



TAI-SAW TECHNOLOGY CO., LTD.

No. 3, Industrial 2nd Rd., Ping-Chen Industrial District,
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Product Specifications Approval Sheet

Product Description: IF SAW Filter 140 MHz SMD 13.3X6.5 mm (BW=20 MHz)

TST Part No.: TB0431A

Customer Part No.: _____

Customer signature required

Company: _____

Division: _____

Approved by : _____

Date: _____

Checked by: _____ Hayley Chou *Hayley Chou*

Approved by: _____ Andy Yu *Andy Yu*

Date: _____ 2020/04/13

1. Customer signed back is required before TST can proceed with sample build and receive orders.
2. Orders received without customer signed back will be regarded as agreement on the specifications.
3. Any specifications changes must be approved upon by both parties and a new revision of specifications shall be released to reflect the changes.



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SAW Filter 140 MHz

MODEL NO.: TB0431A

REV. NO.: 3.0

A. MAXIMUM RATING:

1. Input Power Level: 15 dBm
2. DC Voltage : 3 V
3. Operating Temperature: -40 °C to +85 °C
4. Storage Temperature: -40 °C to +85 °C
5. Moisture Sensitive Level: Level 1 (MSL1)

RoHS Compliant

Lead-free soldering

Electrostatic Sensitive Device (ESD)

B. ELECTRICAL CHARACTERISTICS:

Item	Unit	Min.	Typ.	Max.
Center Frequency Fc	MHz	-	140	-
Maximum Insertion Loss IL	dB	-	10.8	13
Passband IL ($F_c \pm 10.5$ MHz)	dB	-	11.5	13
1 dB Bandwidth	MHz	-	22.9	-
3 dB Bandwidth	MHz	-	24.0	-
40 dB Bandwidth	MHz	-	28.0	-
Passband Ripple ($F_c \pm 10$ MHz)	dB	-	0.7	1.2
Group Delay Ripple (130~150 MHz)	ns	-	70	200
Group Delay at Fc	μs	-	1.02	2.00
In/Out VSWR	-	-	2.4	-
Phase Ripple ($F_c \pm 10.5$ MHz)	deg	-	6	15
Triple Transient Suppression	dB	-	40	-
Temperature Coefficient	ppm/°C	-	-93	-
Attenuation (Reference level from minimum insertion loss)				
40 ~ 125 MHz	dB	40	47	-
126 MHz	dB	15	52	-
155 ~ 350 MHz	dB	36	39	-
154 MHz	dB	15	35	-
220 ~ 260 MHz	dB	44	55	-

C. FREQUENCY CHARACTERISTIC:

1. S21 Response

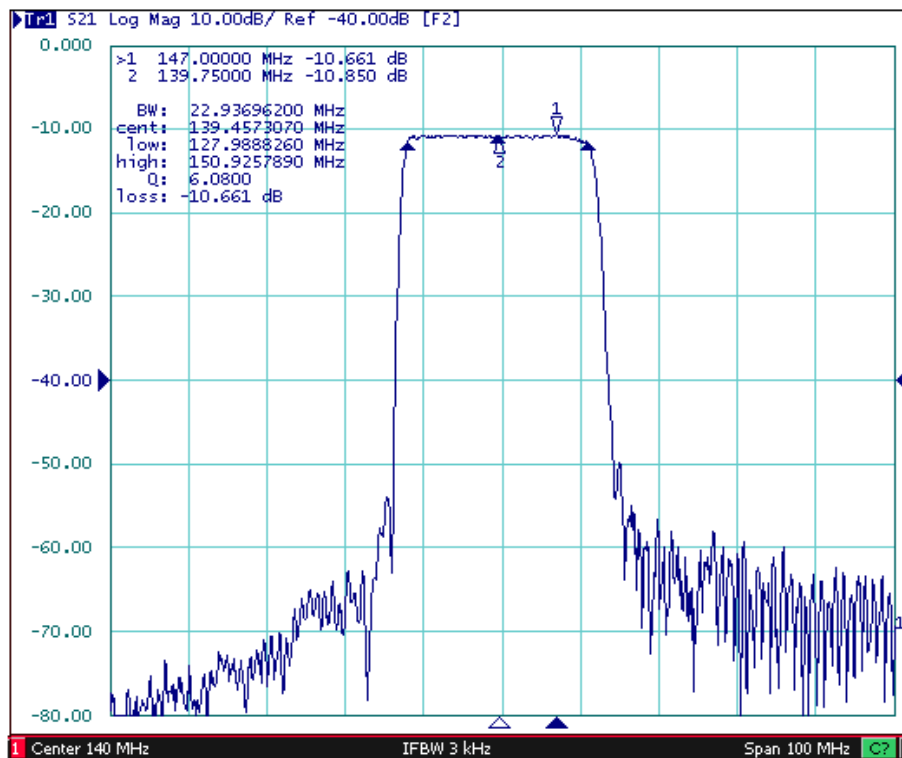


Fig. 1 S21 Response; Horizontal: 10MHz/Div, Vertical: 10dB/Div

2. Pass band Ripple and Group Delay Ripple

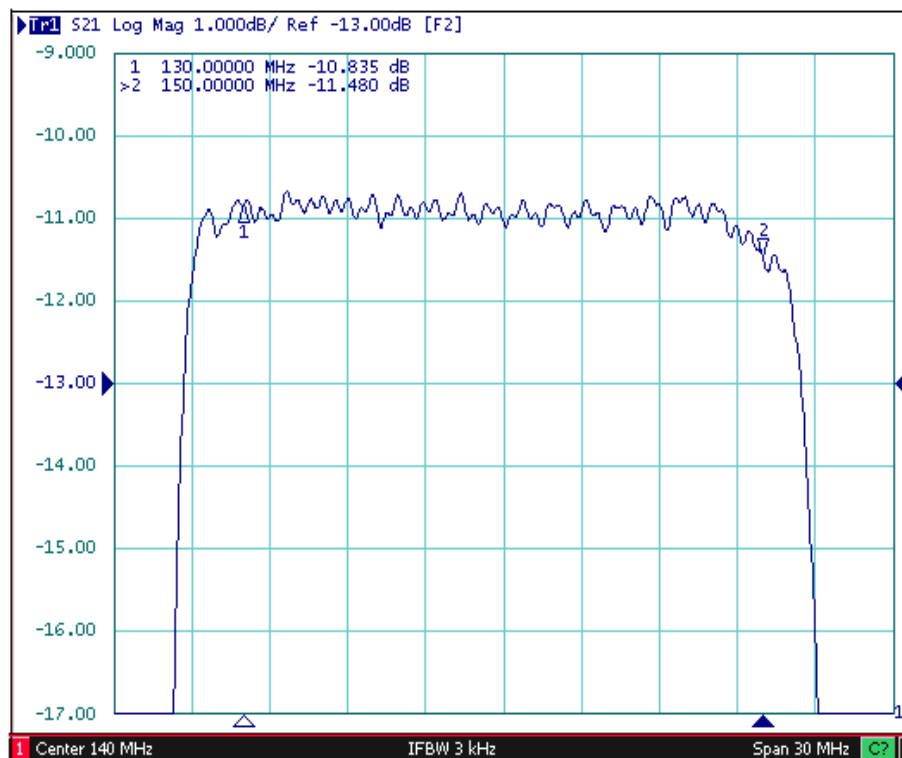


Fig. 2 In band ripple; Horizontal: 3MHz/Div, Vertical: 1dB/Div

3. Group Delay Ripple

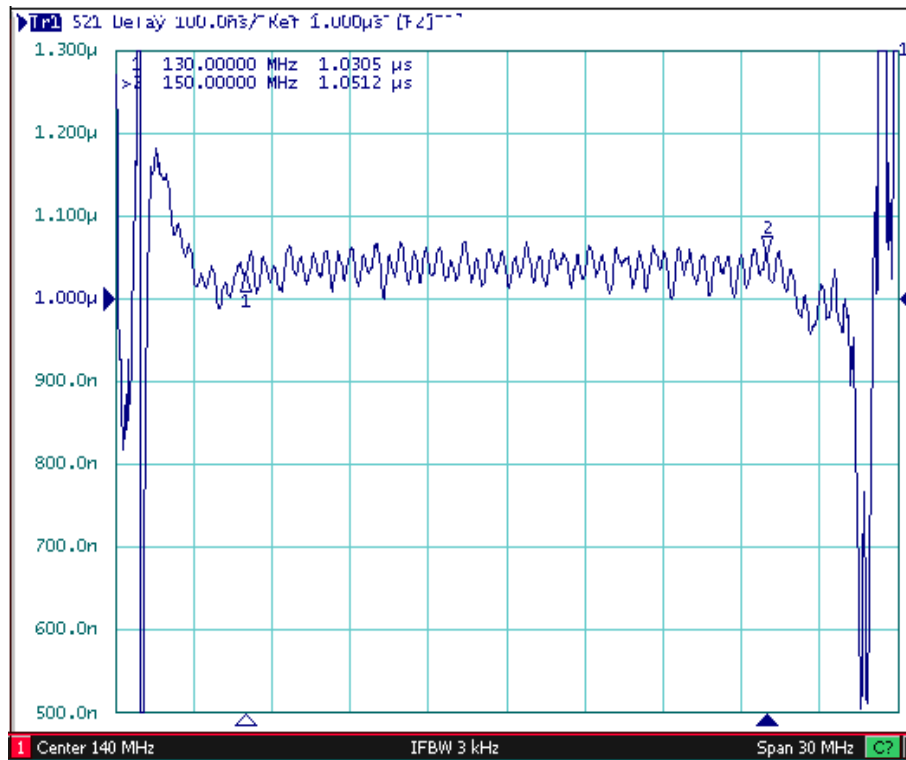


Fig. 3 Group Delay; Horizontal: 3MHz/Div, Vertical: 100ns/Div

4. Phase Ripple

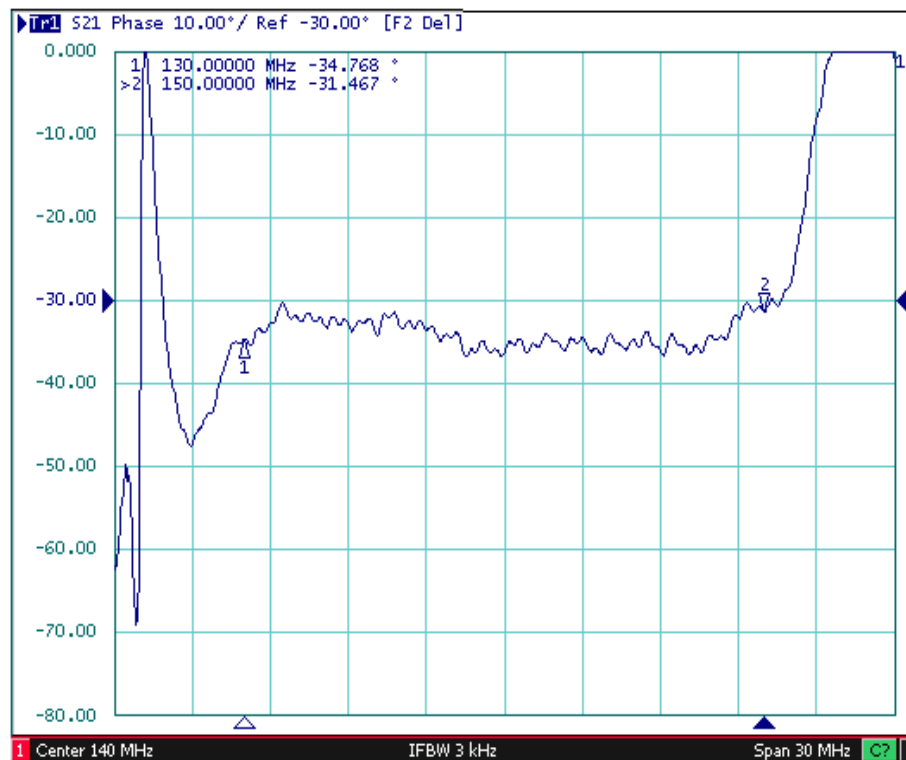


Fig. 4 Phase Ripple; Horizontal: 3MHz/Div, Vertical: 10deg/Div

4. Wide Band Response

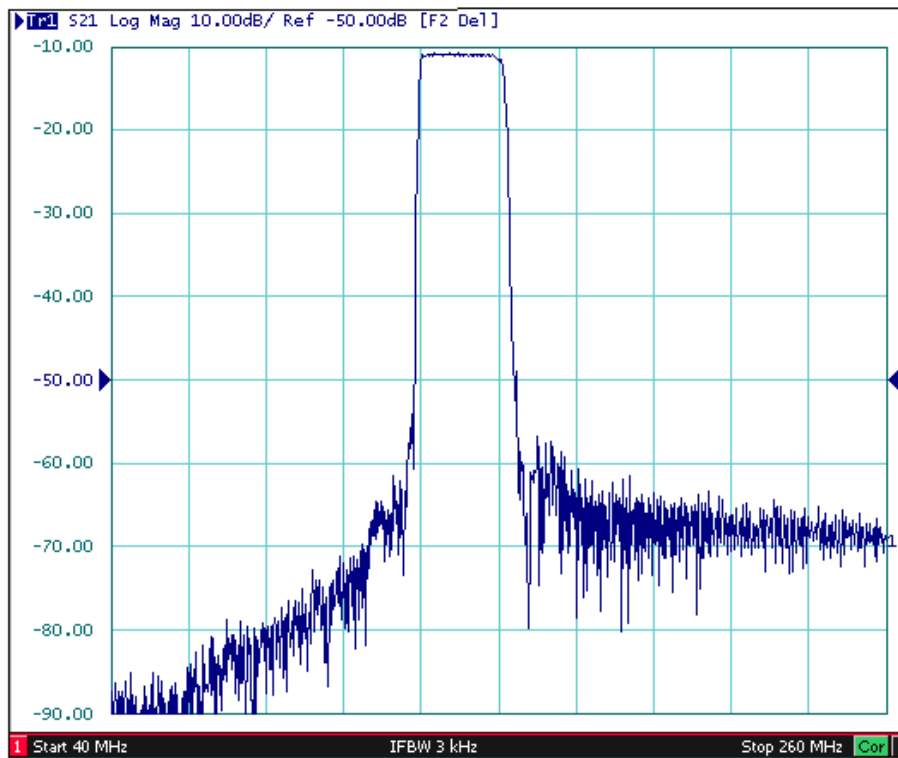
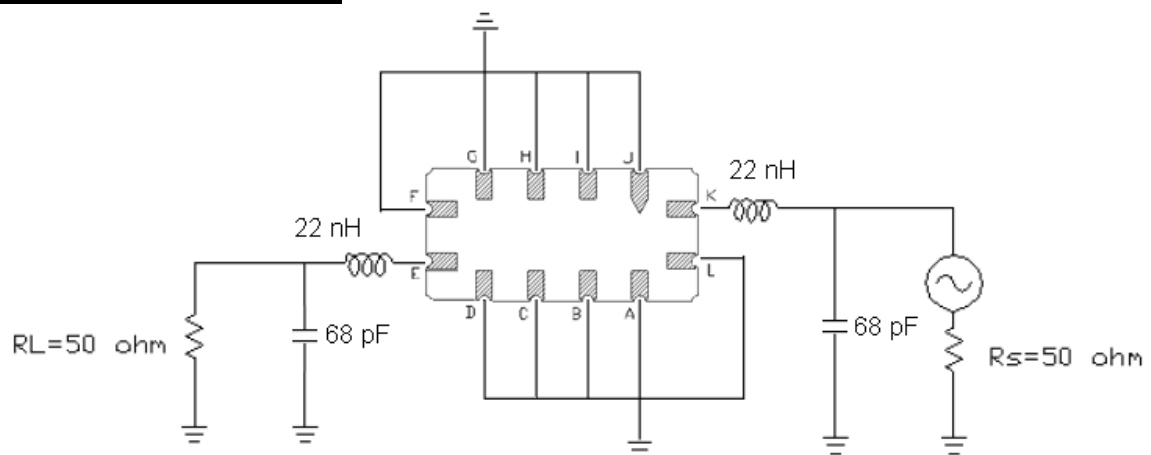
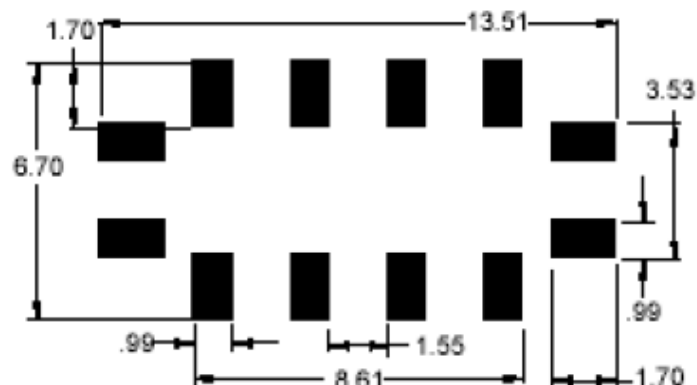


Fig. 5 Wide Band; Horizontal: 40~260MHz, Vertical: 10dB/Div

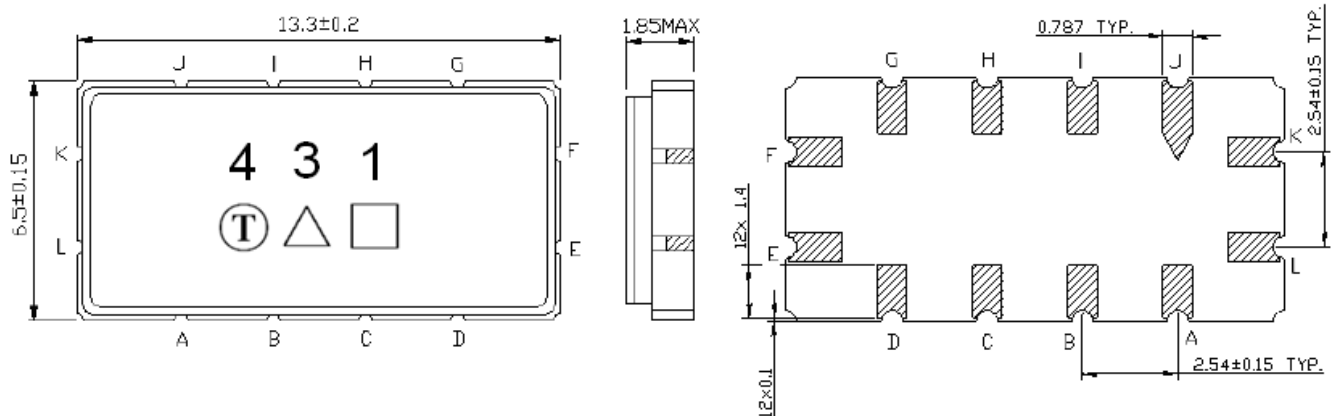
D. MEASUREMENT CIRCUIT:



E. PCB Footprint:



F. OUTLINE DRAWING:



Pin K: RF Input

Pin L: RF Input ground

Pin E: RF Output

Pin F: RF Output ground

Pin A, B, C, D, G, H, I, J: To be ground

Unit: mm

△: Product/Year Code

□: Week Code (Follow the table from planner each year)

Product / Year Code Table:

Year	2013 2017	2014 2018	2015 2019	2016 2020
Product Code	B	b	<u>B</u>	<u>b</u>

This table is four-year cycle (ex: Year 2021, △ will show "B")

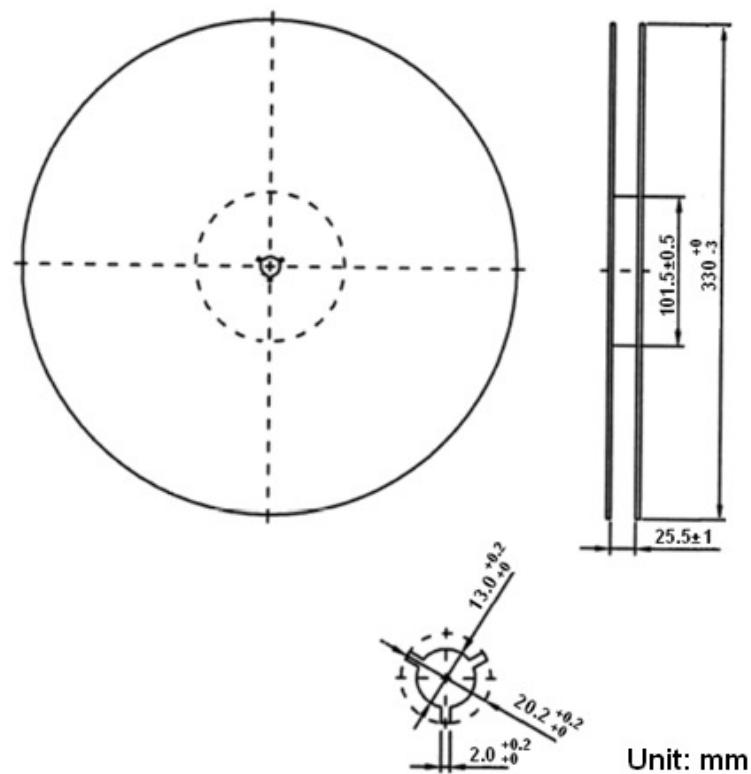
Week Code Table

WK01	WK02	WK03	WK04	WK05	WK06	WK07	WK08	WK09	WK10	WK11	WK12	WK13
A	B	C	D	E	F	G	H	I	J	K	L	M
WK14	WK15	WK16	WK17	WK18	WK19	WK20	WK21	WK22	WK23	WK24	WK25	WK26
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
WK27	WK28	WK29	WK30	WK31	WK32	WK33	WK34	WK35	WK36	WK37	WK38	WK39
a	b	c	d	e	f	g	h	i	j	k	l	m
WK40	WK41	WK42	WK43	WK44	WK45	WK46	WK47	WK48	WK49	WK50	WK51	WK52
n	o	p	q	r	s	t	u	v	w	x	y	z

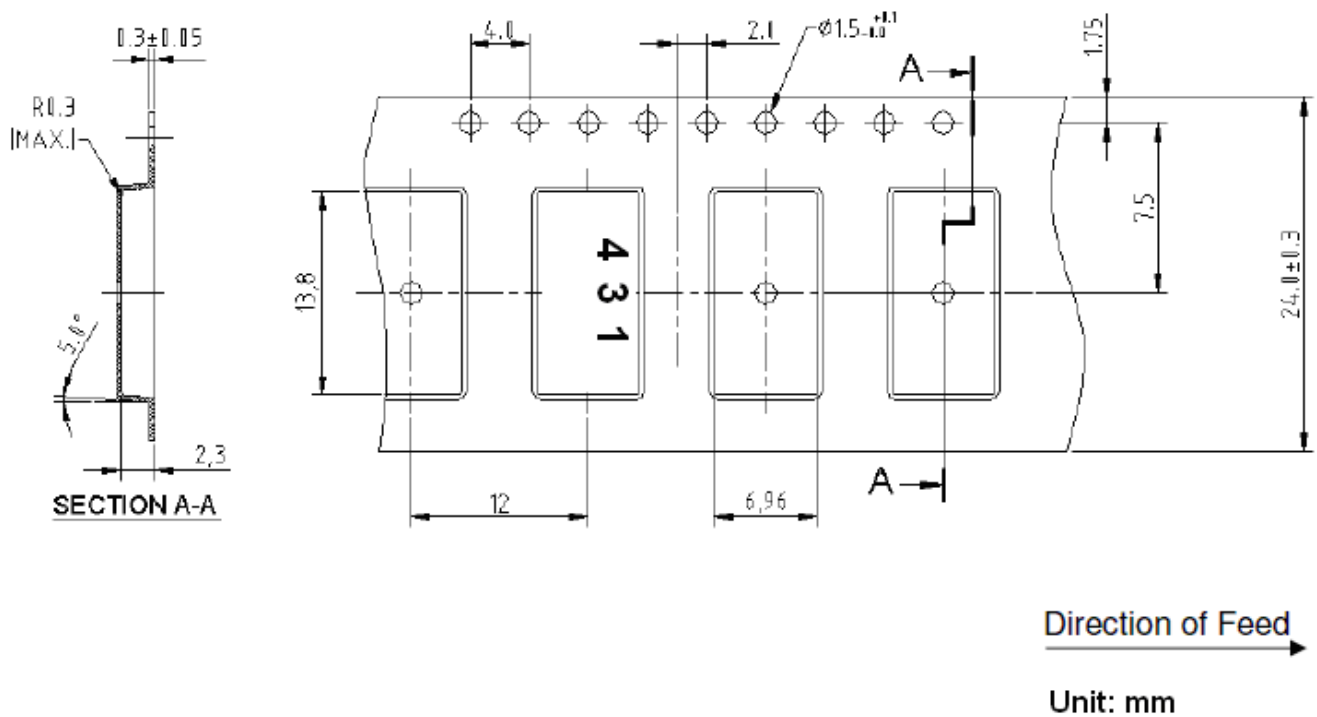
G. PACKING: (Ref: WI-75M03)

1. REEL DIMENSION

(Please refer to FR-75D10 for packing quantity)



2. TAPE DIMENSION



H. Recommended Reflow Profile:

1. Preheating shall be fixed at 150~180°C for 60~90 seconds.
2. Ascending time to preheating temperature 150°C shall be 30 seconds min.
3. Heating shall be fixed at 220°C for 50~80 seconds and at 260°C +0/-5°C peak (20~40sec).
4. Time: 2 times.

