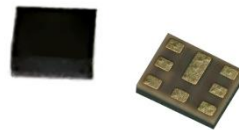


Data Sheet for SAW Components

Band28F

Duplexer



Product ID: RBD0781B3V

Date: Sep. 20, 2023

Revision: 1.0

Features

- ◆ Package Size : 1.8 x 1.4 x 0.6max mm
- ◆ Single-Ended Input and Output
- ◆ Terminating Impedance : 50 Ω
- ◆ Moisture Sensitivity Level 3
- ◆ ESD Sensitive Device
- ◆ TC-SAW
- ◆ Low Insertion Loss

Electrical Specifications Band28F Duplexer

Temperature Range for Specification : -30 to +85 °C

Tx to Ant					Min.	Typ.	Max.	Unit
Insertion Loss								
	705.5	-	745.5	MHz	-	1.1	2.5	dB ^{*1}
Pass Band Ripple								
	705.5	-	745.5	MHz	-	0.6	2.0	dB ^{*1}
VSWR Tx								
	705.5	-	745.5	MHz	-	1.6	2.0	-
VSWR Ant								
	705.5	-	745.5	MHz	-	1.6	2.0	-
Absolute Attenuation								
	410	-	670	MHz	31	33	-	dB
	670	-	680	MHz	30	35	-	dB
	680	-	694	MHz	10	35	-	dB
	694	-	695	MHz	5	50	-	dB
	692	-	695	MHz	5	50	-	dB
	695	-	698	MHz	2	36	-	dB
	760.5	-	800.5	MHz	38	53	-	dB ^{*1}
	859	-	894	MHz	25	35	-	dB
	1164	-	1189	MHz	25	37	-	dB
	1189	-	1214	MHz	25	37	-	dB
	1215	-	1239.6	MHz	25	37	-	dB
	1406	-	1466	MHz	20	33	-	dB
	1559.05	-	1605.89	MHz	27	32	-	dB
	1710	-	1785	MHz	25	30	-	dB
	1805	-	1880	MHz	24	29	-	dB
	1930	-	1995	MHz	23	29	-	dB
	2010	-	2025	MHz	23	29	-	dB
	2109	-	2244	MHz	23	27	-	dB
	2300	-	2400	MHz	21	26	-	dB
	2400	-	2500	MHz	21	26	-	dB
	2500	-	2690	MHz	21	24	-	dB
	2812	-	2932	MHz	15	23	-	dB
	3400	-	3800	MHz	13	17	-	dB

4900	-	5950	MHz	10	15	-	dB
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*1: Integrated |S21| over the center 5 MHz CH BW and converting to dB value

Electrical Specifications Band28F Duplexer

Temperature Range for Specification : -30 to +85 °C

Ant to Rx	Min.	Typ.	Max.	Unit
Insertion Loss				
760.5 - 800.5 MHz	-	1.3	3.2	dB ^{*1}
Pass Band Ripple				
760.5 - 800.5 MHz	-	0.6	2.5	dB ^{*1}
VSWR Rx				
760.5 - 800.5 MHz	-	1.6	2.0	-
VSWR Ant				
760.5 - 800.5 MHz	-	1.6	2.0	-
Absolute Attenuation				
10 - 699 MHz	40	44	-	dB
699 - 703 MHz	40	63	-	dB
705.5 - 745.5 MHz	45	59	-	dB ^{*1}
814 - 6000 MHz	2	34	-	dB
824 - 849 MHz	20	40	-	dB
880 - 915 MHz	35	42	-	dB
1710 - 1785 MHz	40	58	-	dB
1850 - 1910 MHz	35	56	-	dB
1920 - 1980 MHz	35	57	-	dB
2400 - 2484 MHz	40	52	-	dB
2496 - 2690 MHz	40	52	-	dB
4900 - 5950 MHz	30	49	-	dB
6822 - 7092 MHz	25	39	-	dB
7580 - 7880 MHz	25	39	-	dB

*1: Integrated |S31| over the center 5 MHz CH BW and converting to dB value

Electrical Specifications Band28F Duplexer

Temperature Range for Specification : -30 to +85 °C

Tx to Rx	Min.	Typ.	Max.	Unit
Isolation				
705.5 - 745.5 MHz	55	58	-	dB ^{*1}
760.5 - 800.5 MHz	52	54	-	dB ^{*1}

*1: Integrated |S32| over the center 5 MHz CH BW and converting to dB value

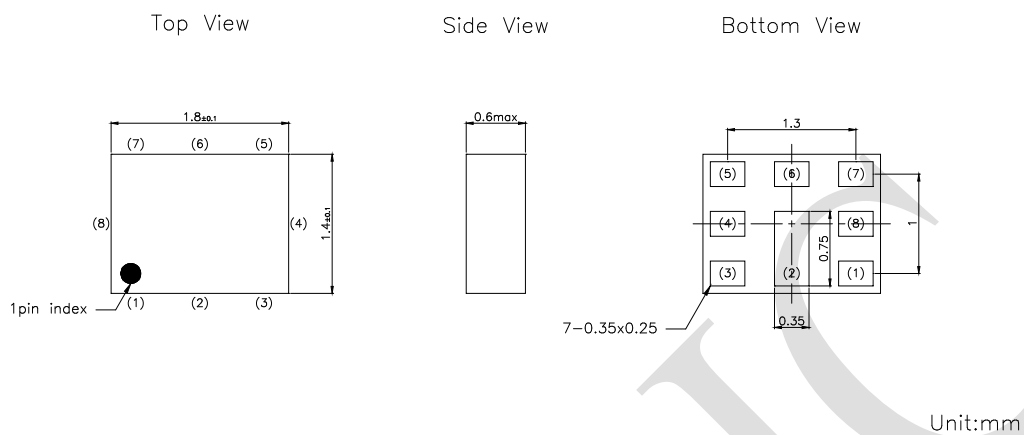
Maximum Ratings

Item	Rating	Condition / Remark
Storage Temperature	-40 to +85 °C	
DC Voltage	5 V	+25 °C
Input power	+30 dBm	LTE , +55 °C , 5000 h

Recommended Operating Conditions

Item	Rating	Condition / Remark
Operating Temperature, T _{CASE}	-30 to +85 °C	

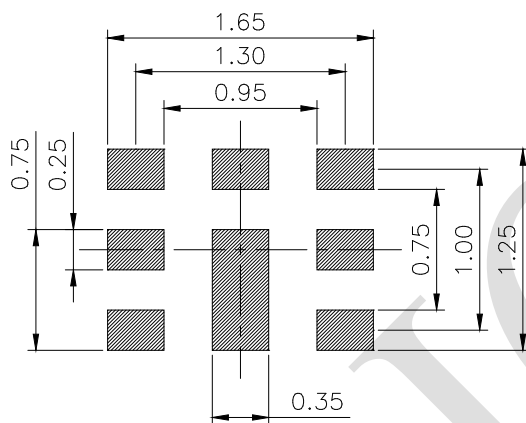
Package Information



Pin Configuration

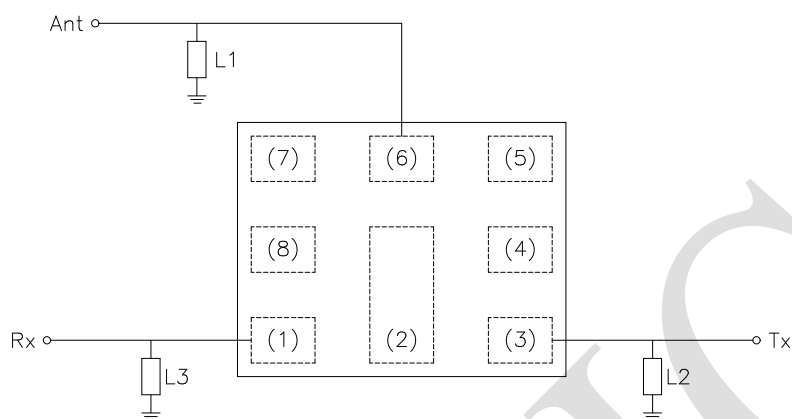
1 : Rx
 3 : Tx
 6 : Ant
 Other : GND

Land Pattern



Unit:mm

Application Circuit



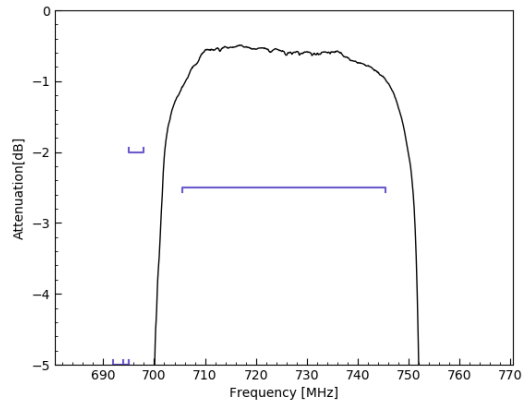
Port	Terminating Z	Matching Component
Ant	50 Ω	L1 : 8.1nH (Ideal inductor)
Tx	50 Ω	L2 : 9.0nH (Ideal inductor)
Rx	50 Ω	L3 : 15nH (Ideal inductor)

For ESD protection, external shunt inductor at all ports is recommended.

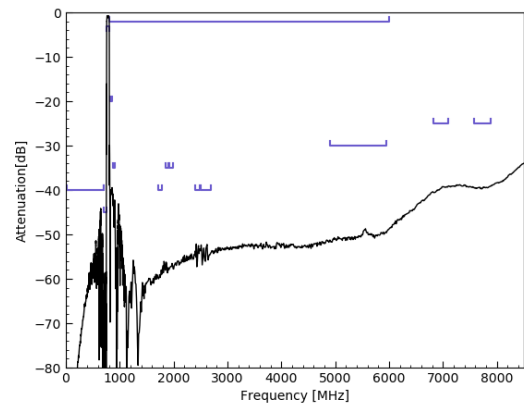
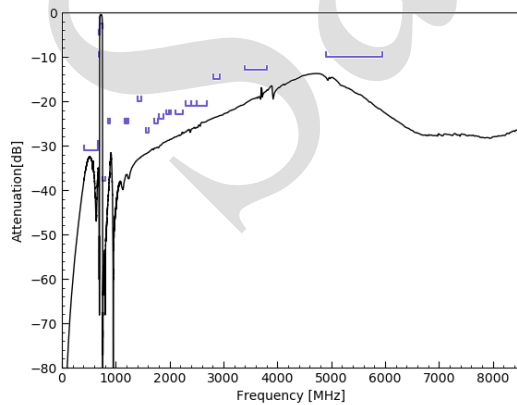
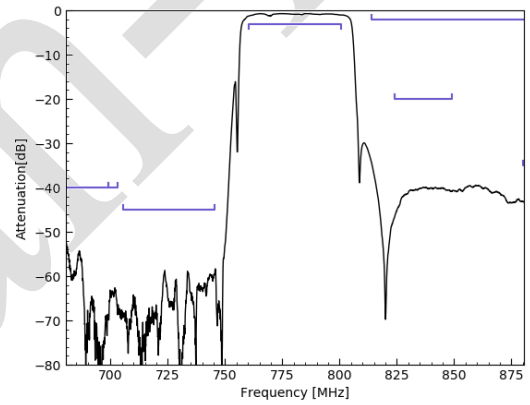
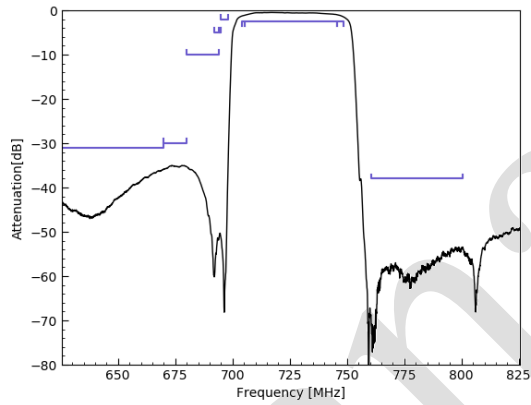
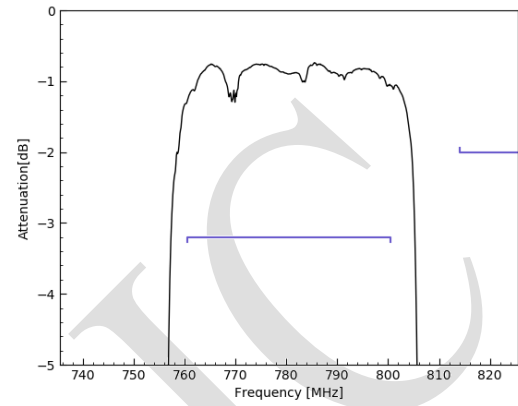
Electrical Characteristics

Band28F Duplexer

Tx to Ant



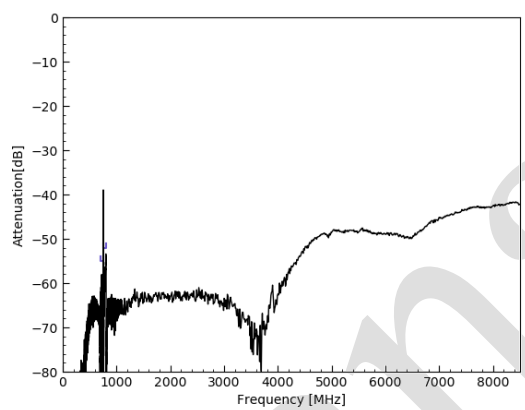
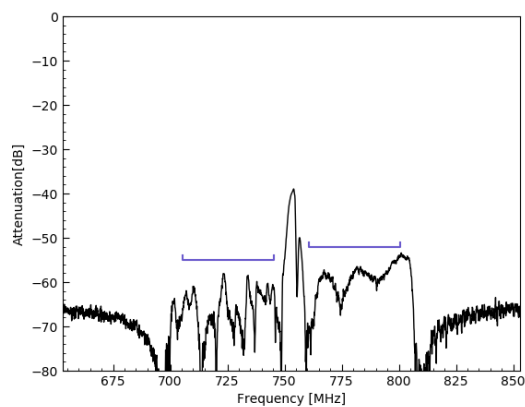
Ant to Rx



Electrical Characteristics

Band28F Duplexer

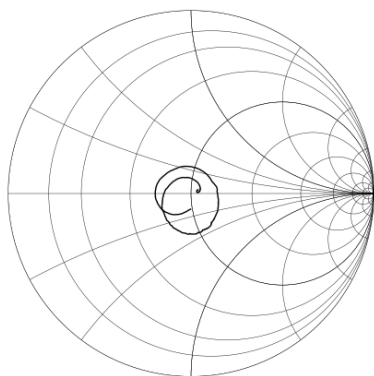
Tx to Rx



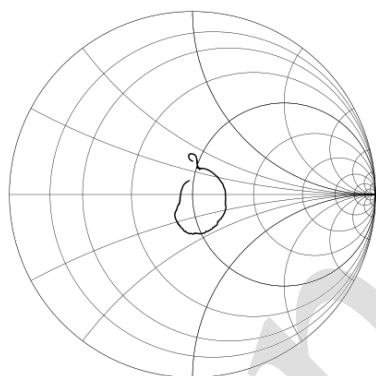
Electrical Characteristics

Band28F Duplexer

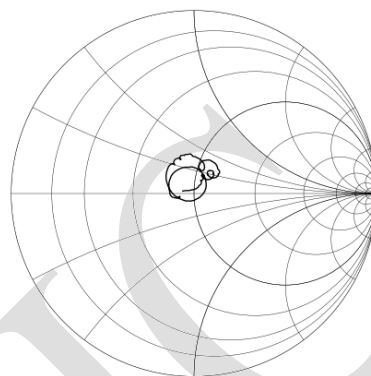
Ant Impedance (Tx band)



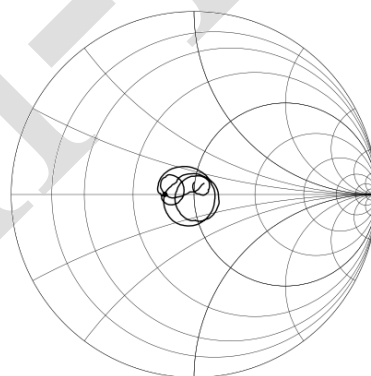
Tx Impedance



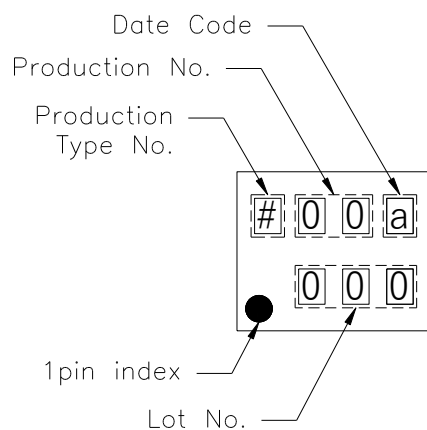
Ant Impedance (Rx band)



Rx Impedance



Marking Information



Production type No. (S: Sample, P: Production)

Product No. : 3V

Lot No. (Indicated by 0 ~ 9 or A to Z and a to z, except I, O, i, o and l)

Product date code :

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2023	n	p	q	r	s	t	u	v	w	x	y	z
2024	A	B	C	D	E	F	G	H	J	K	L	M
2025	N	P	Q	R	S	T	U	V	W	X	Y	Z
2026	a	b	c	d	e	f	g	h	j	k	l	m

Technical drawing of a tape with dimensions and labels:

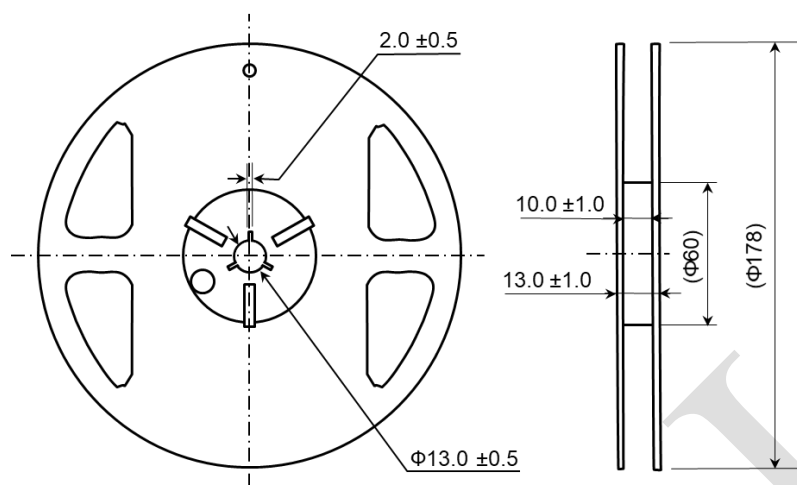
- Top dimensions: 0.2 ± 0.02 , 2.0 ± 0.05 , 4.0 ± 0.1
- Label: Feeding Hole ($\Phi 1.55 \pm 0.05$)
- Right side dimensions: 1.75 ± 0.1 , 3.5 ± 0.05 , $8.0 \pm 0.2 / 0.1$
- Bottom dimensions: 0.70 ± 0.05 , 4.0 ± 0.1 , 1.6 ± 0.05
- Bottom label: Tape Running Direction
- Bottom right dimension: $\Phi 0.80 \pm 0.10$

The diagram illustrates the layout of a magnetic tape. It is divided into three main sections from left to right:

- Vacant:** The first section, starting from the **END** marker, is labeled "Vacant" and has a minimum length of 150mm. It contains two rows of symbols: the top row has circles and the bottom row has squares.
- Components Contained:** The middle section, separated from the first by a double line, is labeled "Components Contained". It contains two rows of symbols: the top row has circles and the bottom row has squares, some of which are shaded with diagonal lines.
- Vacant + Leader Part:** The final section, starting after a double line, is labeled "Vacant + Leader Part" and has a minimum length of 400mm. It contains two rows of symbols: the top row has circles and the bottom row has squares, some of which are shaded with diagonal lines. This section ends at the **START** marker.

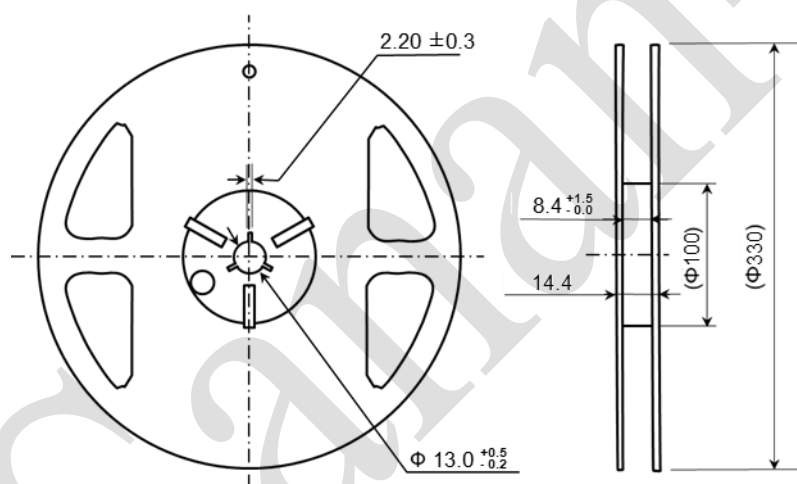
Below the tape, an arrow points to the right, labeled **TAPE RUNNING DIRECTION**.

Reel Information



$\Phi 178$ Reel Dimension

UNIT: mm



$\Phi 330$ Reel Dimension

UNIT: mm

Ordering Code

Part Number	Description
RBD0781B3V-SA	Bulk (few pieces)
RBD0781B3V-MB	Tape & Reel 3,000 pcs/reel
RBD0781B3V-MC	Tape & Reel 10,000 pcs/reel
RBD0781B3V-SZ	EVB

Revision History

Revision	Date	Description
1.0	Sep. 20, 2023	● Initial release

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