



# TAI-SAW TECHNOLOGY CO., LTD.

No. 3, Industrial 2nd Rd., Ping-Chen Industrial District,  
Taoyuan, 324, Taiwan, R.O.C.

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## Product Specifications Approval Sheet

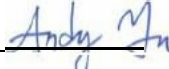
Product Description: 140 MHz 10MHz BW SMD 13.3 x 6.5 mm SAW IF Filter

TST Parts No.: TB0203B

Customer Parts No.: \_\_\_\_\_

Customer signature required
Company: _____
Division: _____
Approved by : _____
Date: _____

Checked by: \_\_\_\_\_ V.J Fanchi 

Approval by: \_\_\_\_\_ Andy 

Date: \_\_\_\_\_ 02 / 17 / 2017

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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Low-Loss 140 MHz IF SAW Filter (SMD 13.3×6.5 mm)

Model No.: TB0203B

Rev. No.:2.0

## A. Maximum Rating:

RoHS Compliant  
Lead free  
Lead-free soldering

1. Input Power Level: +20 dB<sub>m</sub>
2. Operating Temperature: -55 C to +85 C
3. Storage Temperature: -55 C to +85 C

**Electrostatic Sensitive Device**

## B. Electrical Characteristics:

Operating Temperature: -55 C to +85 C

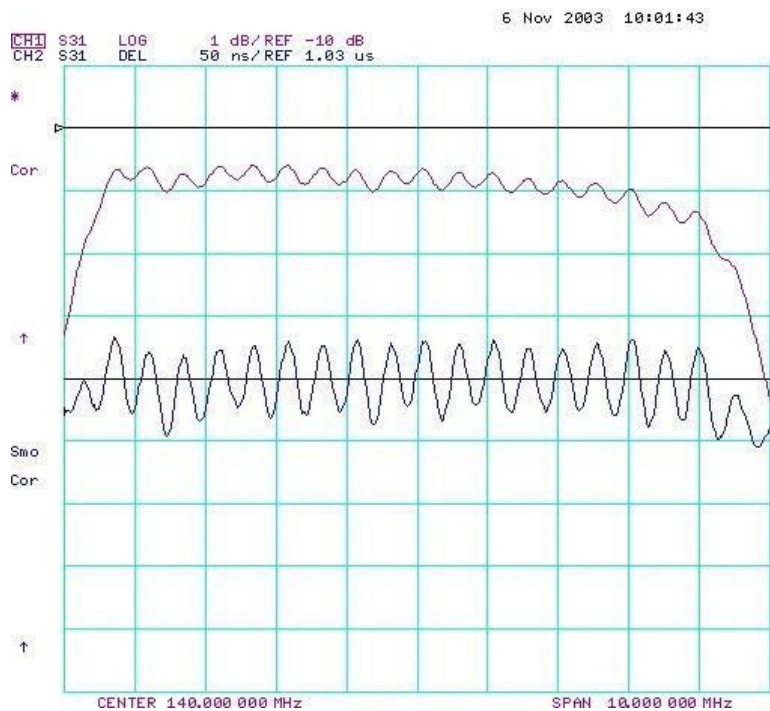
Parameters	Unit	Min.	Typical	Max.
Center frequency, <b>F<sub>c</sub></b>	MHz	-	140	-
Insertion Loss, <b>IL</b>	dB	-	10.5	12.5
1.5 dB Bandwidth	MHz	8.9	9.3	-
3 dB Bandwidth	MHz	9.4	9.9	-
35 dB Bandwidth	MHz	-	13.5	14.5
Relative Attenuation:				
10 to 132 MHz	dB	45	50	
149 to 260 MHz	dB	40	47	
Amplitude ripple within F <sub>c</sub> 3.6 MHz	dB	-	0.65	2.0
Group Delay ripple within F <sub>c</sub> 3.6 MHz	nsec	-	60	150
Substrate Material	-	-	YZ-LN	-
Temperature Coefficient of frequency	ppm/	-	-86	-

### C. Frequency Characteristics:

#### (1) Frequency Response



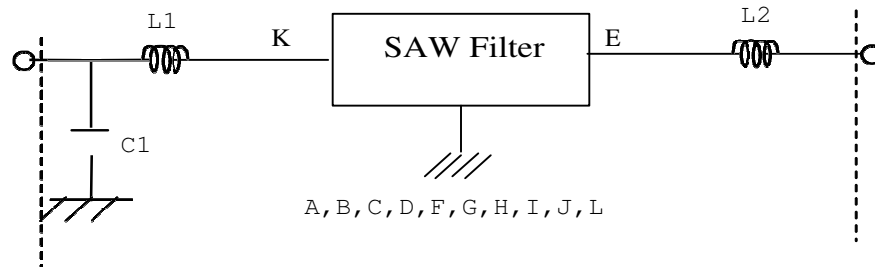
#### (2) Passband response and Group Delay Variation



**D. Measurement Circuit:**

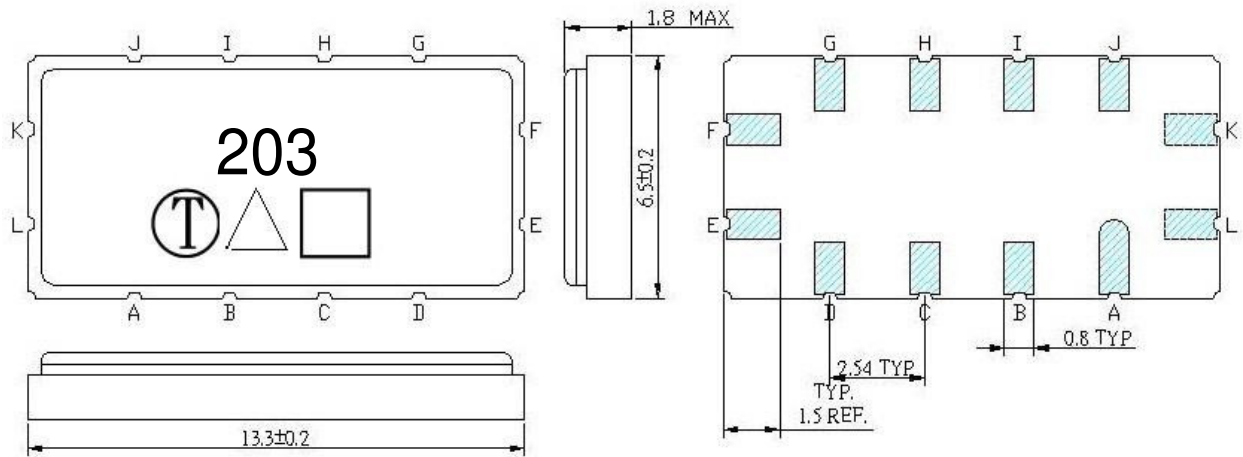
Source and load impedance: 50

Network analyzer



Input: L1=82H, Q>40; C1=33 pF  
Output: L2=56 nH, Q>40

**E. Outline Drawing:**



Unit: mm

- Pin K: RF Input
- Pin E: RF Output
- Pin L: Input Ground
- Pin F: Output Ground
- Pin A, B, C, D, G, H, I, J: To be Ground

: Week Code

Unit: mm

△ : Product / Year Code

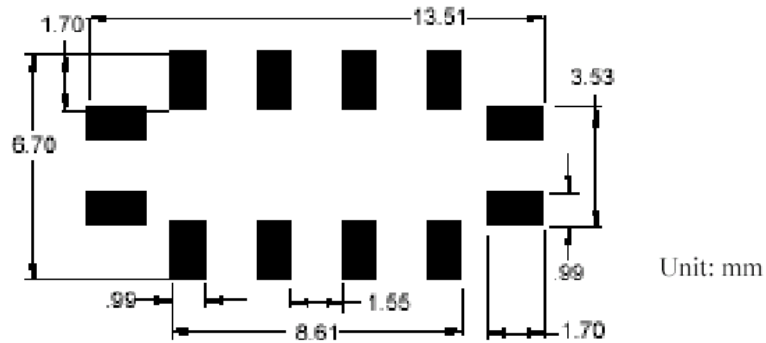
Product / Year Code

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

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

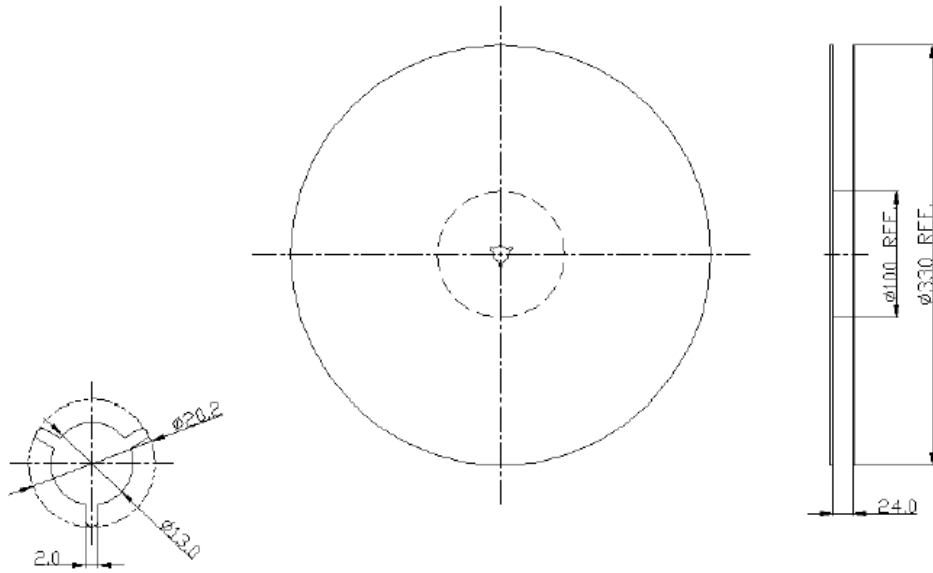
F. PCB Footprint:



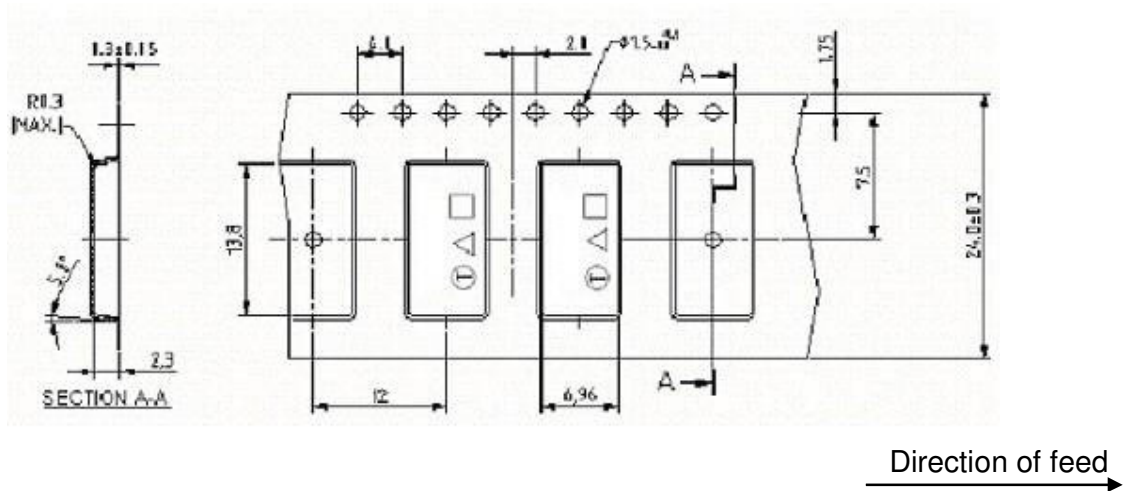
**G. PACKING:**

**1. REEL DIMENSION**

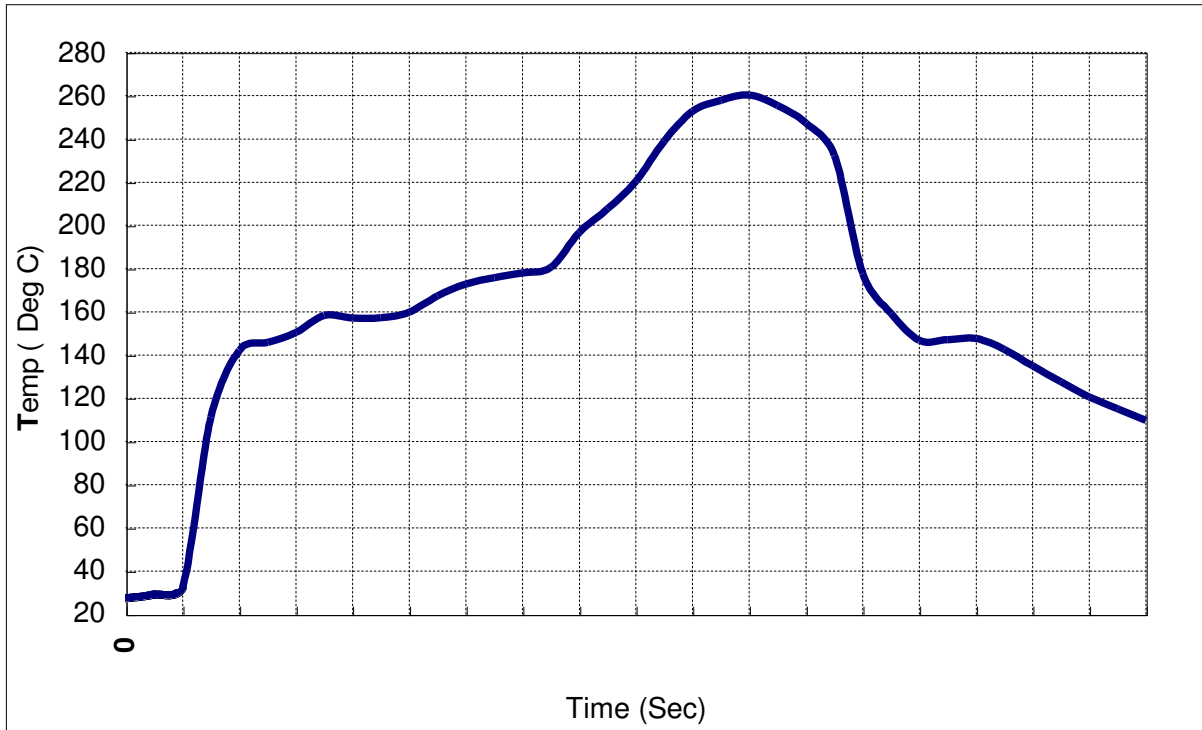
(Please refer to FR-75D10 for packing quantity)



**2. TAPE DIMENSION**



## H. RECOMMENDED REFLOW PROFILE :



## I. Environmental characteristics:

Thermal Shock	Heat cycle conditions -55 °C (30min) ↔ 125 °C (30min) * cycle time : 10 times	After testing , specimens would be kept at room temperature for 2 hour , and the specimens shall meet the electrical specifications, external visual inspection
Humidity test	Temperature : 85 °C Relative humidity : 85% Duration : 96hours	After testing , specimens shall be conditioned at room ambient conditions for not less than 1 hour, and the specimens shall meet the electrical specifications
Dry heat ( Aging test )	Temperature : 125 ± 2 °C Duration : 250 hours	After testing , specimens would be kept at room temperature for 2 hour , and the specimens shall meet the electrical specifications
Cold resistance	Temperature : -40 ± 3 °C Duration : 96hours	After testing , specimens would be kept at room temperature for 2 hour , and the specimens shall meet the electrical specifications
PCT test	Pressure: 2.06kg/cm <sup>2</sup> (2.03*10 <sup>5</sup> pa) Temperature : 121 ± 2 °C Relative humidity : 100±10% Duration : 24 hours	After testing , specimens shall be conditioned at room ambient conditions for not less than 0.5 hour, and the specimens shall meet the fine leak and gross leak test



**J. ATP Test Data:**

TST will provide for customer reference the following data with each production lot:

1. Electrical tests results for 100% supplied units at room temp in accordance with the following table:

NO.	Fo	BW1	BW2	BW3	maxIL	Ripple1	GD1	SB1	SB2	Temperature
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2. Electrical tests results for minimum 10pcs at extreme temperatures -55 °C, +85 °C.
3. Destructive pull test results for minimum 10pcs.  
\*TST guarantee to withstand pull test level of 3 gram.