



FTY-8188FTV

Module Data sheet



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Website: www.phaten.com

Customer Approval

Company _____

Title _____

Signature _____

Date _____

FTY _____

Version Update Record

Version	Date	Revision Content	Editorialstaff	approval
V1.2	2014/05/05	The first version		
V1.2	2014/05/27	Change package quantity		
V1.2	2014/08/08	Modify the description of Pin10 in Part 8		
V1.2	2015/02/05	Change the running and storage temperature of the module		

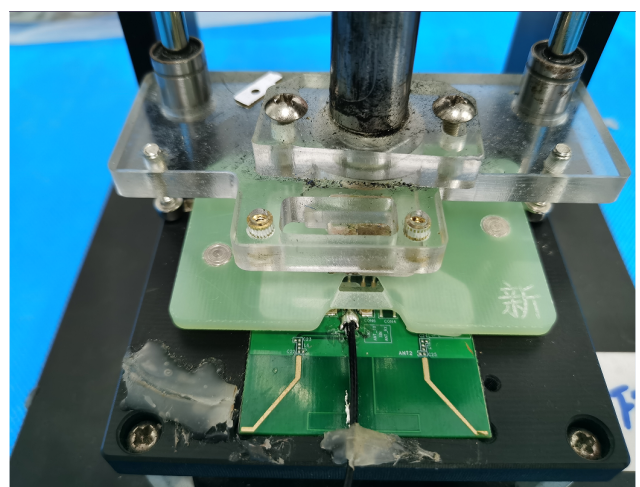
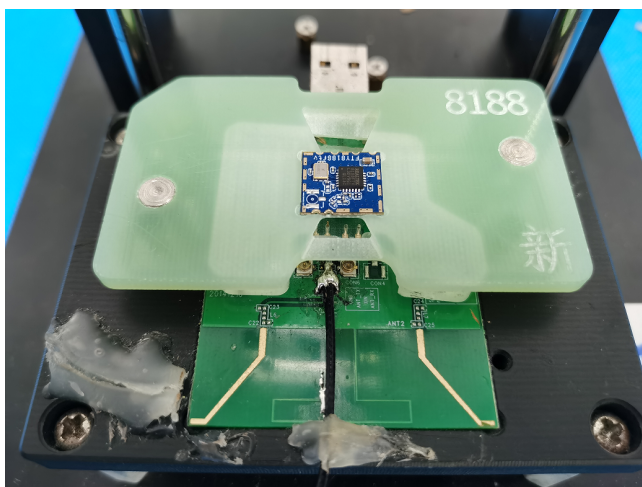
Note:

Manufacturer: Shenzhen Feiteng Cloud Technology Co., LTD

Model Number: FTY-WIFI-55

Product name: Test fixture

Installation instructions: Place the module in the groove corresponding to the fixture and press it so that the module is in good contact with the thimble on the fixture.



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1 Overview

1.1 Introduction

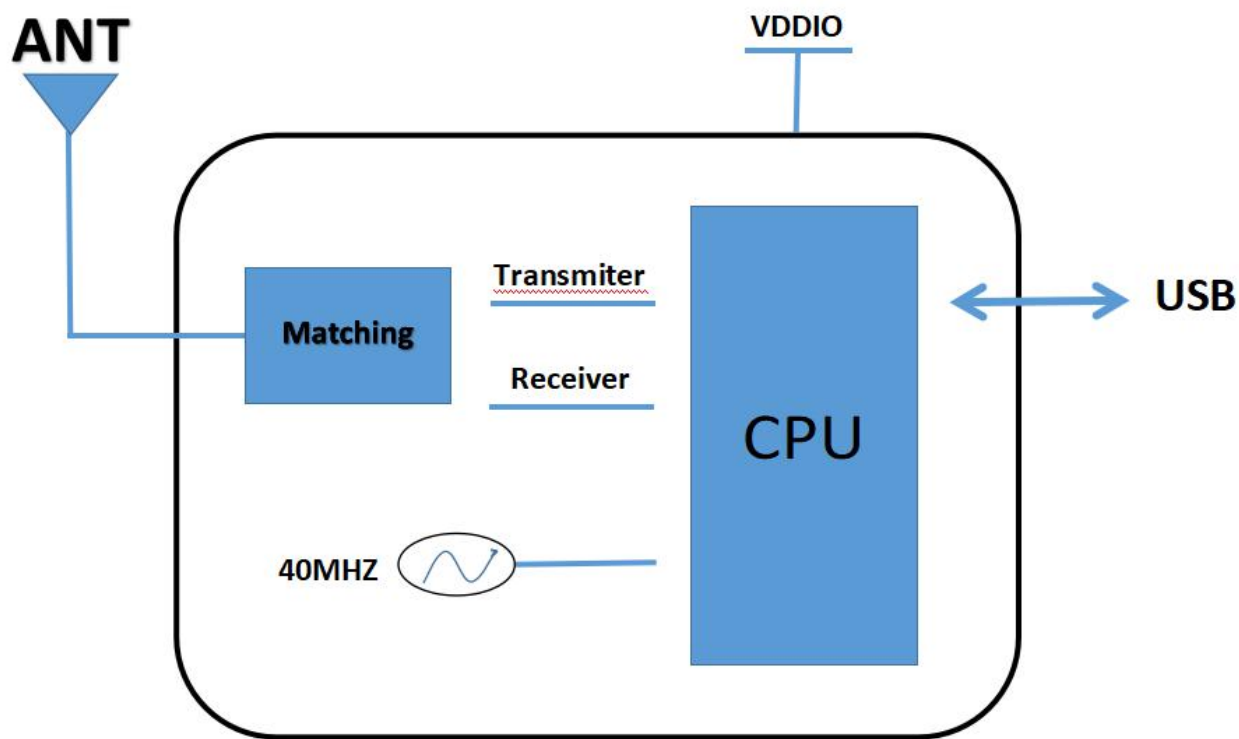
FTY-RM01-FTV is a WLAN 11n USB module, which fully supports the features and Functional compliance of IEEE 802.11n,e and i standards. It supports up to 150Mbps high-speed wireless network connections.

It is designed to provide excellent performance with low power Consumption and enhance the advantages of robust system and cost-effective. It is targeted at competitive superior performance, better power Management applications.

1.2 Features

- Operates in 2.4 GHz frequency bands
- 1x1 technology improves effective throughput and range existing 802.11 b/g products
- Data rates: up to 150Mbps
- 802.11e-compatible bursting and I standards
- BPSK, QPSK, 16 QAM, 64 QAM modulation schemes
- WEP, TKIP, and AES, WPA, WPA2 hardware encryption **schemes**

1.3 Block Diagram



1.4 General Specification

Model Name	FTY-8188FTV
Product Description	Support WIFI:IEEE802.1111b/g/n
Dimension	L x W x H: 12.2 x 12.9 x1.6mm ±0.2MM
Wi-Fi Interface	Support USB2.0
BT interface	N/C
Operating temperature	0 to +60° C
Storage temperature	-20°C to 70°C
RoHS	All hardware components are fully compliant with EU RoHS directive

1.5 DC Characteristics

Power Supply Characteristics

Symbol	Parameter	Minimum	Typical	Maximum	Units
VDD33	3.3V Supply Voltage	3.0	3.3	3.6	V
VDD12	1.2V Core Supply Voltage	1.10	1.20	1.32	V
IDD33	3.3V Rating Current	/	/	600	mA

The module is limited to OEM installation only.

The OEM integrator is responsible for ensuring that the end-user has no manual instruction to remove or install module.

This module should be installed and operated with a minimum distance 20cm between the radiator and your body. OEM integrator shall equipped the antenna to compliance with antenna requirement part 15.203& 15.204 and must not be co-located or operating in conjunction with any other antenna or transmitters. And OEM host shall implement a Class II Permissive Change (C2PC) or a new FCC ID to demonstrate complied with FCC standard.

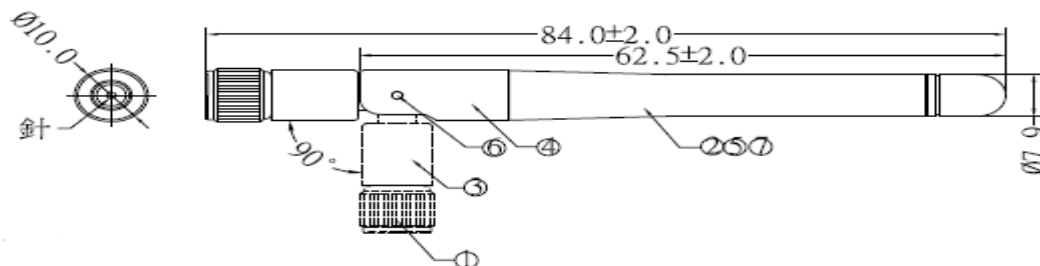
The OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed.

This module support 2.4G WLAN 2412-2462MHz which compliance with part 15.247.

The final end product must be labelled in a visible area with the following:
“Contains Transmitter Module “2A3AKFTY8188FTV”

Antenna:

1. Size(mm)



PROVIDER: Dongguan chuancheng Electronics Co., LTD
PART NAME: External antenna
SPEC: wifi 2412-2462MHz
Gain: 0dBi
connector :RP-SMA

2 RF Specifications

Features	Description
WLAN Standard	WLAN 11b/g/n
Frequency Range	2.412 ~ 2.462 GHz
Data Transfer Rate	1,2,5.5,6,11,12,18,22,24,30,36,48,54,60,90,120 and maximum of 150Mbps
Modulation Method	DSSS,DBPSK, DQPSK, CCK and OFDM (BPSK/QPSK/16-QAM/64-QAM)
Number of Channel	WiFi 2.4GHz: 11: (Ch. 1-11) – United States; 13: (Ch. 1-13) –Europe ; 14: (Ch. 1-14) – Japan
OS Support	Windows 2000,XP32-64,Vista 32/64,Win7 32/64, Linux,Mac, Android,WIN CE

2.4G Transmitter Specifications

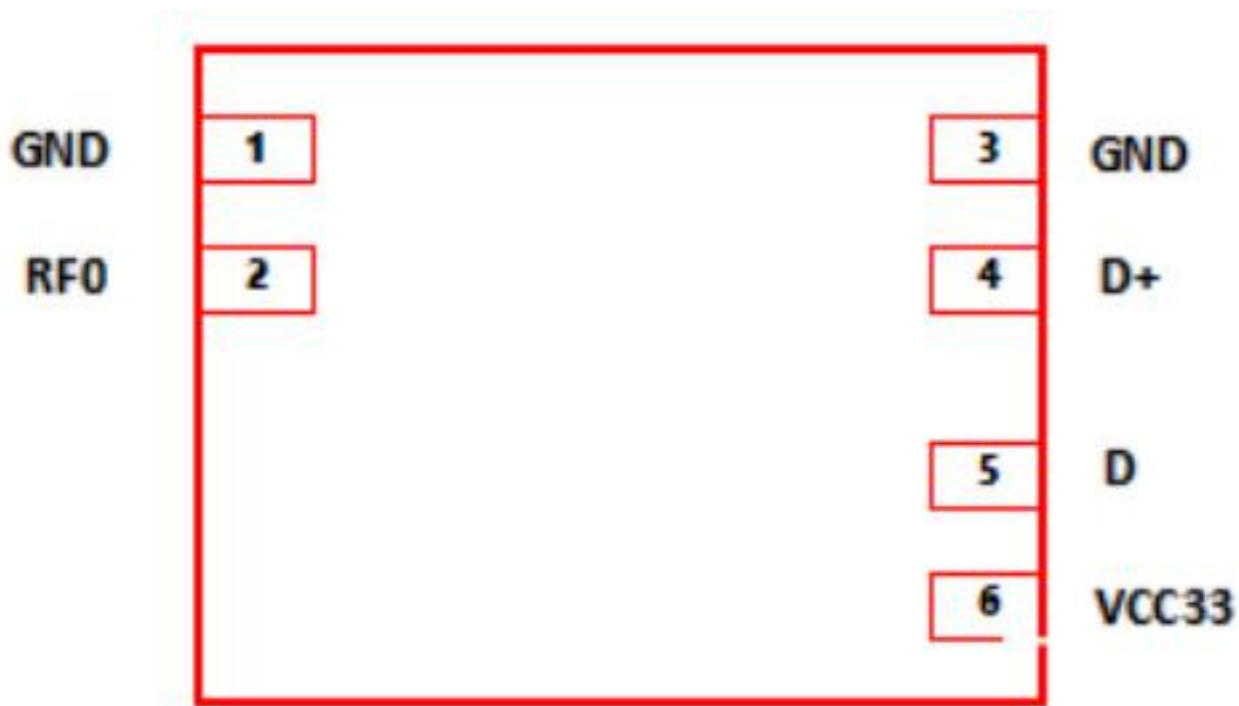
TX Rate	TX Power	TX Power Tolerance	EVM
802.11b @ 11 Mbps	14dBm	±2dBm	≤-18dB
802.11g@54Mbps	12dBm	±2dBm	≤-28dB
802.11n@BW20_MC S7	15dBm	±2dBm	≤-28dB
802.11n@BW40_MC S7	14dBm	±2dBm	≤-28dB

2.4G Receiver Specifications

RX Rate	Min Input Level(Typ)	Max Input Level(Typ)	PER
802.11b @ 11 Mbps	-85dBm	-85dBm	8%
802.11g@54Mbps	-70dBm	-70dBm	10%
802.11n@BW20_MC S7	-65dBm	-65dBm	10%
802.11n@BW40_MC S7	-65dBm	-65dBm	10%

3 Pin Assignments

3.1 Pin Outline

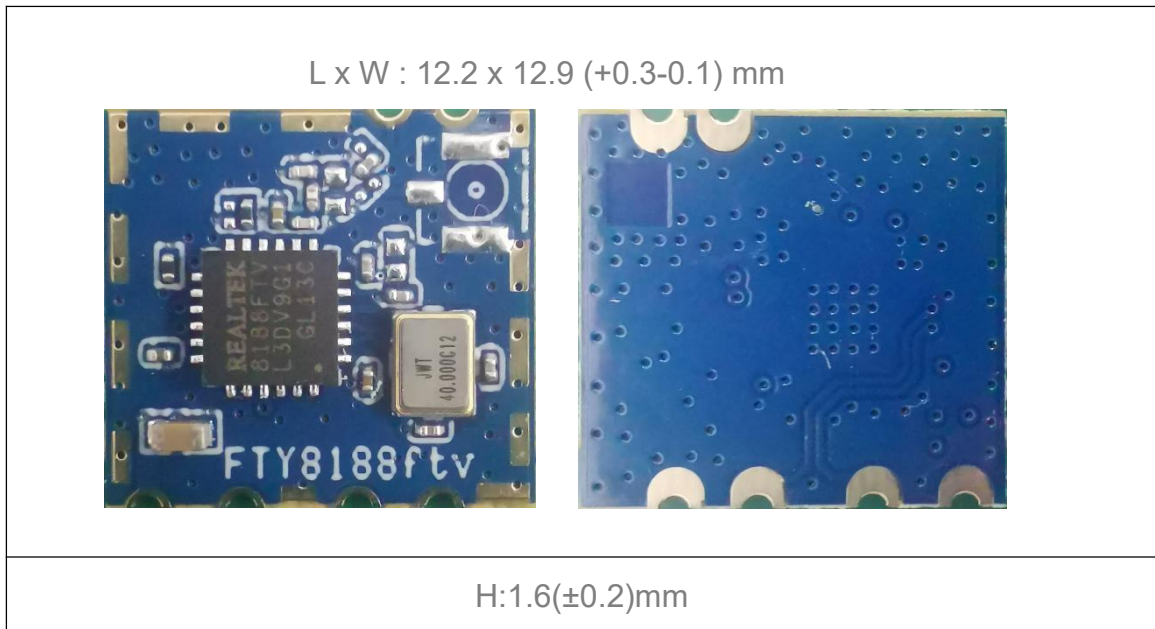


3.2 Pin Definition

Pin	Definition	Description
1	GND	Grond
2	RF0	WLAN RF TX/RX signal0
3	GND	Grond
4	D+	High-Speed USB D+ Signal
5	D-	High-Speed USB D- Signal
6	VCC33	VDD3.3V for Digital IO

4 Dimensions

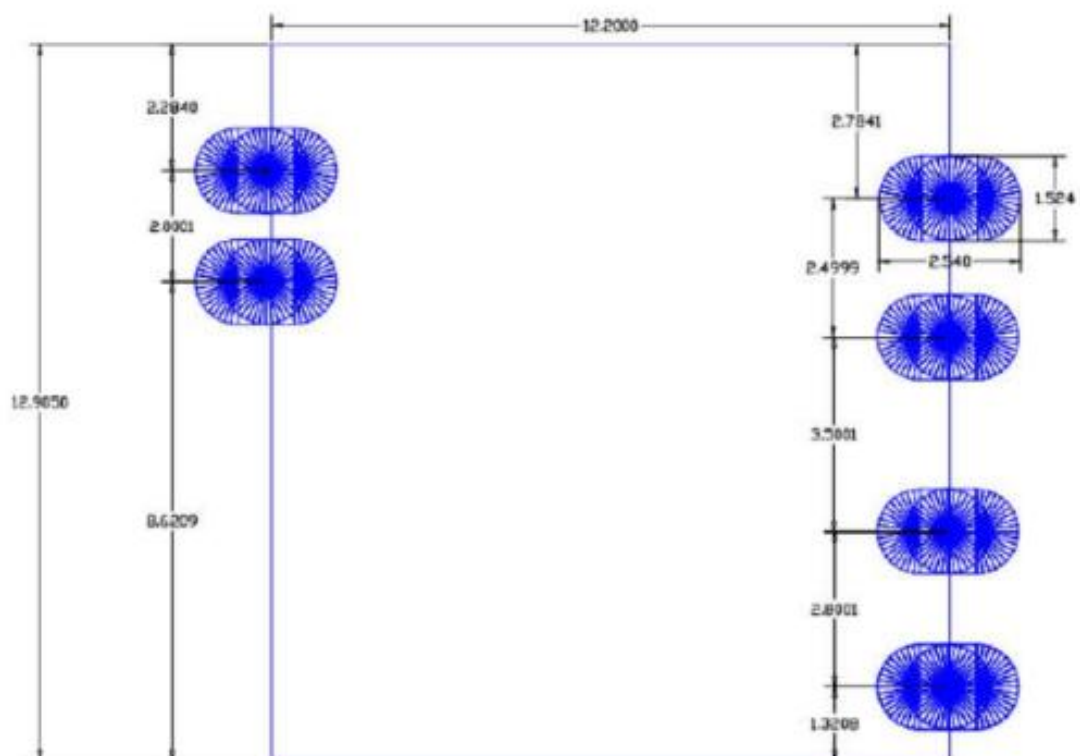
4.1 Module Picture



4.2 Module Physical Dimensions

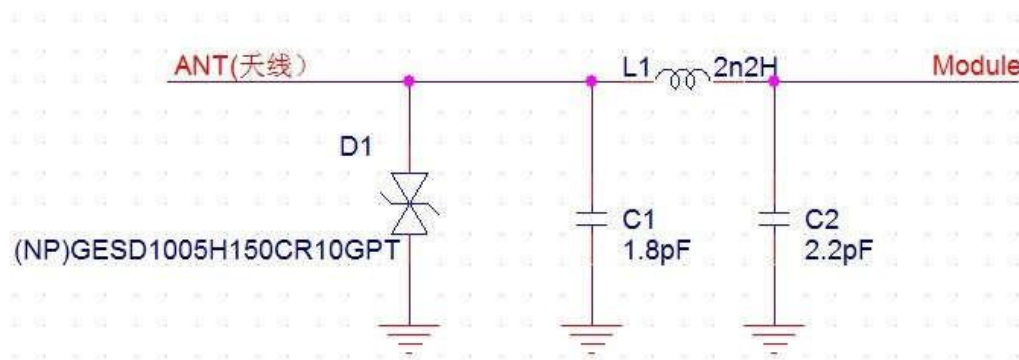
(Unit: mm)

< TOP VIEW >



5 Reference Design

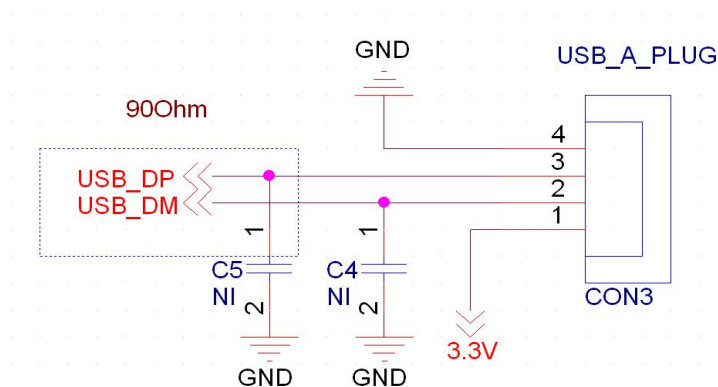
5.1 WIFI RF Circuit reference pictures



1. Above the dotted box part of the antenna matching is needed, the actual antenna matching electronic parameters shall prevail.
2. For RF part layout to do 50 ohm impedance. can't go on 90° of layout .The line length can't more than 20 mm.

Note: Please be sure to add a TVS tube at the end of the welding antenna to prevent ESD static electricity from damaging the WIFI module (as shown in the reference circuit above).

5.2 USB interface electrical characteristics



Note:

- 1.USB data cable need to do 90Ohm impedance
- 2.It is recommended to keep a power switch at the input end of the power supply. Each time the card is opened or closed, it can be used for power on and power off. WIFI can be reset, so that there will be no error phenomenon of not opening WIFI.

6 The Key Material List

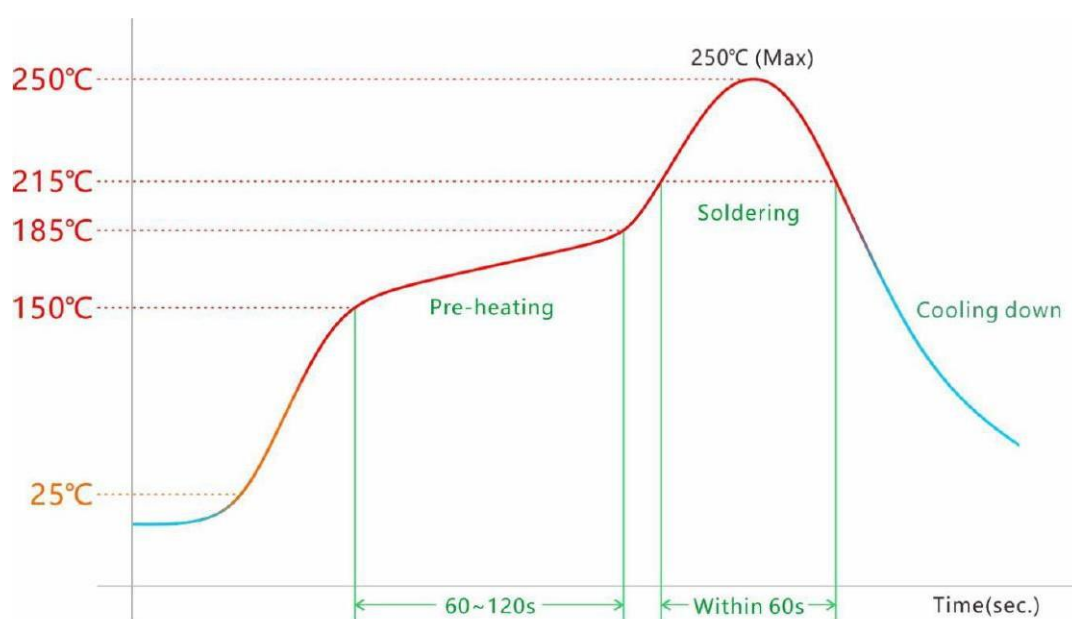
No.	Parts	Specification	Manufacturer	Note
1	Chipset	RTL8188FTV-VC-CG	Realtek Semiconductor Corp	
2	PCB	FTY-8188FTV_PCB	Shenzhen xiangyu circuit co., LTD	
3	Crystal oscillator	3225 40MHZ 12PF +/-10PPM -20~+85℃	hefei jing wei Electronics Co. Ltd.	
4				

7 Recommended Reflow Profile

Referred to IPC/JEDEC standard.

Peak Temperature : <250° C

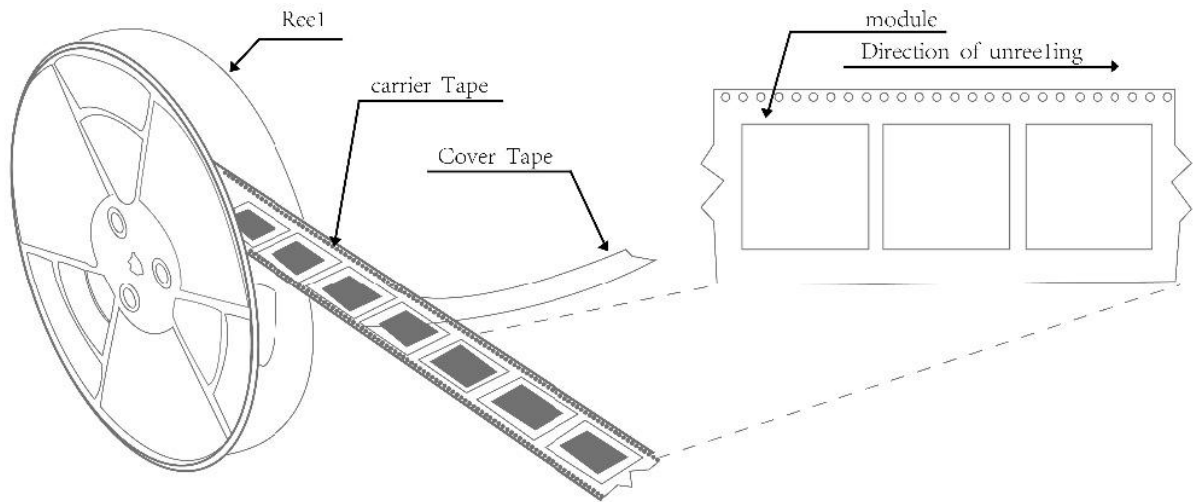
Number of Times : ≤2 times



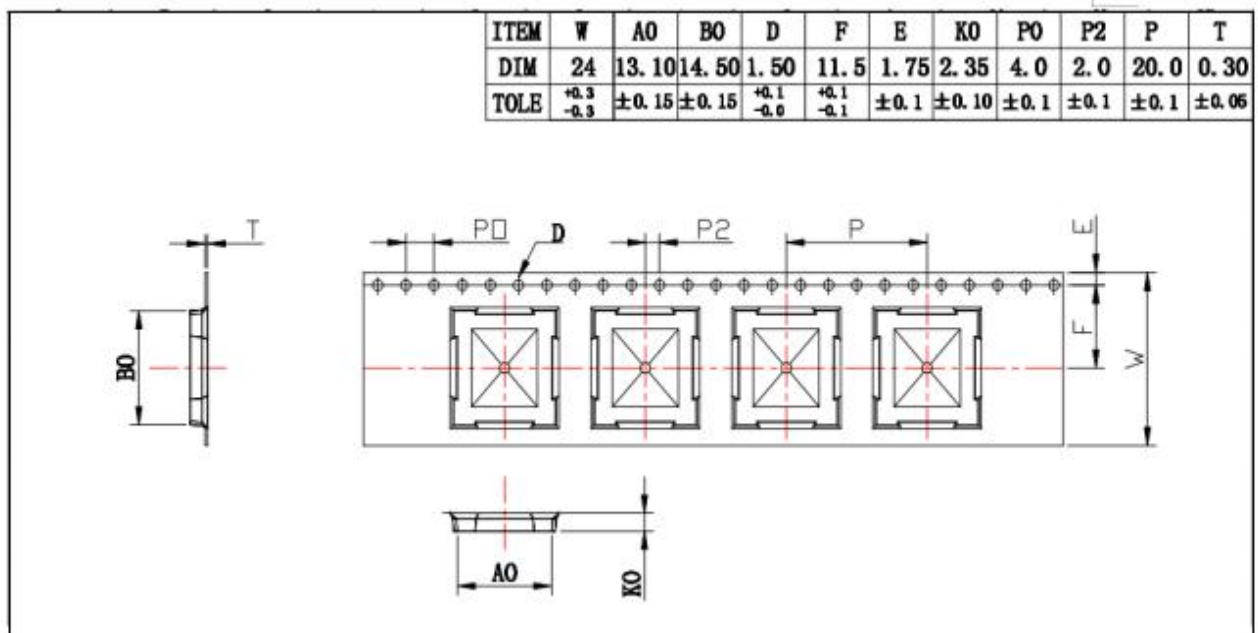
8 Package Information

8.1 Reel

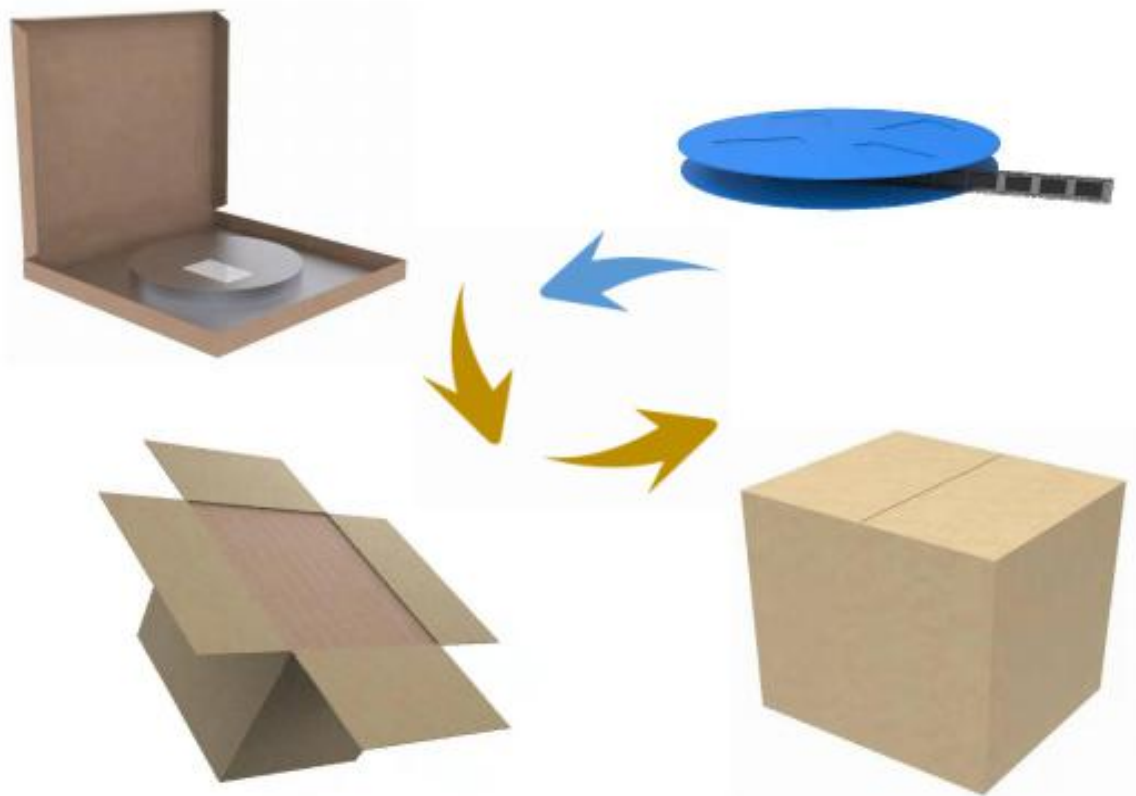
A roll of 2000pcs



8.2 Carrier Tape Detail



8.3 Packaging Detail



8.4 Moisture sensitivity

The Modules is a Moisture Sensitive Device level 3, in according with standard IPC/JEDEC J-STD-020, take care all the relatives requirements for using this kind of components.

Moreover, the customer has to take care of the following conditions:

- Calculated shelf life in sealed bag: 12 months at <40°C and <90% relative humidity (RH).
- Environmental condition during the production: 30°C / 60% RH according to IPC/JEDEC J-STD-033A paragraph 5.
- The maximum time between the opening of the sealed bag and the reflow process must be 168 hours if condition
- "IPC/JEDEC J-STD-033A paragraph 5.2" is respected
- Baking is required if conditions b) or c) are not respected
- Baking is required if the humidity indicator inside the bag indicates 10% RH or more

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.