Acoustic Chip Technology
Shengxin

DATASHEET

of SAW Devices

SAW Duplexer

Part Number : SXDB001LDNSC18

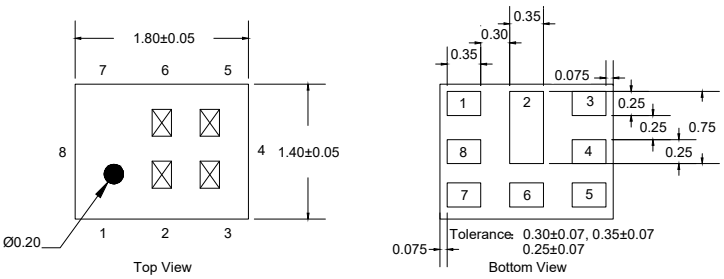
Band 1, SAW Duplexer

- Package Dimensions
- Testing Environment
- Electrical Characteristics
- Frequency Characteristics
- Remark and Packing
- Description

Revision Record

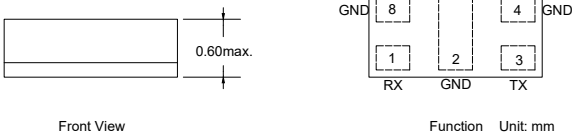
Revision Number	Date	Description
SXDB001LDNSC18_Rev0.1	2022-08-02	Spec. Adjustment
SXDB001LDNSC18_Rev0.2	2022-09-26	Description and Other Information

Dimension & Features



- Package size 1.8 x 1.4 x 0.6(max.)mm^3
- RoHS compatible
- **E**lectrostatic **S**ensitive **D**evice (**ESD**)
- **M**oisture **S**ensitivity **L**evel 2

Pin Configuration

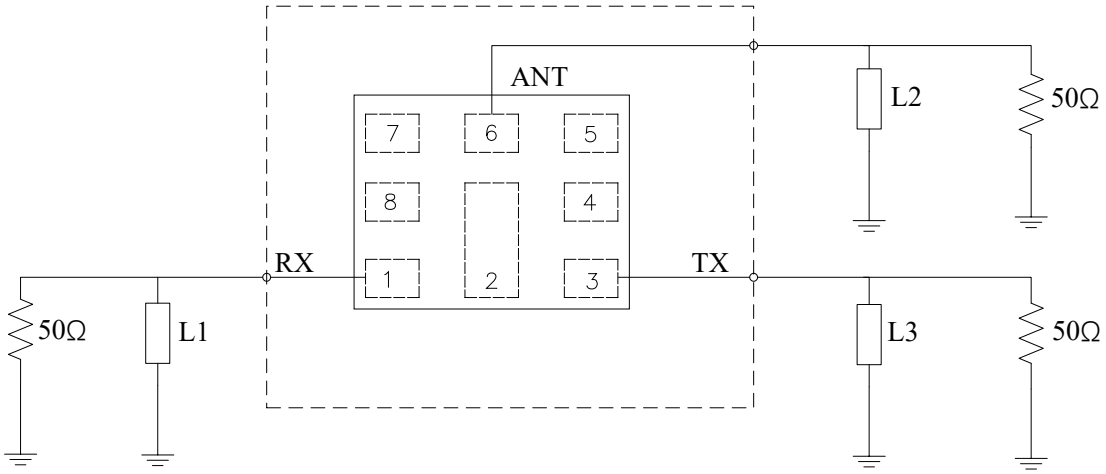


- 6 Ant
- 3 Tx (1950MHz)
- 1 Rx (2140MHz)
- Others: GND

Marking

- XX(The first row): **An**
- XX(The second row): Date Code
  (Please refer to the last page
  for the information of Date Code.)

Measurement Circuit



Parameter Name	Value
L1	3nH
L2	1.6nH
L3	0.85nH

Maximum Ratings

Characteristics		Ratings	Unit
Operable Temperature Range	T	-20 to +85	℃
Storage Temperature Range	T_{stg}	-40 to +85	℃
Maximum DC Voltage	V_{DC}	3	V
Input Power at Tx Port	P	29dBm, Ta=+50℃,5000h,CW	dBm
ESD Voltage(MM)	V_{MM}	50	V
ESD Voltage(HBM)	V_{HBM}	175	V

Characteristics

Antenna Impedance(unbalanced)[1]: 50Ω

Tx Impedance(unbalanced)[1]: 50Ω

Tx to Ant		Specifications			
Item	Frequency Range [MHz]	Characteristics			
		min.	typ.[2]	max.	Unit
Insertion Loss	1920.00 – 1980.00	-	1.7	2.5	dB
Ripple Deviation	1920.00 – 1980.00	-	0.4	1.0	dB
VSWR of Tx Port	1920.00 – 1980.00	-	1.5	2.0	-
VSWR of Ant. Port	1920.00 – 1980.00	-	1.6	2.2	-
Absolute Attenuation	10.00 – 1574.00	32	36	-	dB
	420.00 – 494.00	45	52	-	dB
	815.00 – 849.00	37	43	-	dB
	843.00 – 894.00	37	42	-	dB
	880.00 – 915.00	35	42	-	dB
	925.00 – 960.00	35	41	-	dB
	1226.00 – 1805.00	32	37	-	dB
	1805.00 – 1865.00	20	26	-	dB
	1865.00 – 1880.00	18	24	-	dB
	2110.00 – 2170.00	42	45	-	dB
	2400.00 – 2500.00	35	39	-	dB
	2620.00 – 2690.00	30	34	-	dB
	3840.00 – 3960.00	18	23	-	dB
	4900.00 – 5950.00	10	13	-	dB
	4905.00 – 5845.00	10	13	-	dB
	7680.00 - 7920.00	5	10	-	dB

Rx Impedance(unbalanced)[1]: 50Ω

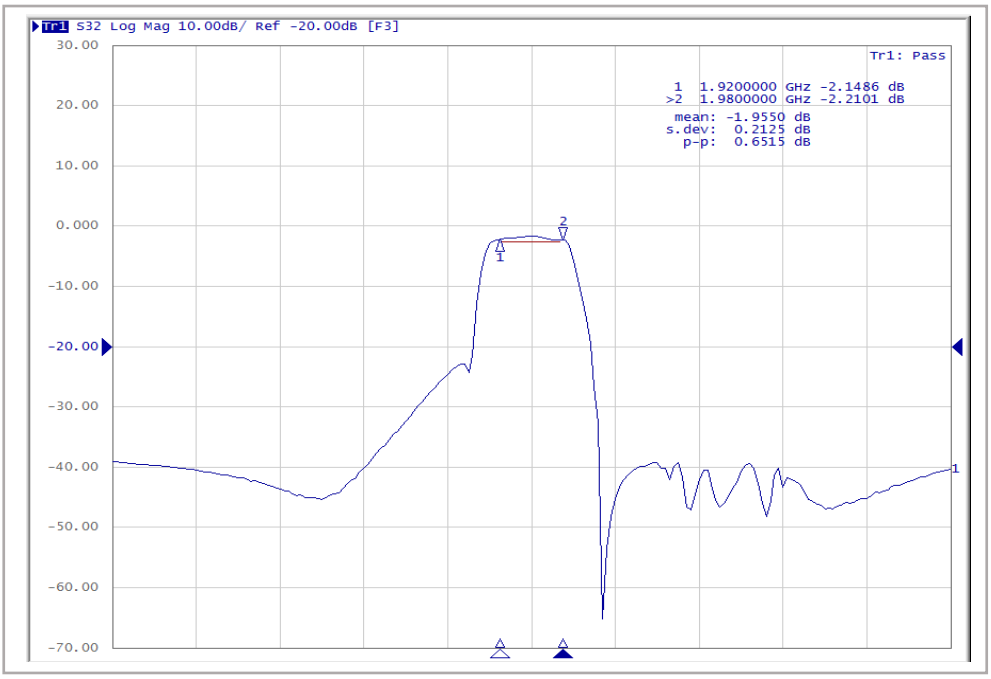
Ant to Rx		Specifications			
Item	Frequency Range [MHz]	Characteristics			
		min.	typ.[2]	max.	Unit
Insertion Loss	2110.00 – 2170.00	-	2.2	2.6	dB
Ripple Deviation	2110.00 – 2170.00	-	0.4	1.0	dB
VSWR of Rx Port	2110.00 – 2170.00	-	1.9	2.3	-
VSWR of Ant. Port	1920.00 – 1980.00	-	1.8	2.3	-
Absolute Attenuation	1.00 – 1920.00	32	42	-	dB
	190.00	50	75	-	dB
	710.00 – 915.00	40	52	-	dB
	1427.00 – 1790.00	37	44	-	dB
	1920.00 – 1980.00	48	51	-	dB
	1980.00 – 2015.00	40	48	-	dB
	2015.00 – 2075.00	10	34	-	dB
	2255.00 – 6130.00	23	30	-	dB
	2400.00 – 2500.00	40	47	-	dB
	2500.00 – 2570.00	40	47	-	dB
	4030.00 – 4150.00	45	48	-	dB
	4220.00 – 4340.00	45	48	-	dB
	4900.00 – 5950.00	25	30	-	dB
	5950.00 – 6130.00	23	30	-	dB
	6130.00 – 6330.00	20	25	-	dB
	6330.00 – 6510.00	15	20	-	dB

Tx to Rx		Specifications			
Item	Frequency Range [MHz]	Characteristics			
		min.	typ.[2]	max.	Unit
Isolation	1574.00 – 1577.00	40	55	-	dB
	1920.00 – 1980.00	50	55	-	dB
	2110.00 – 2170.00	48	53	-	dB
					dB
					dB

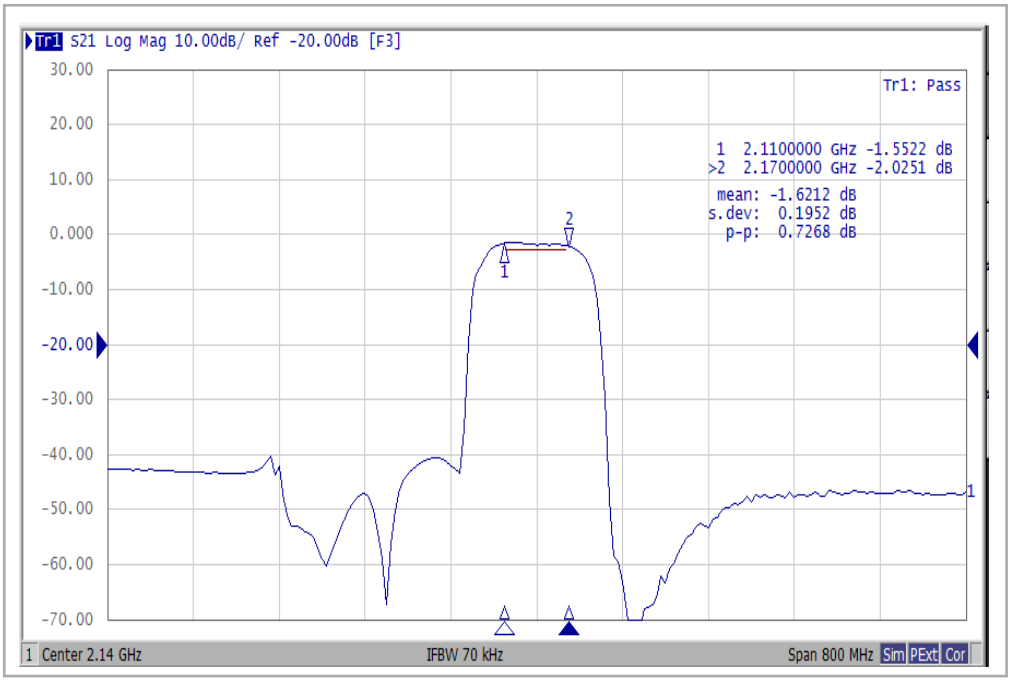
1. **Attention**: under the condition with matching network
2. Typical value at 25±2deg.C

Frequency Characteristics

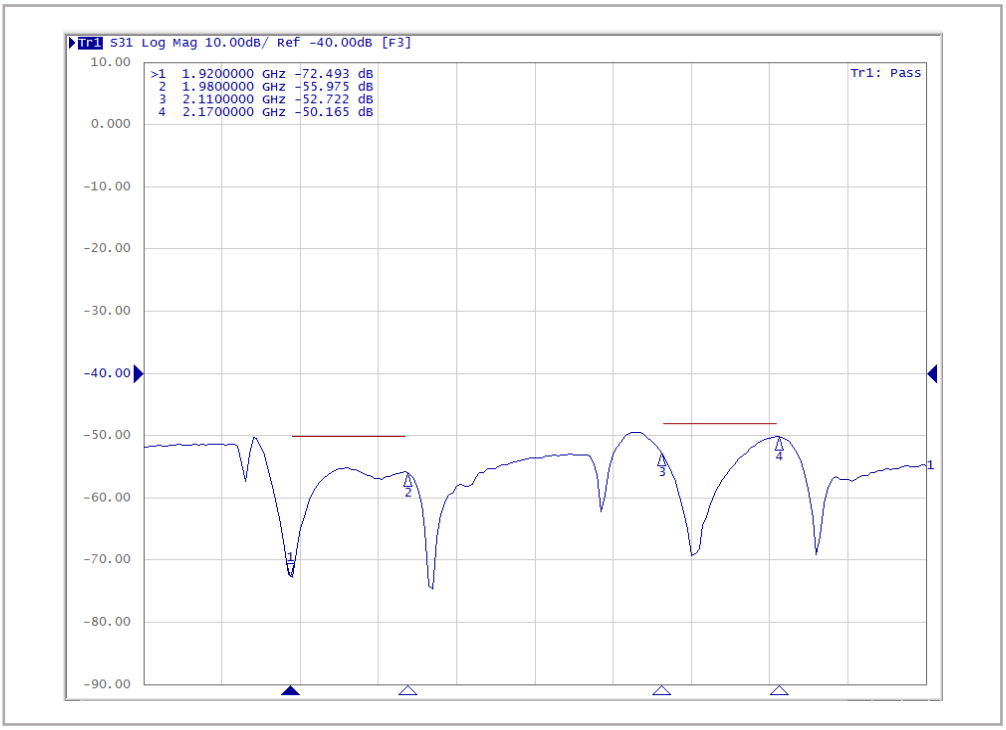
Tx to Ant



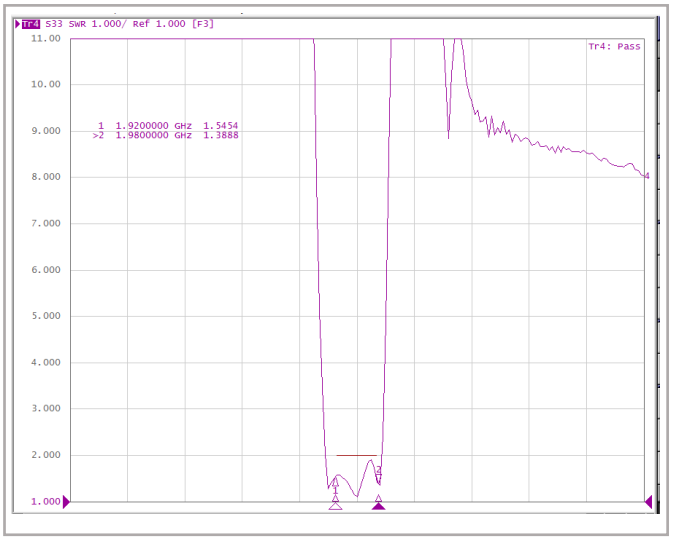
Ant to Rx



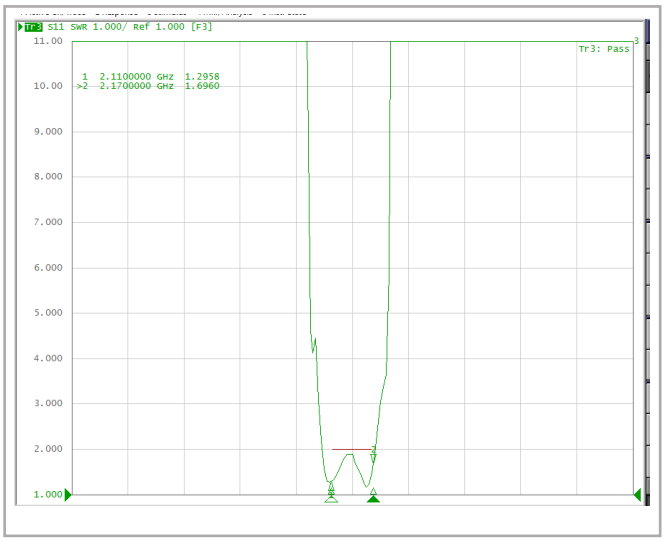
Isolation



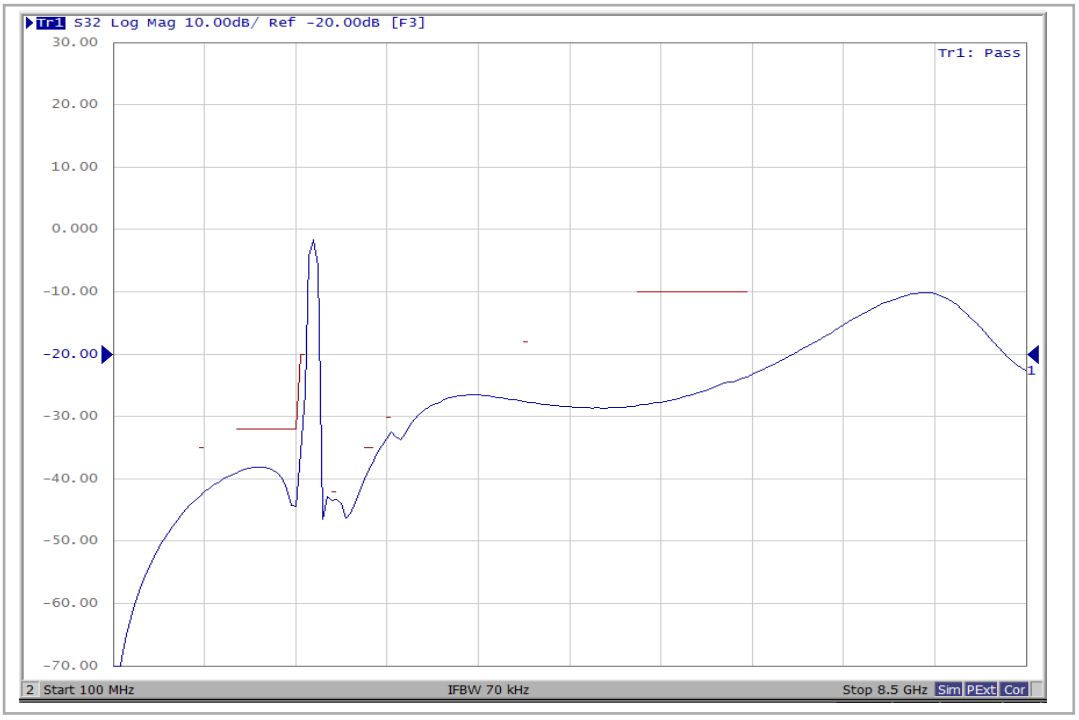
VSWR(Tx Port)

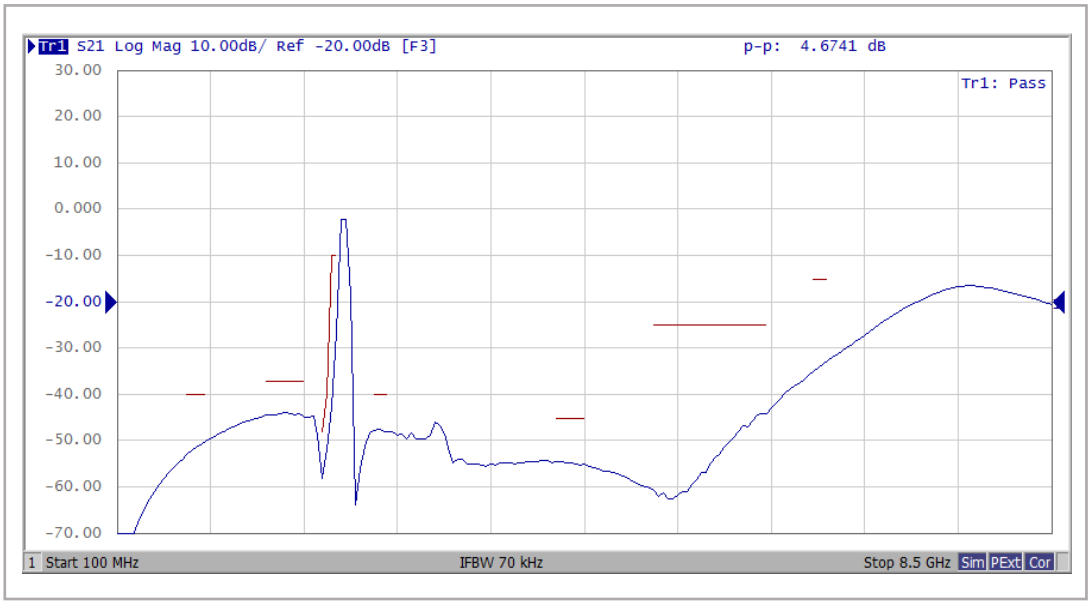


VSWR(Rx Port)



Wide Span





Reliability Characteristics

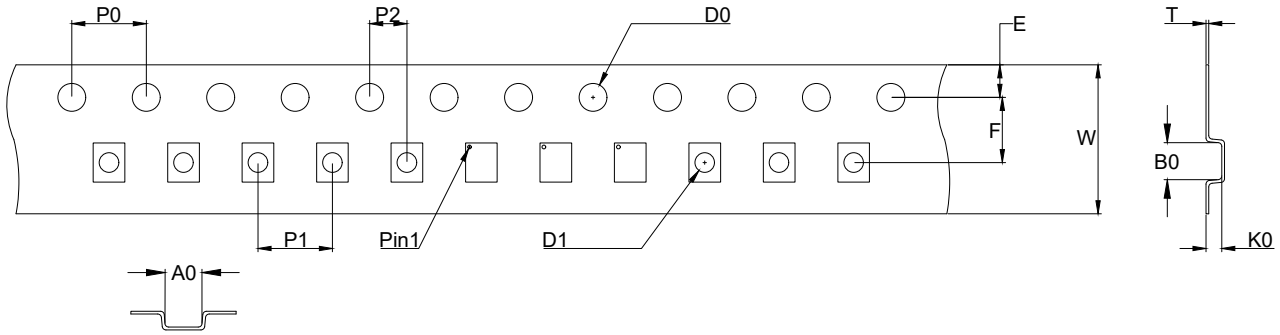
No.	Item	Condition to be satisfied
1	High Temp. Storage	①Test temperature: +85℃±3℃ ②Duration time：500 hours ③Restore time: 2 hours at the room temperature(25℃)
2	Low Temp. Storage	①Test temperature: -40℃±3℃ ②Duration Time: 500 hours ③Restore time: 2 hours at the room temperature(25℃)
3	High Temp. High Humidity Storage	①Test temperature: +85℃±3℃ ②Test Humidity：85%±3% ③Duration Hours：240 hours ④Restore time: 2 hours at the room temperature(25℃)
4	Temperature Cycling	①Test Temperature: -40^{0}_{-10}℃~$+85^{+10}_{0}$℃ ②Time for each step: ≥30min ③Conversion time: ≤1min ④Cycle times: 100 times ⑤Restore time: 24 hours at the room temperature(25℃)
5	Soldering heat resistance	①Reflow with 260±5℃, 10±1s (Solder Pot) ②Restore time: 2 hours at the room temperature(25℃)
6	Solderability test	Soldering method and temperature: lead-free reflow soldering, $+255^{+5}_{0}$℃

Remarks

1. Please be certain not to apply voltage above the rated voltage of SAW components.
2. Please be sure that the component operate within the specified operating temperature range.
3. Abrupt temperature change shall be avoided because deterioration of the component characteristics can occur under that situation.
4. Please be careful of soldering temperature when soldering.
5. Please do not place soldering iron on the body of components.
6. Please be careful not to subject the terminals or leads of components to excessive force.

Packing Information

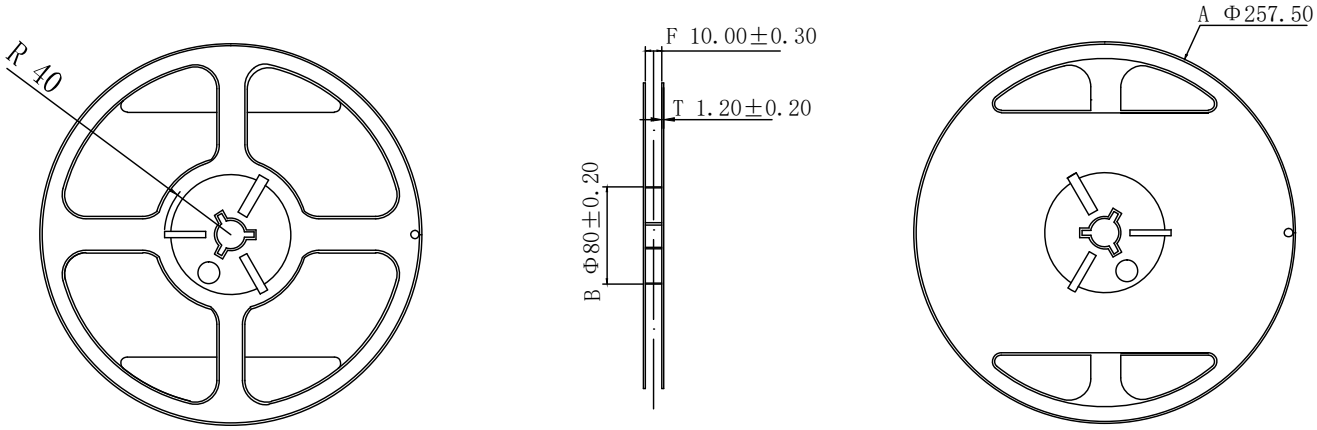
Tape (Unit: mm)



Size	P0	P1	P2	D0	D1	E	F	W	A0	B0	K0	T
Value	4.00	4.00	2.00	Φ 1.55	Φ 1.05	1.75	3.50	8.00	1.70	2.10	0.90	0.18
Tolerance	±0.10	±0.10	±0.10	±0.05	±0.05	±0.10	±0.10	±0.20	±0.05	±0.05	±0.05	±0.05

Reel (Unit：mm)

10000pcs/Reel(Standard Size)



Description of Date Code

A. Month Code:

2022 2026 2030	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
	A	B	C	D	E	F	G	H	J	K	L	M
2023 2027 2031	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
	N	P	Q	R	S	T	U	V	W	X	Y	Z
2024 2028 2032	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
	a	b	ϵ	d	e	f	g	h	j	k	l	m̩
2025 2029 2033	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
	n	O	ṗ	q	r	s̩	t	ū	v̩	w	ẍ	y

B. Date Code:

1	2	3	4	5	6	7	8	9	10	
A	B	C	D	E	F	G	H	J	K	
11	12	13	14	15	16	17	18	19	20	
L	M	N	P	Q	R	S	T	U	V	
21	22	23	24	25	26	27	28	29	30	31
W	X	Y	Z	a	b	ϵ	d	e	f	g

Recommended Soldering Profile