

深圳市起点通信技术有限公司

UP6158
Module Data sheet

UP6158

Module Data sheet

Customer Approval

Company _____

Title _____

Signature _____

Date _____

FTY _____

Version Update Record

Version approval	Date	Revision Content	Editorial staff
V1.0	2021/08/018	The first version	

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1 Overview

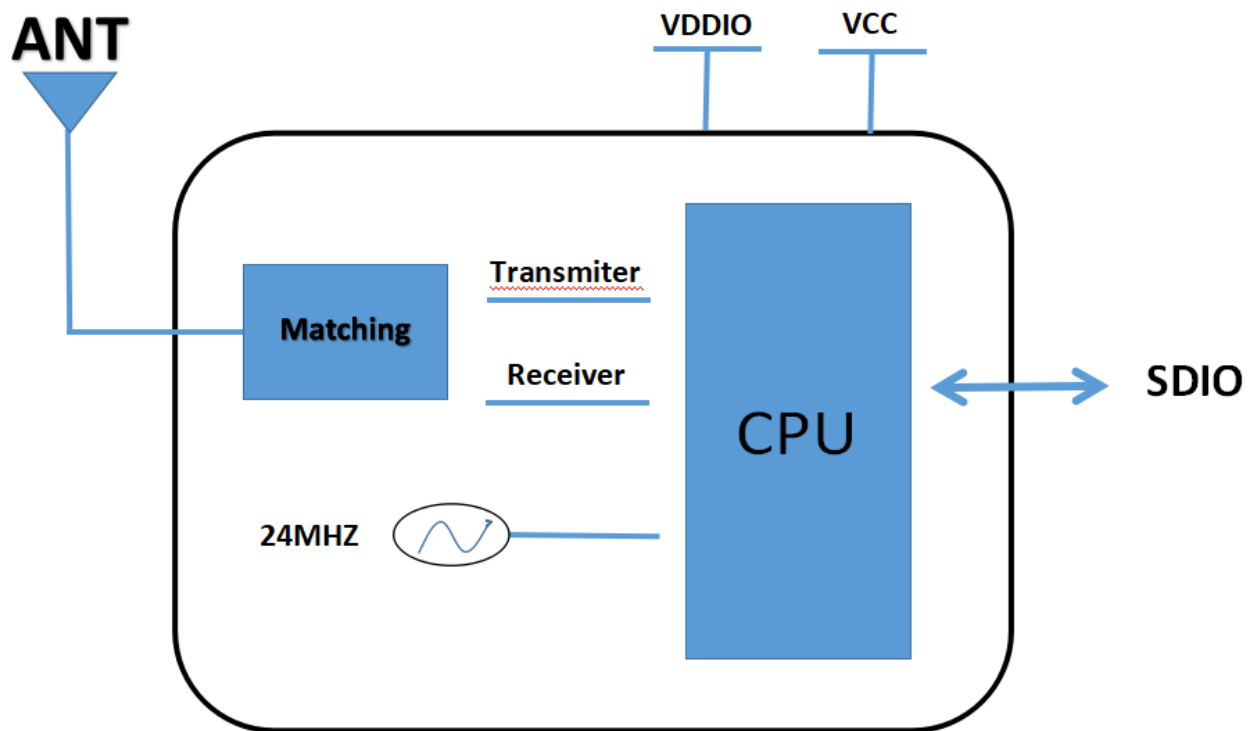
1.1 Introduction

UP6158(hereinafter referred to as the module) adopts the latest low-power single-chip WIFI SV6158 chip design of Southern Silicon Valley, advanced design technology and process technology, and realizes the module's low power consumption and high throughput to communicate with the peripheral through the SDIO interface. It works in the 2.4ghz band and supports 802.11b/g/ N Wireless standards; Using 3.3V single power supply and stamp perforation installation mode, it is widely used in various consumer products such as security mobile Internet equipment set-top box, which can meet the needs of users to the greatest extent

1.2 Features

- Support 2.412GHz-2.484GHz band
- support 802.11b /g/n wireless standard in 2.4GHz band
- support 20 MHz and 40MHz bandwidth
- interface mode :SDIO
- Small size for easy application, the peripheral circuit is simple
- Support STA/AP two working modes
- Low power consumption and high throughput
- Single-frequency 1T1R mode, stable transmission rate up to 150Mbps
- Supply range to 3.1V-3.6V

1.3 Block Diagram



1.4 General Specification

Model Name	UP6158
Product Description	Support WIFI:IEEE802.11b/g/n
Dimension	L x W x H: 12 x 12 (± 0.2) mm
Wi-Fi Interface	Support SDIO
BT interface	N/C
Operating temperature	- 0° C to +85° C
Storage temperature	-40° C to +125° C
RoHS	All hardware components are fully compliant with EU RoHS directive

1.5 DC Characteristics

(a)Power Supply Characteristics

Symbol	Parameter	Minimum	Typical	Maximum	Units
VDD	3.3V Supply Voltage	3.1	3.3	3.6	V
VDDIO	1.8V Core Supply Voltage	1.80	3.0	3.3	V

(b)Dc power consumption

VCC3.3V ,TA=25℃, unit:mA		
model	TX/RX	Current Max
802.11b (11Mbps)	TX	210
	RX	33
802.11g (54Mbps)	TX	162
	RX	32
802.11n HT20 (MCS7)	TX	160
	RX	32
802.11n HT40 (MCS7)	TX	160
	RX	32

2 RF Specifications

Features	Description
WLAN Standard	WLAN 11b/g/n
Frequency Range	2.412 ~ 2.484 GHz
Data Transfer Rate	802.11b: 1, 2, 5.5, 11Mbps 802.11g: 6, 9, 12, 18, 24, 36, 48, 54Mbps 802.11n: MCS0~7, HT20 reach up to 72.2Mbps; HT40 reach up to 150 Mbps
Modulation Method	802.11b: CCK, DQPSK, DBPSK 802.11g: 64-QAM, 16-QAM, QPSK, BPSK 802.11n: 64-QAM, 16-QAM, QPSK, BPSK
Number of Channel	WiFi 2.4GHz: 11: (Ch. 1-11) – United States; 13: (Ch. 1-13) – Europe ; 14: (Ch. 1-14) – Japan
WPA-PSK	WEP/WPA/WPA2/WPA3

2.4G Transmitter Specifications

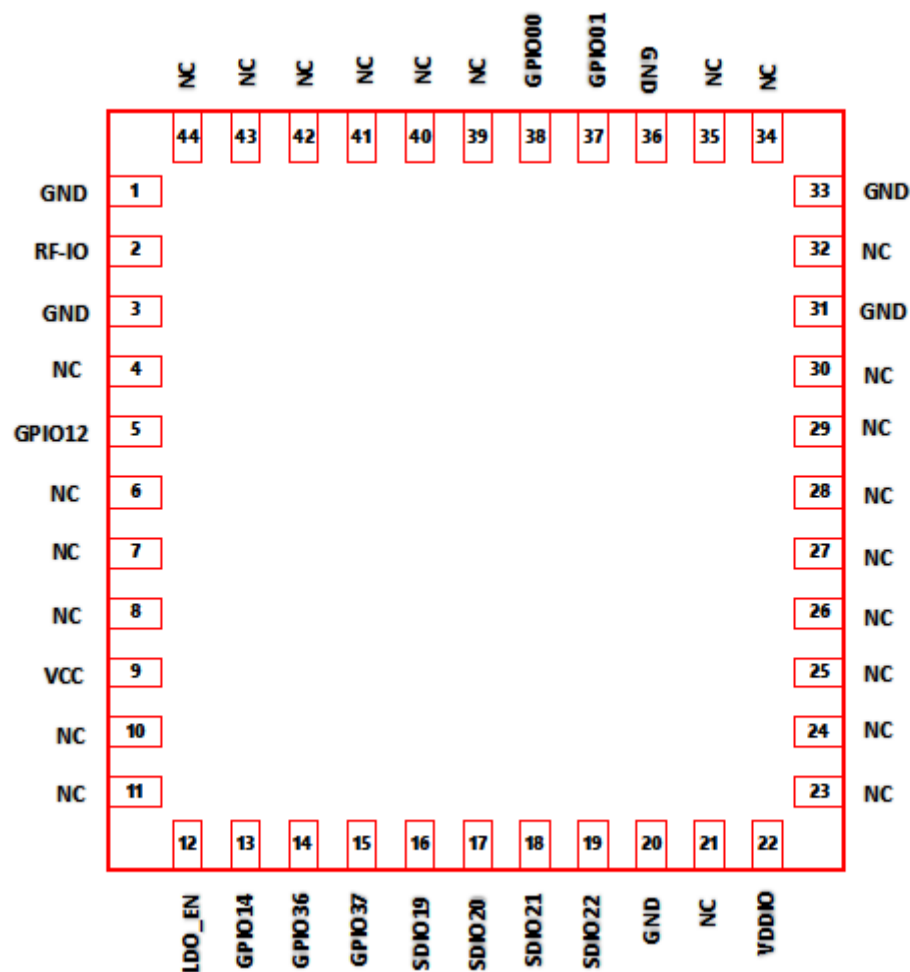
TX Rate	TX Power	TX Power Tolerance	EVM
802.11b @ 11 Mbps	17dBm	±1.5dBm	≤ -15dB
802.11g@54Mbps	15dBm	±1.5dBm	≤ -25dB
802.11n@BW20_MC S7	15dBm	±1.5dBm	≤ -28dB
802.11n@BW40_MC S7	15dBm	±1.5dBm	≤ -28dB

2.4G Receiver Specifications

RX Rate	Min Input Level(Typ)	Max Input Level(Typ)	PER
802.11b @ 1 Mbps	-92dBm	-95dBm	8%
802.11b @ 11 Mbps	-85dBm	-88dBm	8%
802.11g@54Mbps	-70dBm	-74dBm	10%
802.11n@BW20_MC S7	-68dBm	-72dBm	10%
802.11n@BW40_MC S7	-64dBm	-69dBm	10%

3 Pin Assignments

3.1 Pin Outline

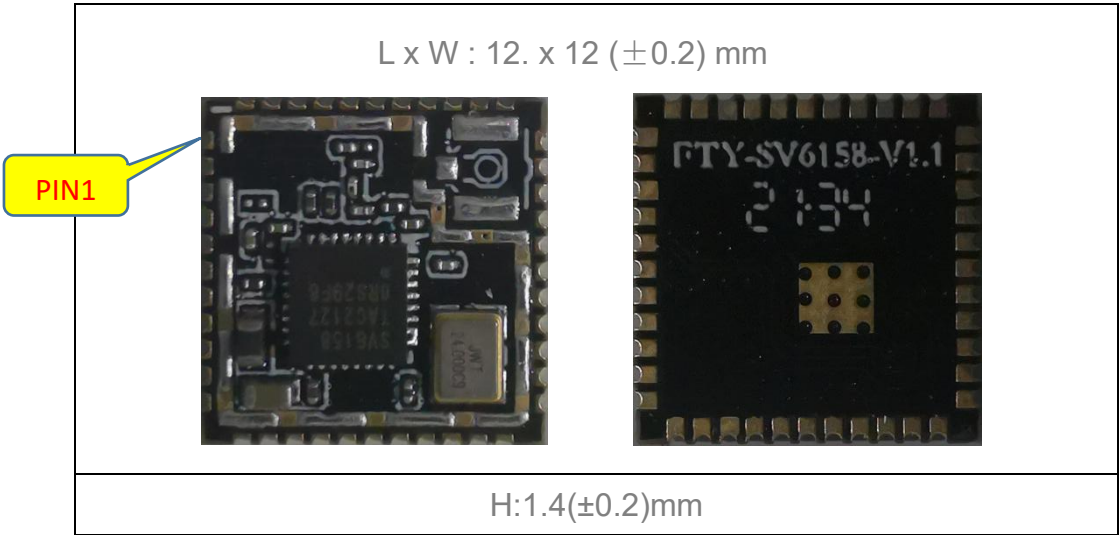


3.2 Pin Definition

PIN	Definition	Description		VCD
1.3.20.31.33.36	GND	Ground		
2	RF-IO	RF port		
4.6.7.8.10.11.21. 23~30.32.34.35.39~44	NC	Floating, Don't connected to ground		
5	GPIO12	0:SDIO mode 1:SPI mode		VDDIO
9	VCC	VDD input , 3.3V		3.3V
12	LDO_EN	Reset, active low		VDDIO
13	GPIO14	WAKE_UP_HOST		VDDIO
14	GPIO36	SD_D2		VDDIO
15	GPIO37	SD_D3	SPI_CSN	VDDIO
16	GPIO19	SD_CMD	SPI_MOSI	VDDIO
17	GPIO20	SD_CLK	SPI_CLK	VDDIO
18	GPIO21	SD_D0	SPI_MISO	VDDIO
19	GPIO22	SD_D1		VDDIO
22	VDDIO	VDD input for GPIO pins		VDDIO
37	GPIO01	UART_LOG_TX Used for debugging only		VDDIO
38	GPIO00	UART_LOG_RX Used for debugging only		VDDIO

4 Dimensions

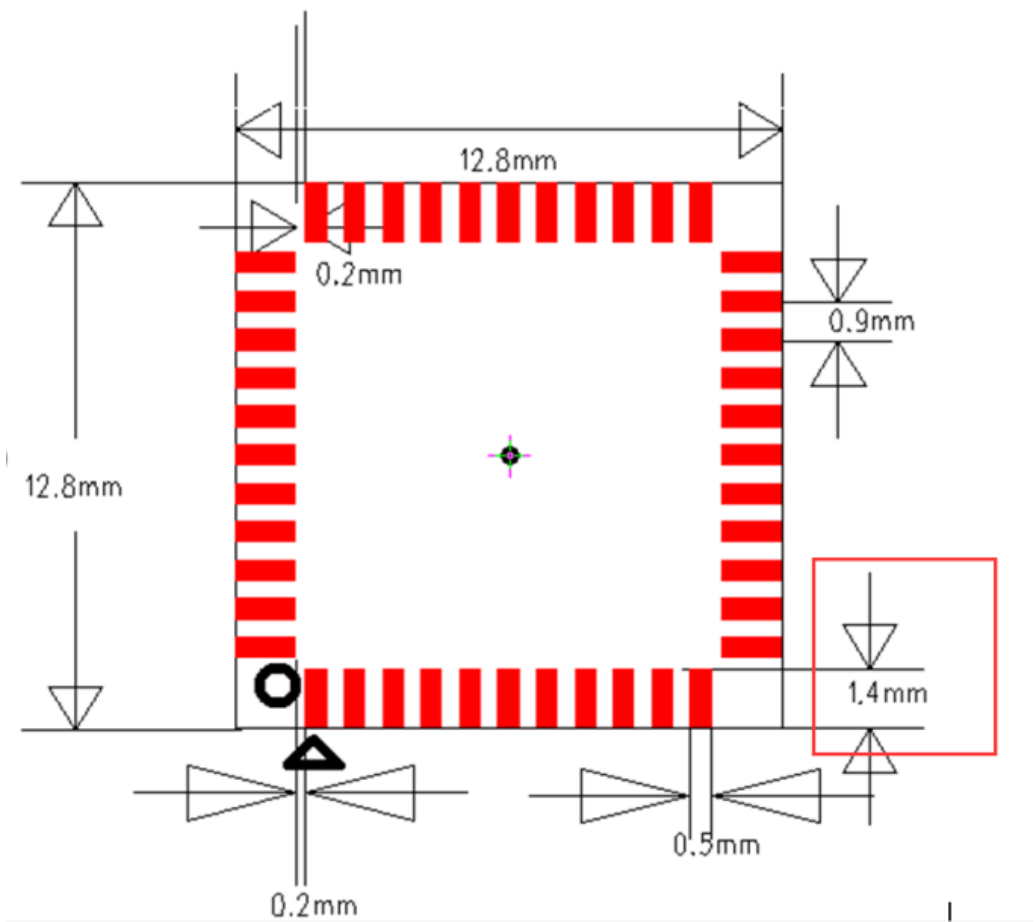
4.1Module Picture



4.2 Module Physical Dimensions

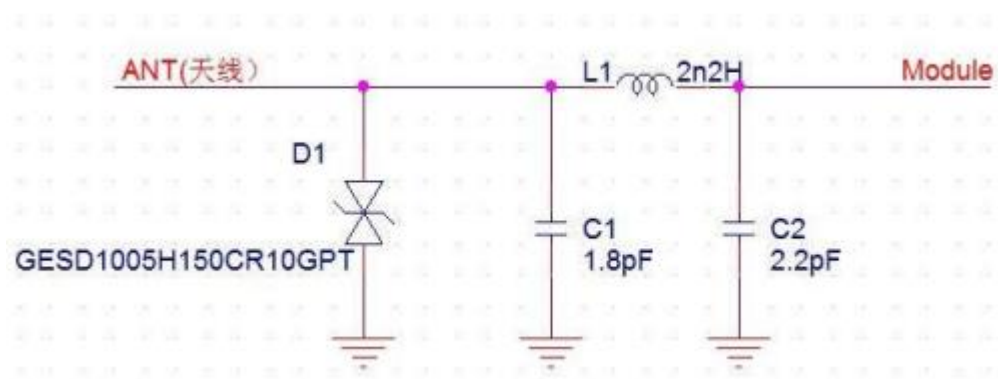
(Unit: mm)

< TOP VIEW >

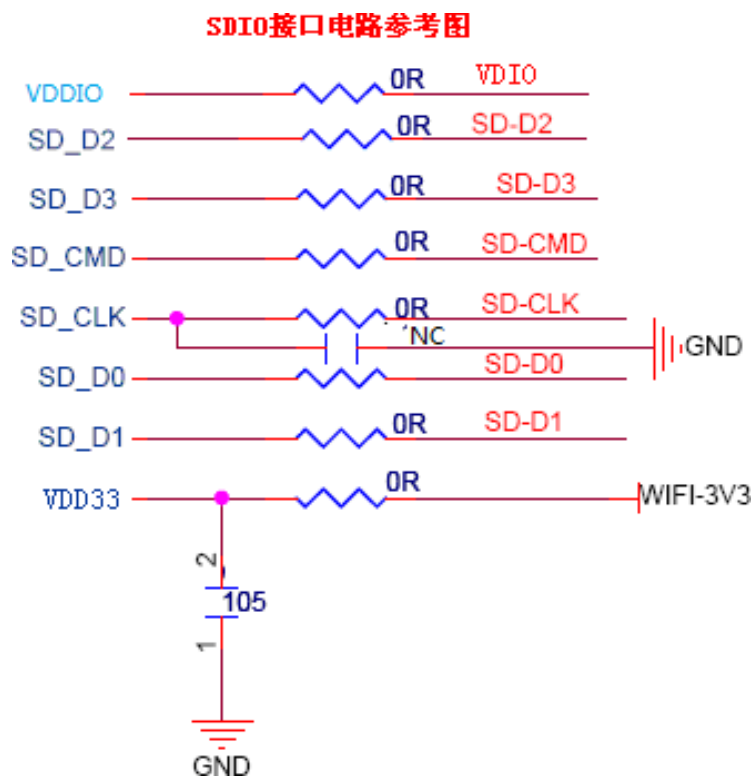


5 Reference Design

5.1 Circuit reference pictures



5.2 SDIO interface Circuit reference pictures



6 The Key Material List

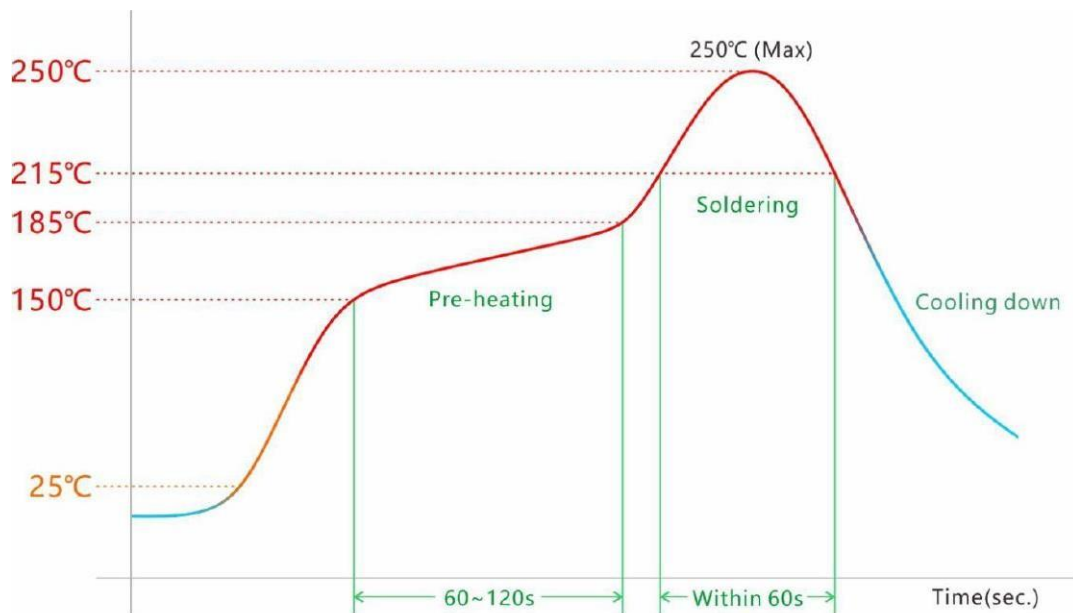
No.	Parts	Specification	Manufacturer	Note
1	Chipset	SV6158 QF32	Southern Silicon Valley Semiconductor Co. LTD	
2	PCB	FTY-SV6158_V1.1	Shenzhen xiangyu circuit co., LTD	
3	PCB	FTY-SV6158_V1.1	Shenzhen Kexiang Precision Circuit Technology Co., LTD	
13, 4, 7	Crystal oscillator	3225 24MHz ±10ppm 9pF Room temperature -40~85°C,	hefei jing wei Electronics Co. Ltd.	
5	Crystal oscillator	3225 24MHz ±10ppm 9pF Room temperature -40~85°C,	ZhejiangLanjingxin Microelectronics Co., LTD.	

7 Recommended Reflow Profile

Referred to IPC/JEDEC standard.

Peak Temperature : $<250^{\circ}\text{C}$

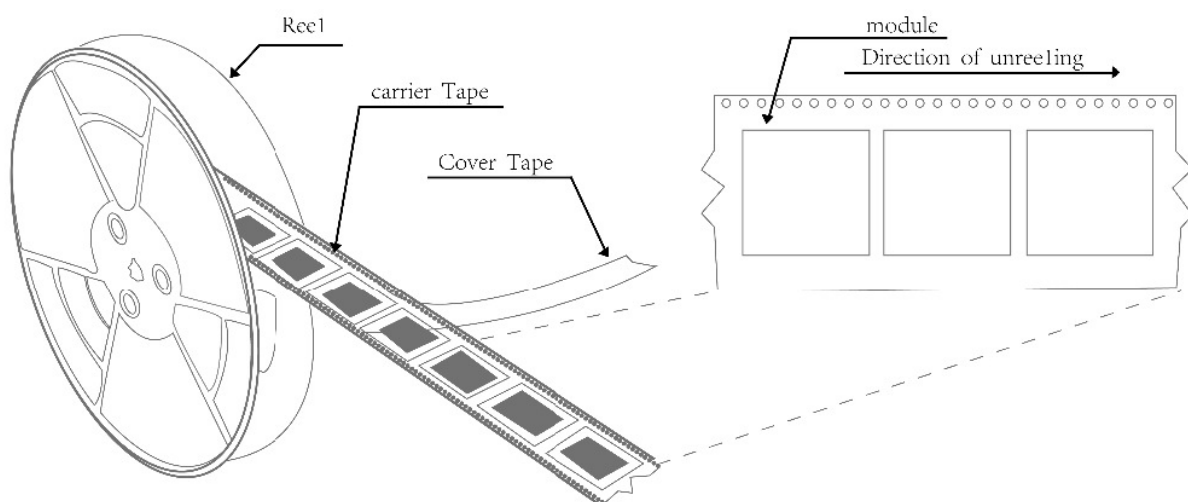
Number of Times : ≤ 2 times



8 Package Information

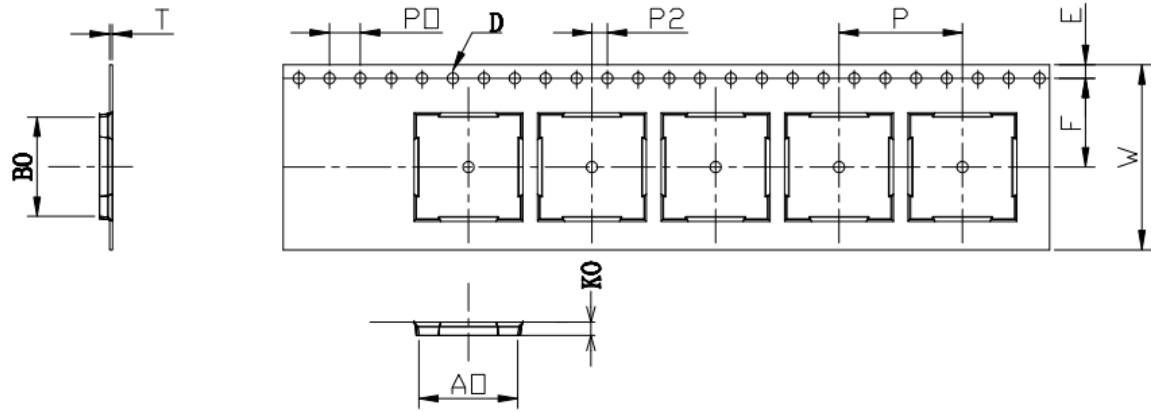
8.1 Reel

A roll of 2000pcs

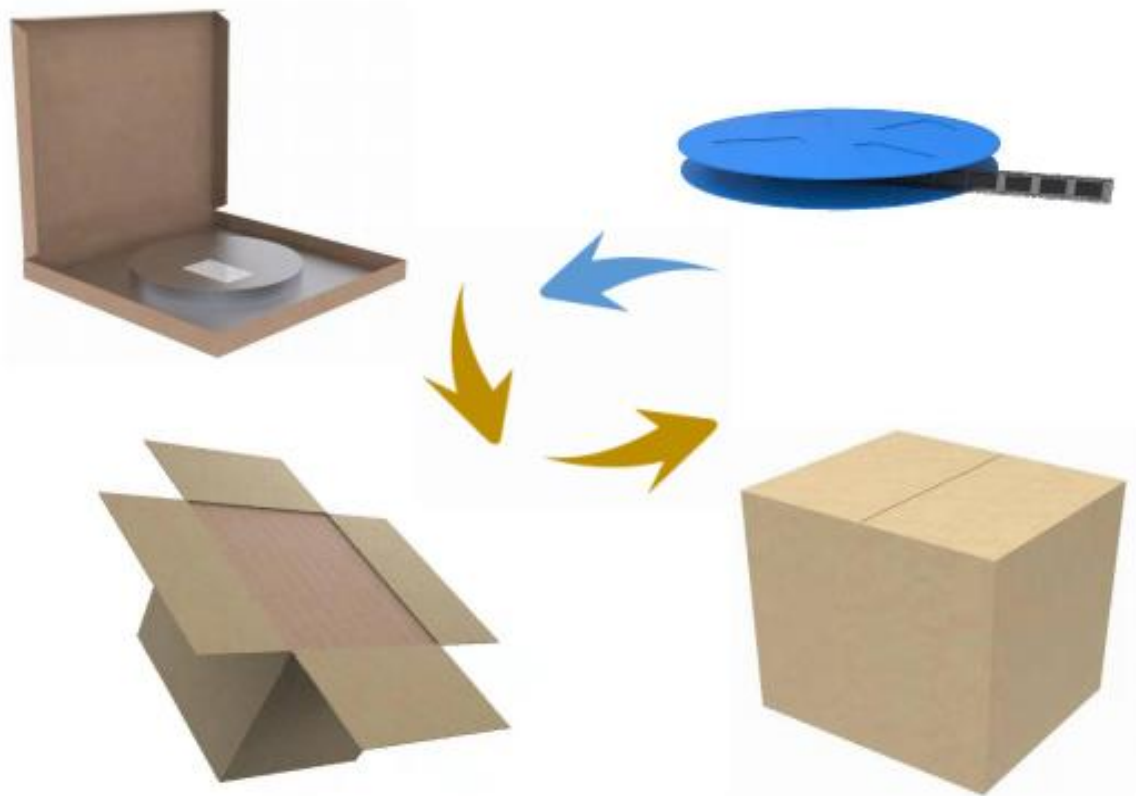


8.2 Carrier Tape Detail

ITEM	W	A0	B0	D	F	E	K0	P0	P2	P	T
DIM	24	12.47	12.47	1.50	11.5	1.75	1.90	4.0	2.0	16.0	0.30
TOLE	$\begin{smallmatrix} +0.3 \\ -0.3 \end{smallmatrix}$	± 0.10	± 0.10	$\begin{smallmatrix} +0.1 \\ -0.0 \end{smallmatrix}$	$\begin{smallmatrix} +0.1 \\ -0.1 \end{smallmatrix}$	± 0.1	± 0.10	± 0.1	± 0.1	± 0.1	± 0.05



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:

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

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