



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 40 MHz SMD 7.0X5.0 mm (BW=5 MHz)

TST Part No.: TB0318D (This part is compliant by AEC-Q200)

Customer Part No.: _____

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

Checked by: _____ Hayley Chou *Hayley Chou*

Approved by: _____ Andy Yu *Andy Yu*

Date: _____ 2019/05/21

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 40 MHz

MODEL NO.: TB0318D

REV. NO.: 1.0

A. MAXIMUM RATING:

1. Input Power Level: 10 dBm
2. DC Voltage : 5 V
3. Operating Temperature: -40 °C to +105 °C
4. Storage Temperature: -40 °C to +105 °C
5. Moisture Sensitive Level: Level 1 (MSL1)

RoHS Compliant
Lead free
Lead-free soldering

Electrostatic Sensitive Device (ESD)

B. ELECTRICAL CHARACTERISTICS:

Terminating source impedance: $Z_s=50 \Omega$ (Single)

Terminating load impedance: $Z_L=50 \Omega$ (Single)

Item	Unit	Min.	Typ.	Max.
Center Frequency F_c	MHz	-	40	-
Minimum Insertion Loss IL_{min}	dB	-	9.5	12.0
3 dB Bandwidth	MHz	3.0	5.0	-
30 dB Bandwidth	MHz	-	10.0	11.0
Pass band Ripple ($F_C-1.5 \text{ MHz} \sim F_C+1.5 \text{ MHz}$)	dB	-	1.2	2.3
Group Delay Ripple ($F_C-1.5 \text{ MHz} \sim F_C+1.5 \text{ MHz}$)	nsec	-	150	280
Attenuation (Reference level from IL_{min})				
$F_C \pm 5 \text{ MHz}$	dB	16	26	-
0 ~ 30 MHz	dB	35	64	-
27.5 ~ 32.5 MHz	dB	31	40	-
47.5 ~ 52.5 MHz	dB	31	46	-
50 ~ 70 MHz	dB	35	40	-

Note: IL_{min} is the minimum of the pass band attenuation.

The center frequency F_c is the mean value of the upper and lower frequencies at the 3 dB filter attenuation level relative to the IL_{min} .

Terminating source impedance: $Z_s=250\ \Omega$ (Balanced)

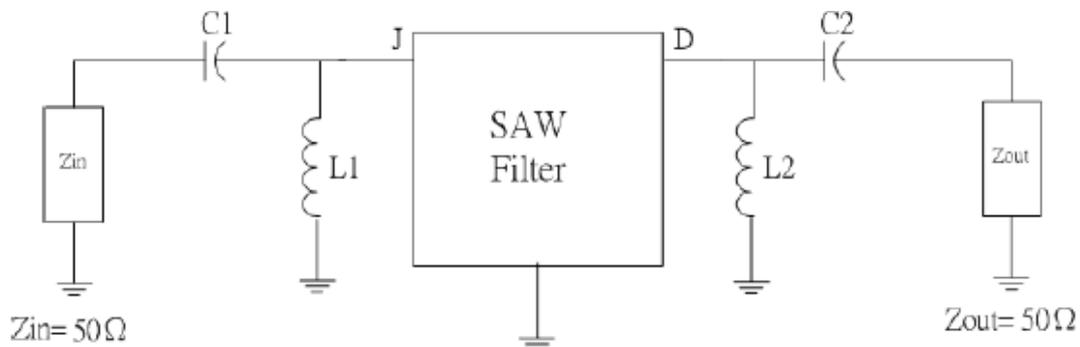
Terminating load impedance: $Z_L=50\ \Omega$ (Single)

Item		Unit	Min.	Typ.	Max.
Center Frequency	F_c	MHz	-	40	-
Minimum Insertion Loss	IL_{min}	dB	-	10.0	12.0
3 dB Bandwidth		MHz	3.0	5.3	-
30 dB Bandwidth		MHz	-	9.3	11.0
Pass band Ripple ($F_c-1.5\ \text{MHz} \sim F_c+1.5\ \text{MHz}$)		dB	-	1.0	2.3
Group Delay Ripple ($F_c-1.5\ \text{MHz} \sim F_c+1.5\ \text{MHz}$)		nsec	-	170	280
Attenuation (Reference level from IL_{min})					
$F_c \pm 5\ \text{MHz}$		dB	16	29	-
0 ~ 30 MHz		dB	35	57	-
27.5 ~ 32.5 MHz		dB	31	54	-
47.5 ~ 52.5 MHz		dB	31	40	-
50 ~ 70 MHz		dB	35	45	-

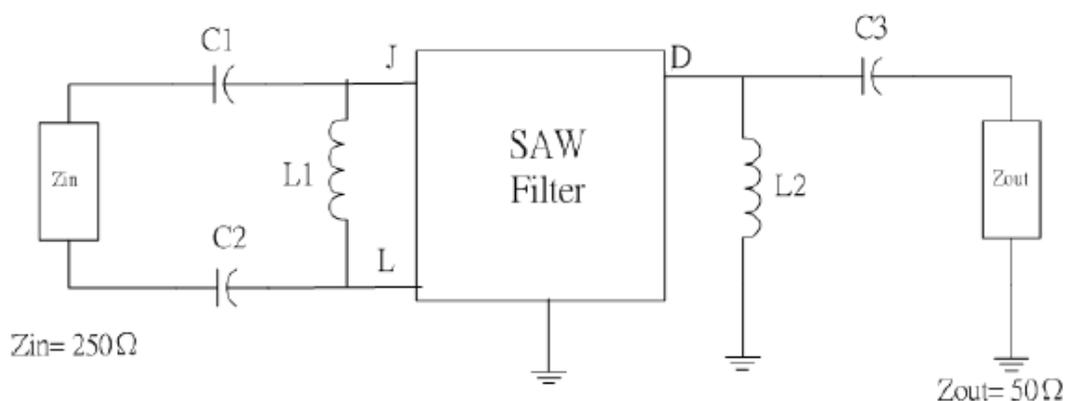
Note: IL_{min} is the minimum of the pass band attenuation.

The center frequency F_c is the mean value of the upper and lower frequencies at the 3 dB filter attenuation level relative to the IL_{min} .

C. MEASUREMENT CIRCUIT:



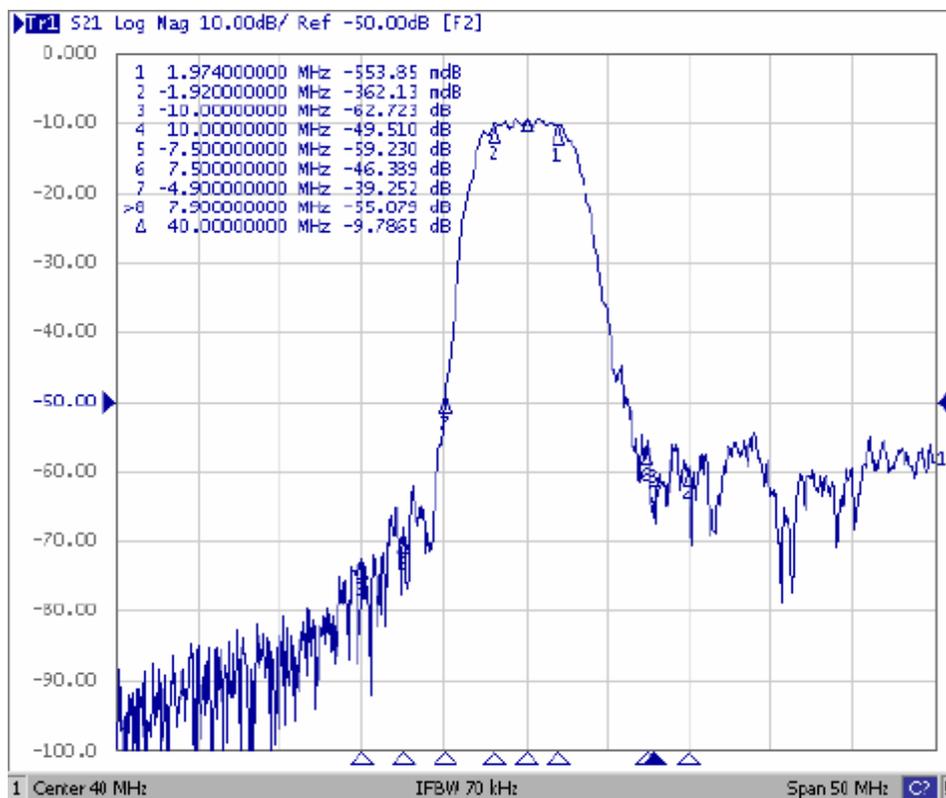
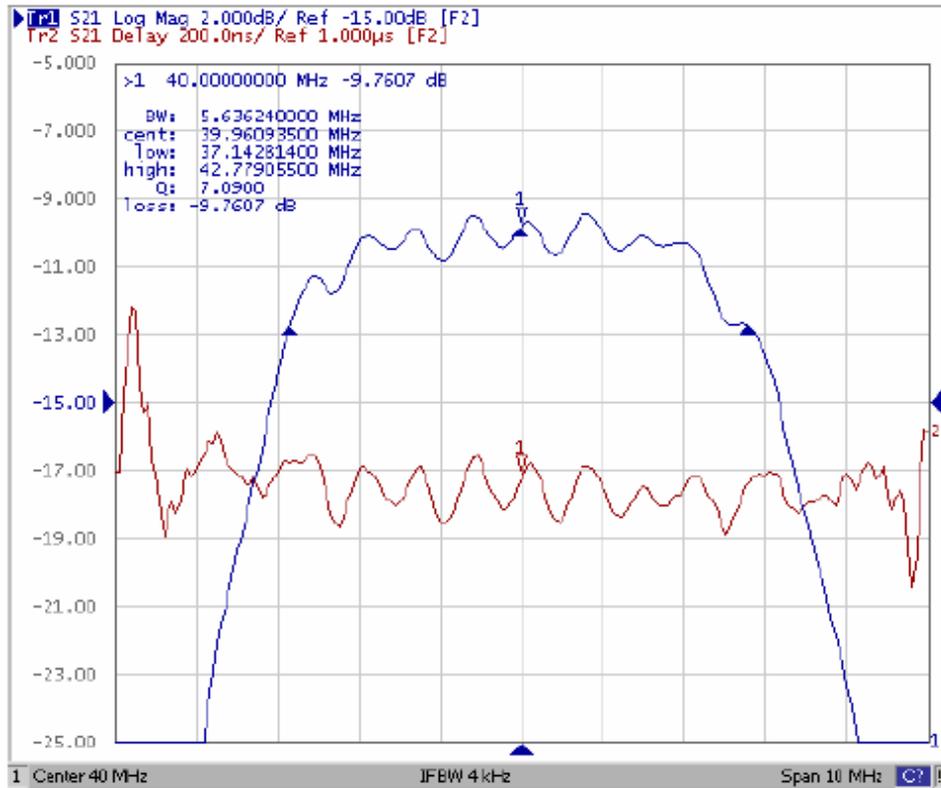
$L1=470\text{nH}$, $C1=22\text{pF}$, $L2=470\text{nH}$, $C2=22\text{pF}$



$L1=680\text{nH}$, $C1=C2=27\text{pF}$, $L2=470\text{nH}$, $C3=24\text{pF}$

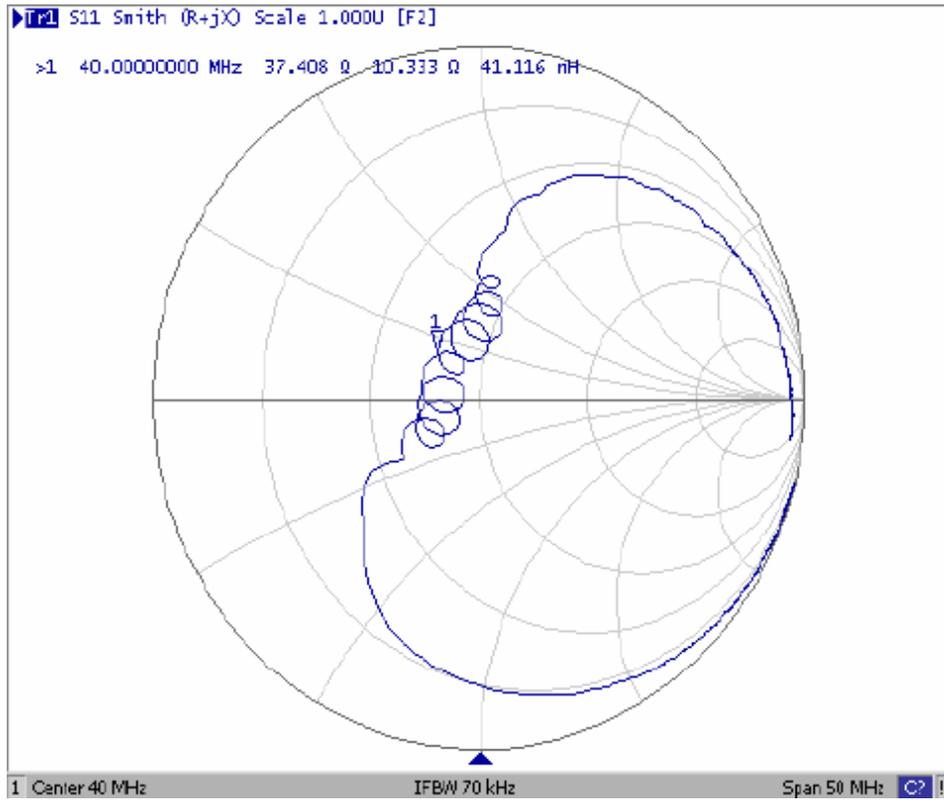
D. FREQUENCY CHARACTERISTIC:

Single-Single:

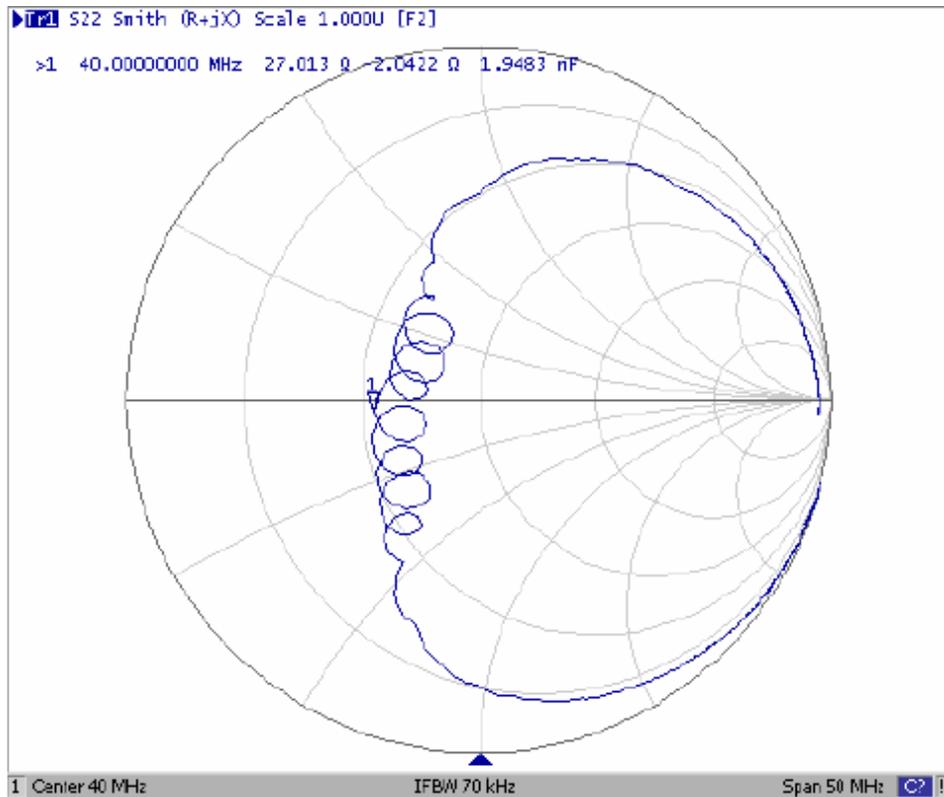


Reflection Functions:

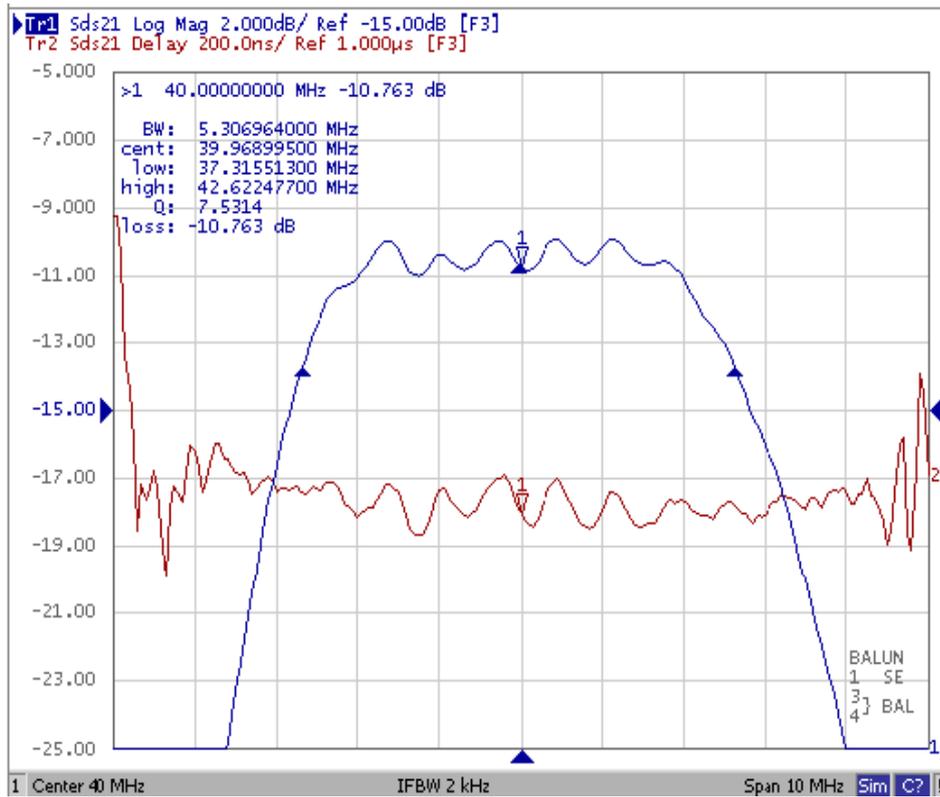
S11



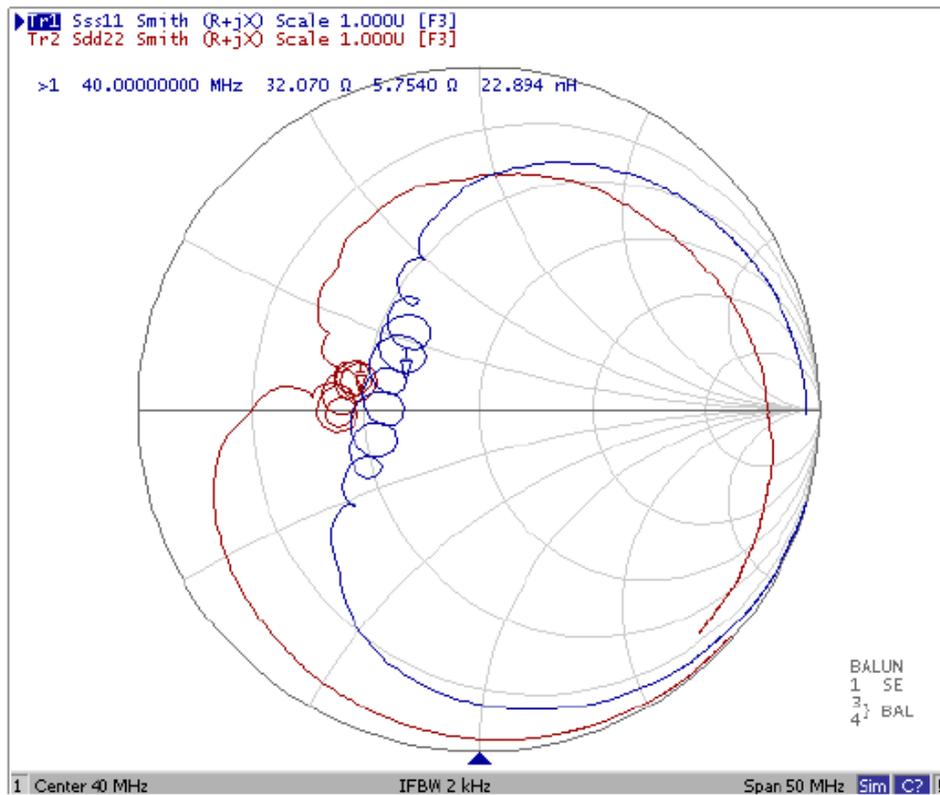
S22



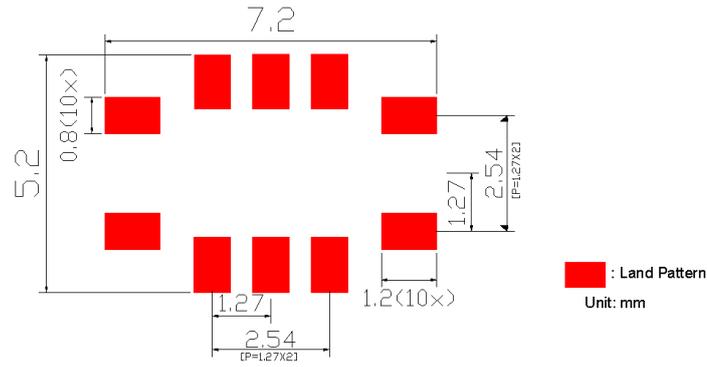
Balanced-Single:



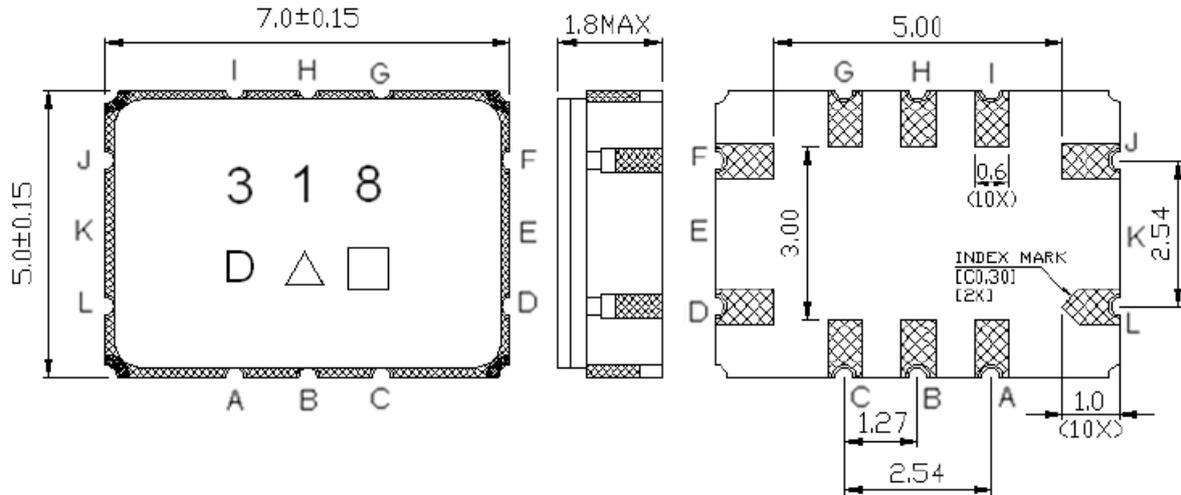
Reflection Functions:



E. PCB Footprint:



F. OUTLINE DRAWING:



- Pin J: RF Input
- Pin L: RF balanced Input
- Pin D: RF Output
- Pin A, B, C, F, G, H, I : 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”)

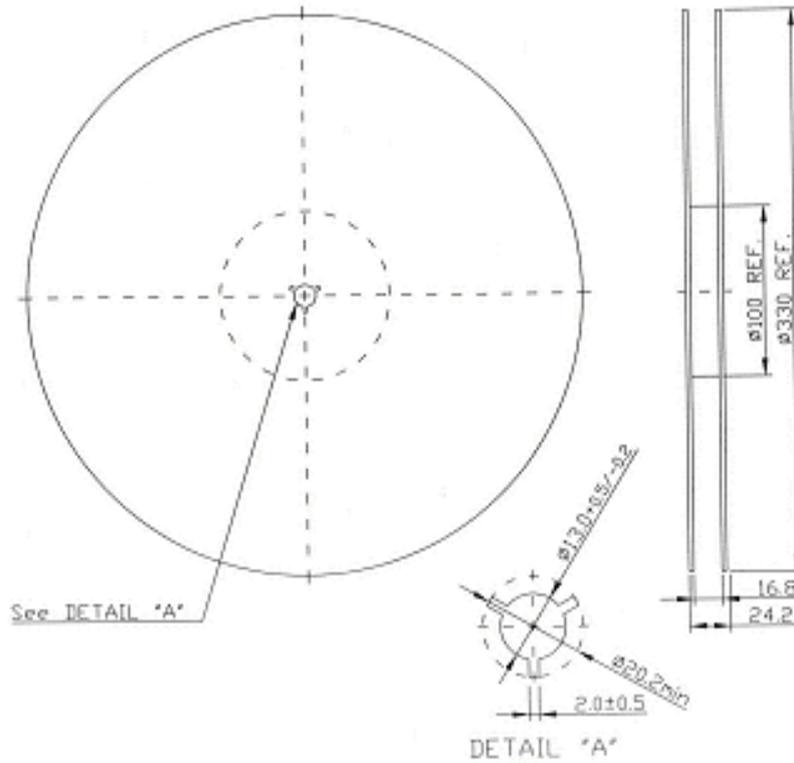
Week Code Table:

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

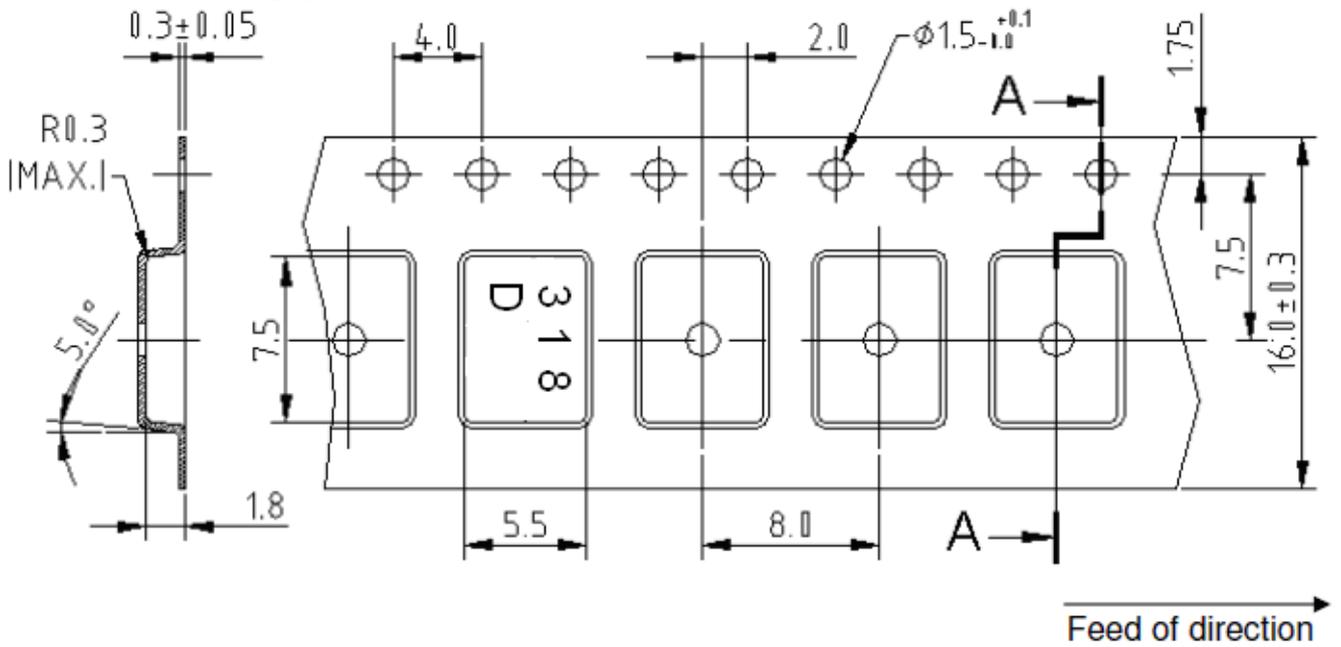
G. PACKING: (Ref: WI-75M03)

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.

