

SM1814-8

MAXIMUM RATING:

- Operating temperature range: -20 °C to +85 °C
- Storage temperature range: -40 °C to +85 °C
- Input power : 29 dBm
- Maximum DC Voltage: +/-3 V
- Moisture Sensitivity Level: Level 3

ELECTRICAL CHARACTERISTICS:

Tx to ANT (f_{T0}=680.5 MHz)

Tx to Ant		Specification			
Parameter	Condition [MHz]	Unit	Minimum ¹	Typical ²	Maximum ¹
Insertion Loss	663.00-698.00	dB		2.7	3.1
Ripple Deviation	663.00-698.00	dB		1.6	2.1
VSWR of Rx Port	663.00-698.00			1.4	2.0
VSWR of Ant Port	663.00-698.00			1.6	2.0
Absolute Attenuation	10-608	dB	40	45	
	608-614	dB	45	52	
	617-652	dB	49	54	
	717-728	dB	55	61	
	722-729	dB	55	60	
	729-746	dB	48	53	
	746-768	dB	45	49	
	824-849	dB	40	47	
	859-894	dB	40	47	
	1164-1250	dB	50	57	
	1326-1396	dB	60	67	
	1559-1606	dB	55	60	
	1710-1755	dB	52	58	
	1805-1880	dB	52	57	
	1930-1990	dB	50	56	
	1989-2094	dB	50	56	
	2110-2200	dB	50	55	
	2400-2484	dB	50	57	
	2652-2792	dB	50	57	
3300-3800	dB	50	54		
3300-4200	dB	50	54		
4400-5000	dB	40	45		
4900-5950	dB	30	36		

ANT to Rx (f_{T0}=634.5 MHz)

Ant to Rx		Specification			
Parameter	Condition [MHz]	Unit	Minimum ¹	Typical ²	Maximum ¹
Insertion Loss	617-652	dB		2.7	3.2
Ripple Deviation	617-652	dB		1.7	2.2
VSWR of Rx Port	617-652			1.7	2.0
VSWR of Ant Port	617-652			1.8	2.0
Absolute Attenuation	10-600	dB	30	36	
	663-698	dB	40	47	
	709-740	dB	30	37	
	776-793	dB	30	37	
	793-805	dB	30	37	
	824-849	dB	30	37	
	1058-1138	dB	35	41	
	1163-1204	dB	39	44	
	1233-1281	dB	40	47	
	1461-1484	dB	50	57	
	1653-1698	dB	50	56	
	1710-1755	dB	48	54	
	1850-1920	dB	45	50	
	1851-1956	dB	45	49	
	2305-2315	dB	40	47	
	2327-2407	dB	40	46	
	2400-2500	dB	40	46	
	2468-2608	dB	40	46	
2922-2967	dB	40	46		
4037-4162	dB	53	58		
4317-4472	dB	45	50		
4900-5950	dB	35	44		

Tx to Rx

Tx to Rx		Specification			
Parameters	Conditions [MHz]	Unit	Minimum ¹	Typical ²	Maximum ¹
Isolation	617-652	dB	50	53	
	617-652	dB	50	53	

1. Min/Max specifications are guaranteed over the indicated temperature range (unless otherwise noted).
2. Typical values are based on measurements at + 25 °C



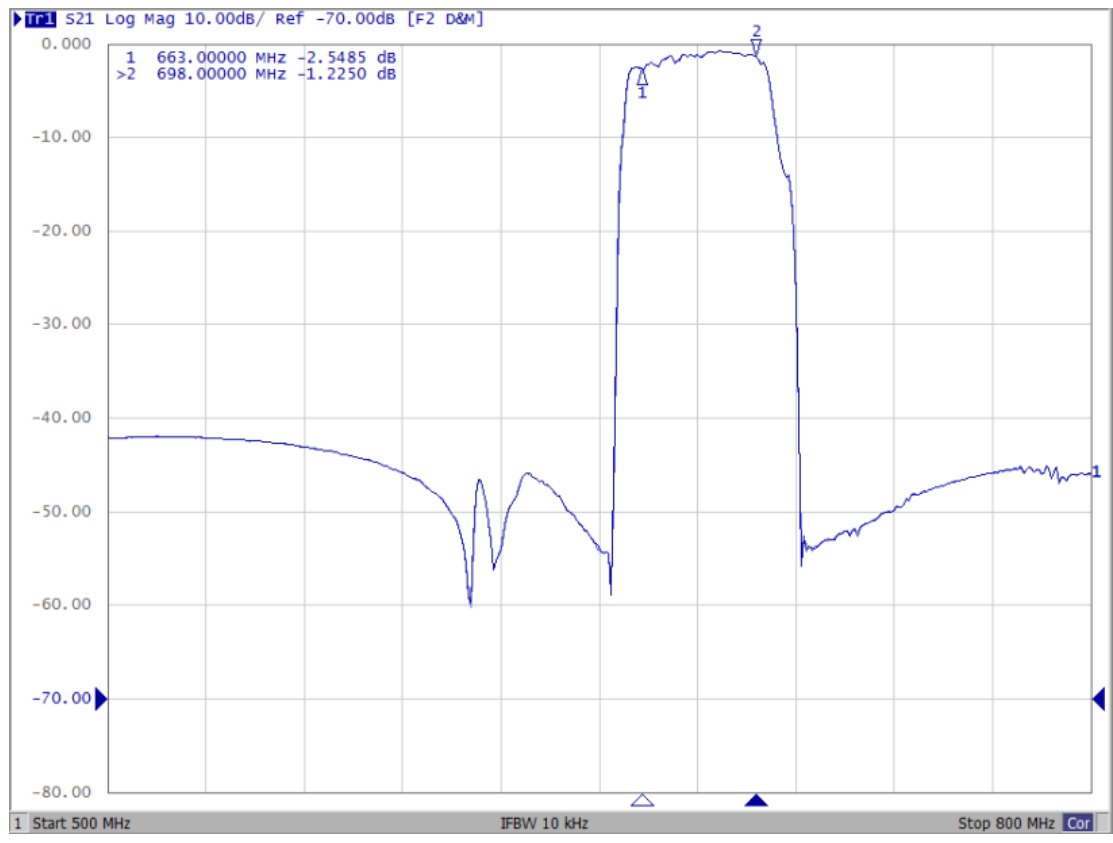
CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

NOTES:

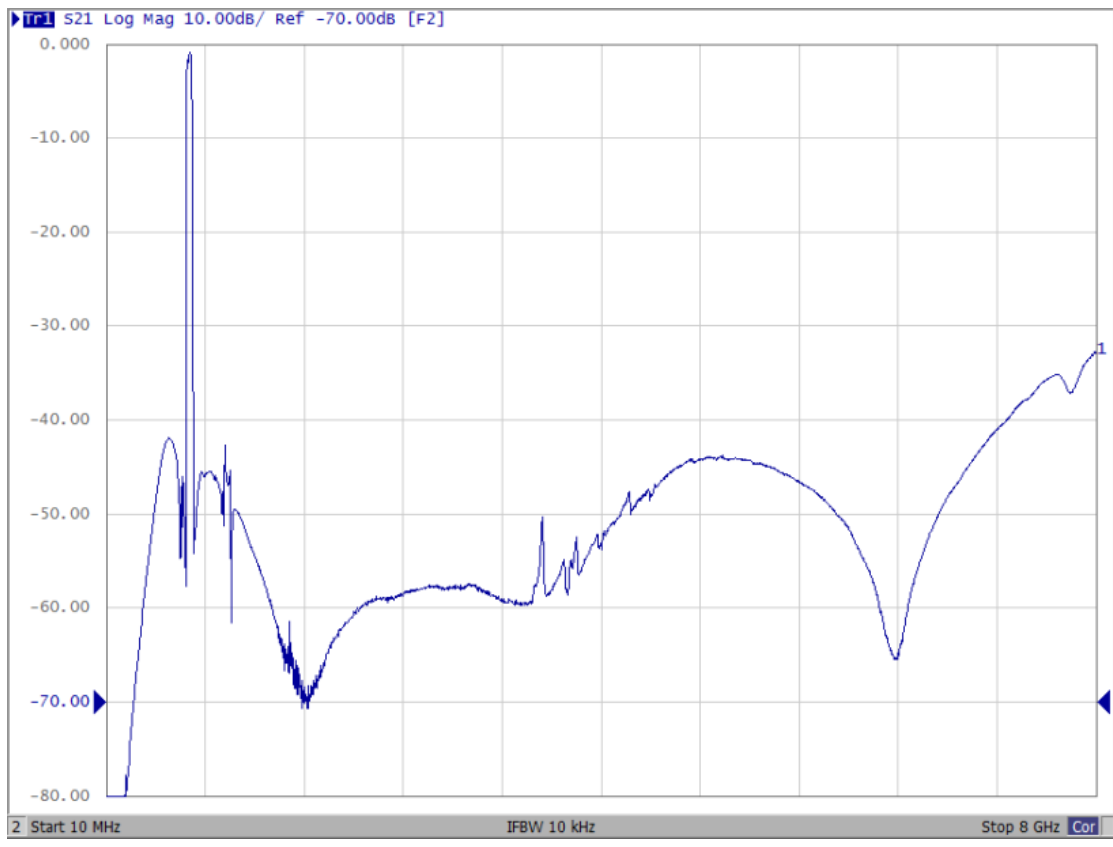
1. The design, manufacturing process, and specifications of this device are subject to change.
2. US or International patents may apply.
3. RoHS compliant from the first date of manufacture.

FREQUENCY CHARACTERISTICS: Tx to Ant

Narrowband



Wideband

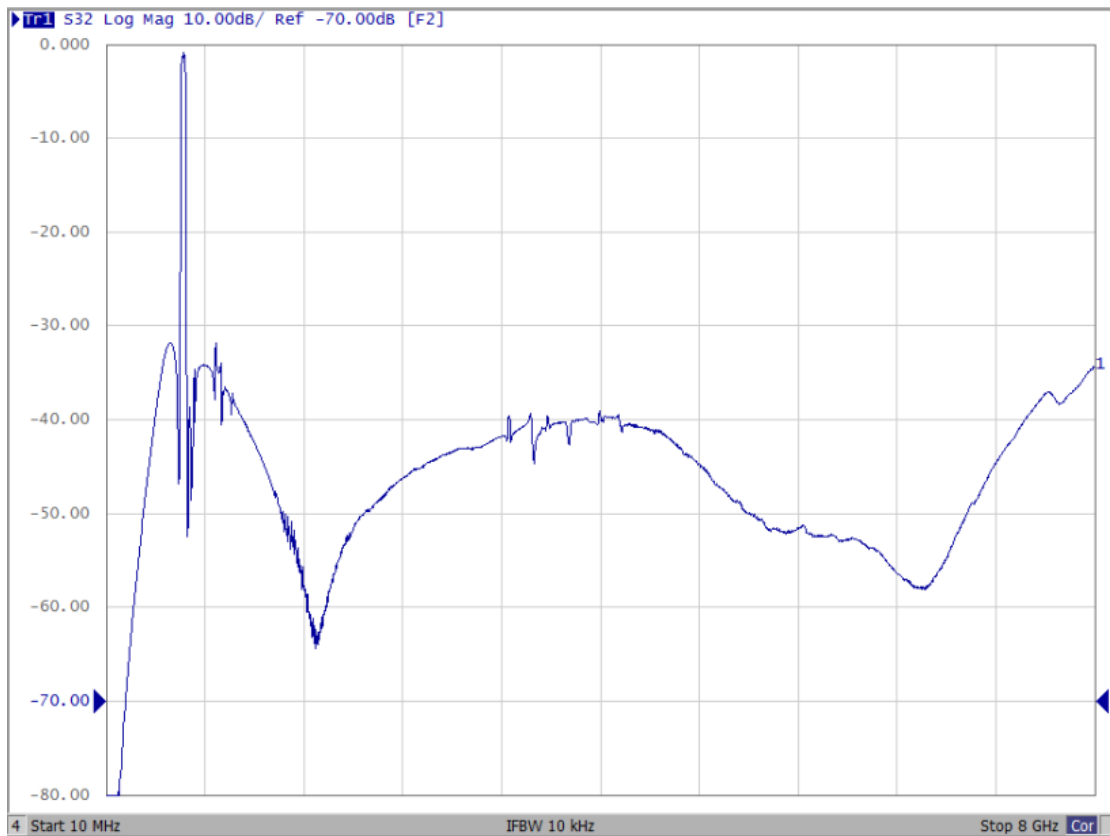


Ant to Rx

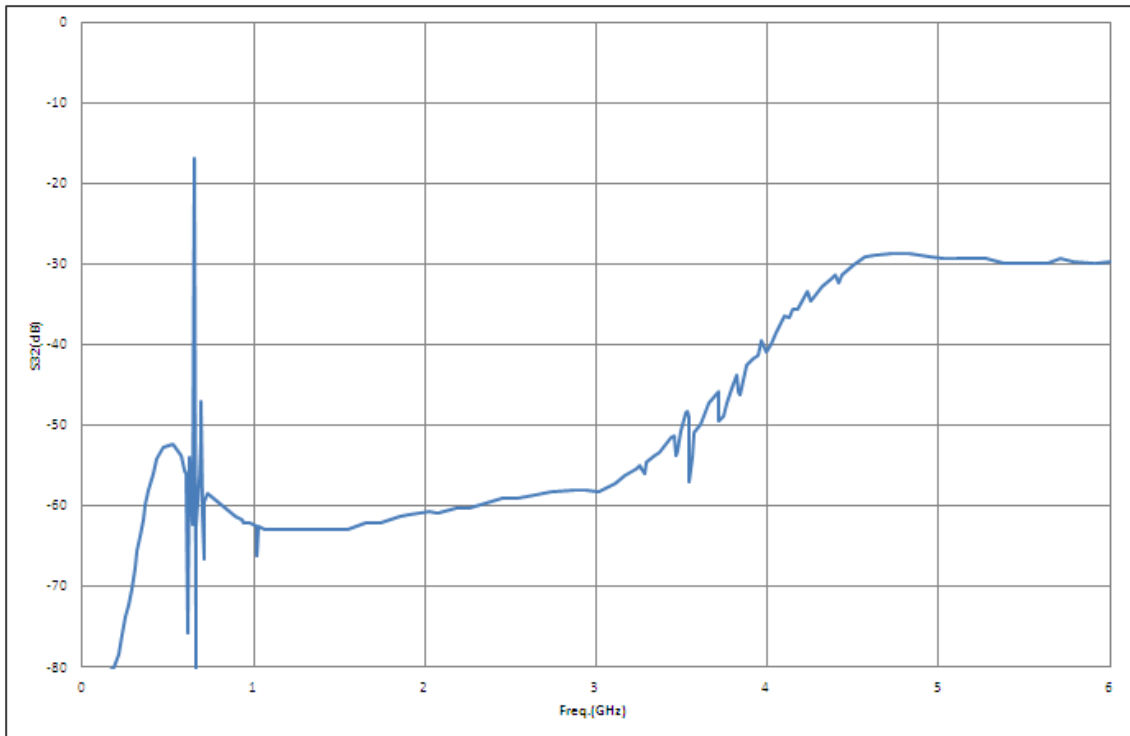
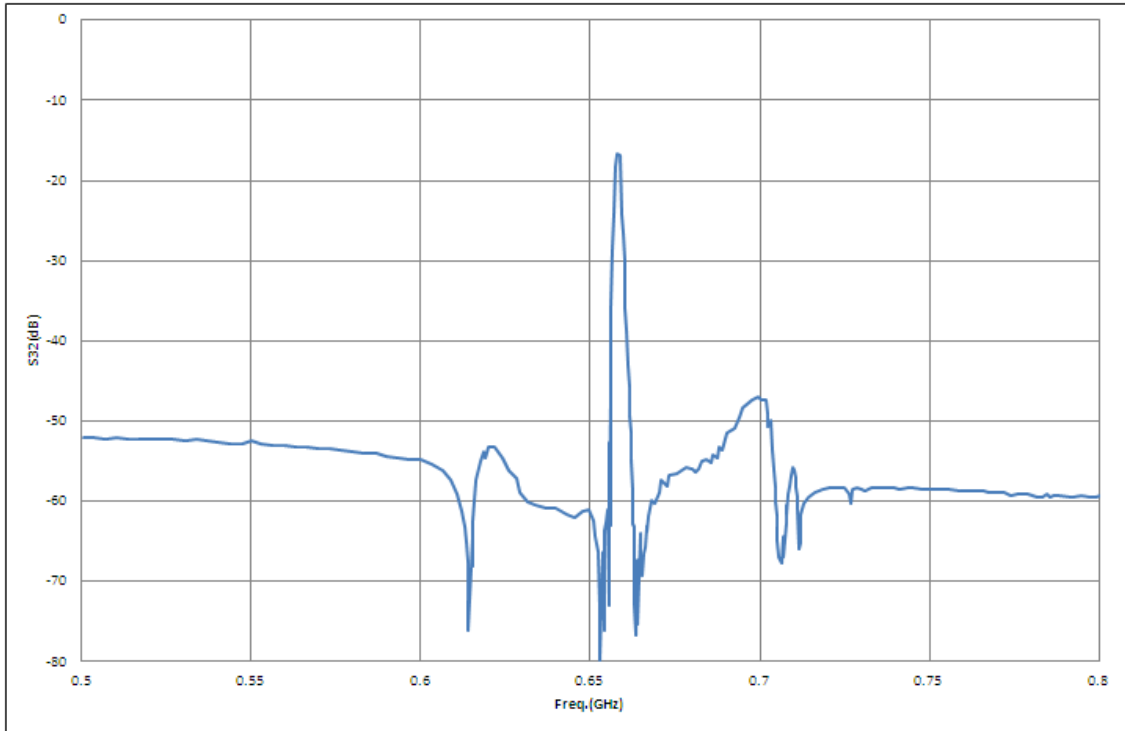
Narrowband



Wideband

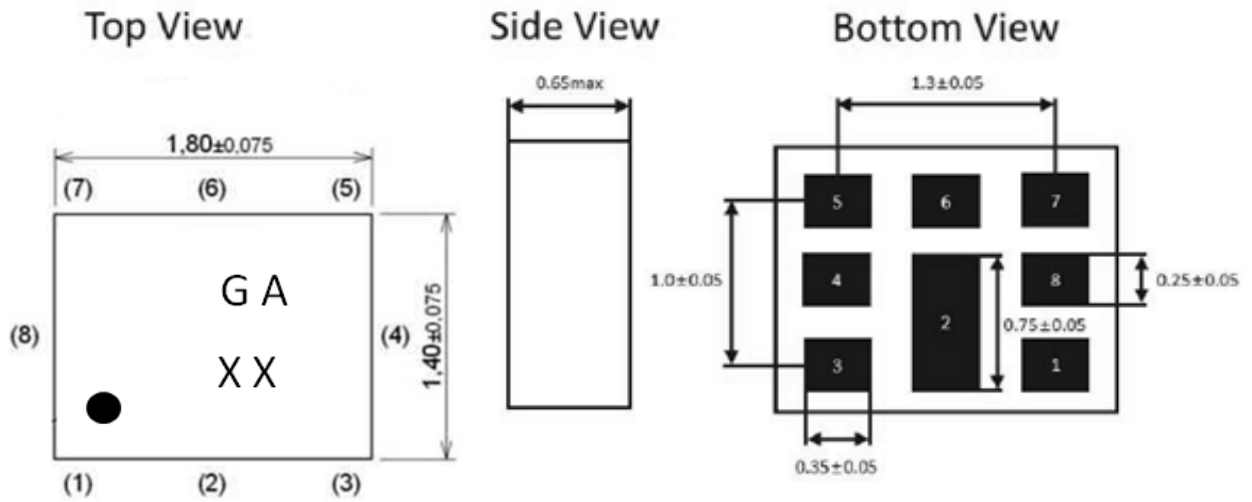


Tx to Rx Port



OUTLINE DRAWING (Mass Production):

Package & Dimensions



Marking Description	
XX	Date Code

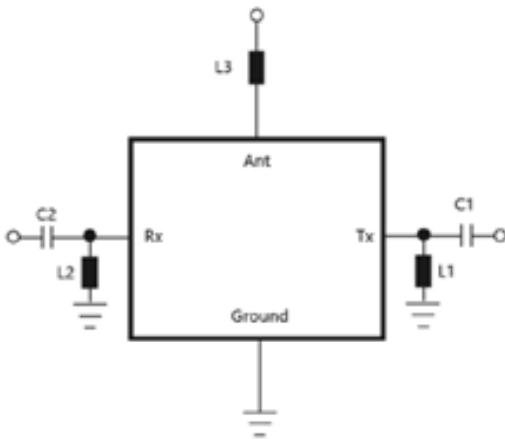
Pin Configuration	
3	Tx
1	Rx
6	Antenna
2,4,5,7,8	Ground

Date Code X1->Year code X2->Date Code

Year Code	1	2	3	4	5	6	7	8	9	10	11	12
2020/2024	1	2	3	4	5	6	7	8	9	A	B	C
2021/2025	D	E	F	G	H	J	K	L	M	N	P	Q
2022/2026	R	S	T	U	V	W	X	Y	Z	a	b	d
2023/2027	e	f	g	h	j	k	m	n	q	r	t	y

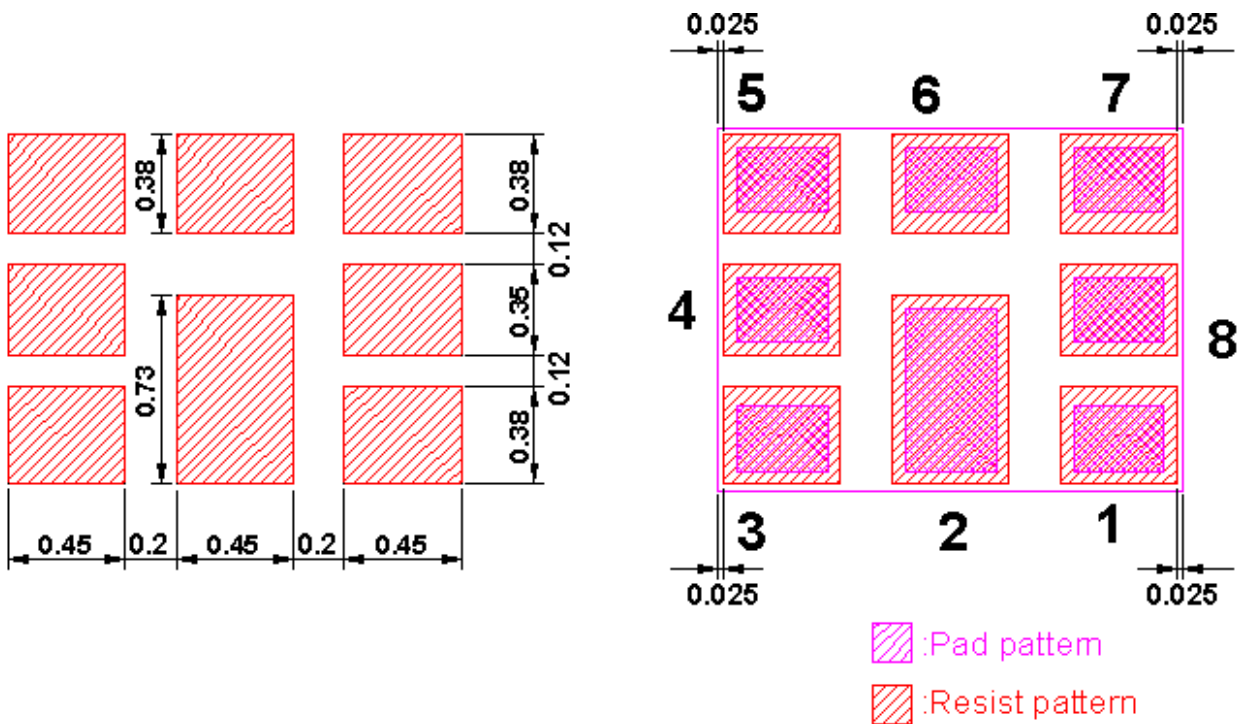
Date Code	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th		
code	1	2	3	4	5	6	7	8	9	A		
Date	11st	12nd	13rd	14th	15th	16th	17th	18th	19th	20th		
code	B	C	D	E	F	G	H	J	K	L		
Date	21st	22nd	23rd	24th	25th	26th	27th	28th	29th	30th	31th	
code	M	N	P	Q	R	S	T	U	V	W	X	

Evaluation Circuit



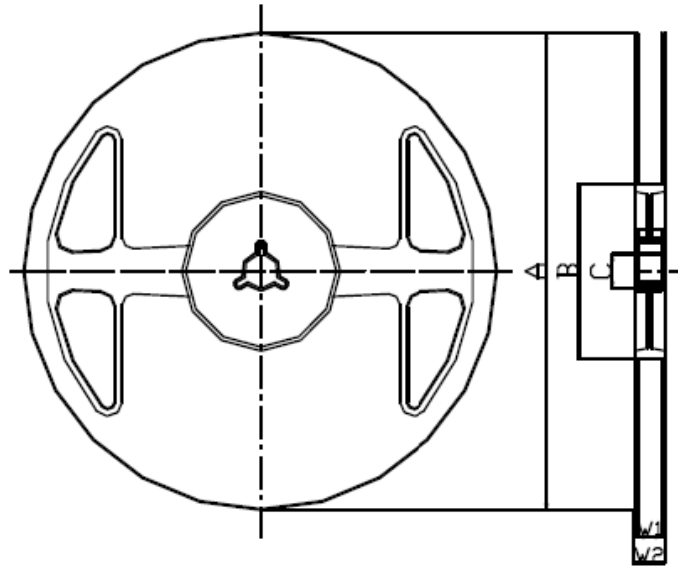
Port	Matching Component ¹
Tx	L1: 18 nH C1:3.9 pF
Rx	L2: 18 nH C2:3.9 pF
Ant	L3: 12.0 nH

FOOTPRINT:



PACKING:
REEL DIMENSION

Reel Count:
7" = 3000
13" = 10,000



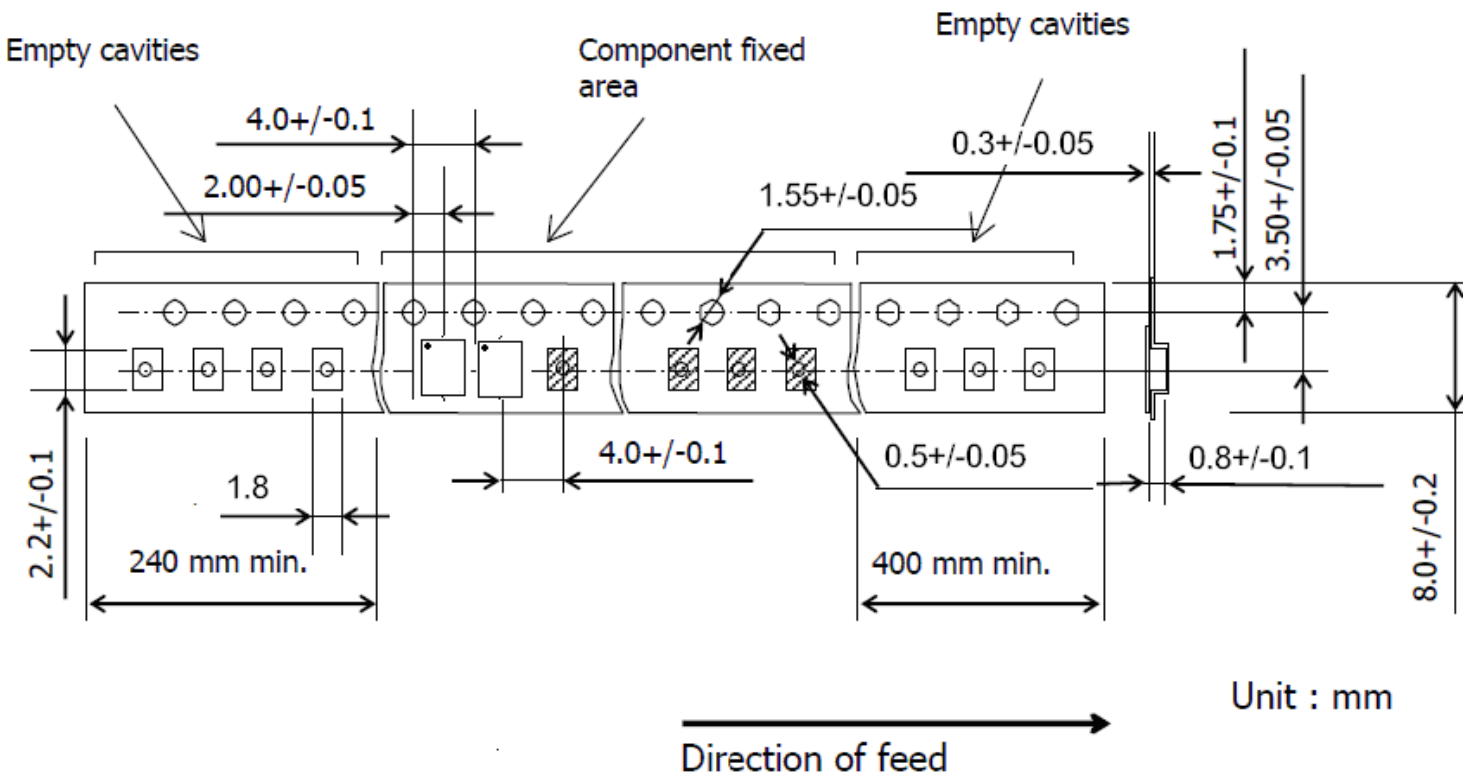
Materials of Reel

Material : Polystyrene + Carbon
 Characteristics : Conforms to EIAJ-ET-7200A
 Color : Black
 Surface resistance (reference value) : $10^9\Omega/\text{sq Max.}$

Unit : mm

Code	Quantity	A	B	C	W1	W2
Z	3,000 pcs	$\phi 180.0 +0.0/-1.5$	$\phi 66.0 +/-0.5$	$\phi 13.0 +/-0.2$	$9.0 +1.0/-0.0$	$11.4 +/-1.0$

TAPE DIMENSION



Unit : mm

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 245~260°C peak (min. 10sec).
4. Time : 2 times.

