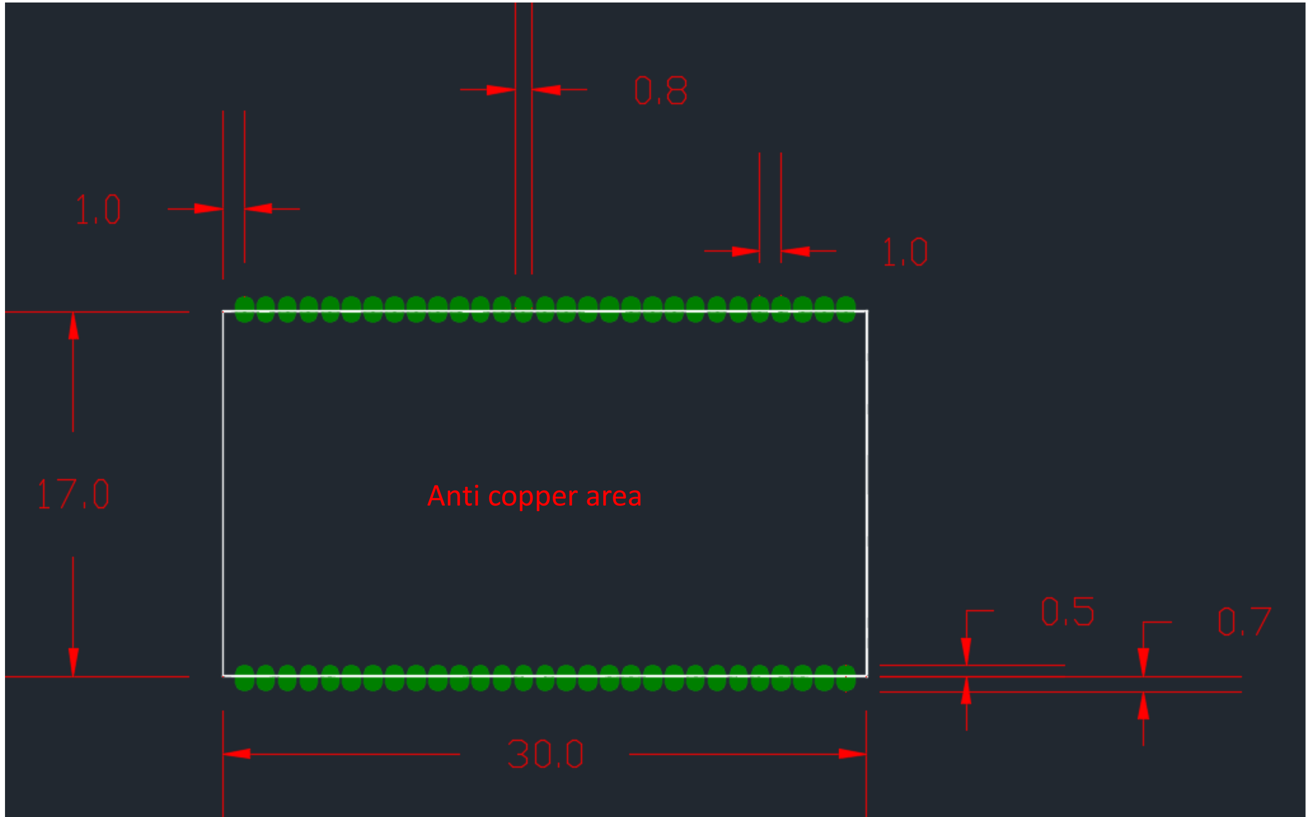




unit : mm

Copyright © 2024REYAX TECHNOLOGY CO., LTD.

LAYOUT FOOTPRINT RECOMMENDATIONS



unit : mm

REYAX
TECHNOLOGY CORPORATION, LTD
E-mail: sales@reyax.com
Website : http://reyax.com

Copyright © 2024REYAX TECHNOLOGY CO., LTD.