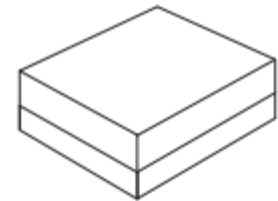


- RF SAW Filter with Single-ended input and Single Ended Output
- 1.1 x 0.9 x 0.5 mm Surface-Mount Case
- $Z_S = 50 \text{ ohm}$, $Z_L = 50 \text{ ohm}$
- Complies with Directive 2002/95/EC (RoHS)
- Moisture Sensitivity Level: 2A

Absolute Maximum Ratings

Rating	Value	Units
Maximum Input Power	+13	dBm
Maximum DC Voltage Between any Two Terminals	3	V
Operating Temperature Range	-40 to +105	°C
Storage Temperature Range in Tape and Reel	-40 to +85	°C
Maximum Soldering Profile	265 °C for 10 s	
Moisture sensitivity level: 2A		



SM1109-5

Electrical Characteristics

Characteristic		Unit	Min.	Typ.	Max.
Center Frequency	Fc	MHz	-	1189	-
Insertion Loss (1164~1189 MHz)	IL	dB	-	1.5	2.3 ₍₁₎
Insertion Loss (1164~1189 MHz)	IL	dB	-	1.5	2.4
Insertion Loss (1189~1214 MHz)	IL	dB	-	1.8	2.3 ₍₁₎
Insertion Loss (1189~1214 MHz)	IL	dB	-	1.8	2.5
Amplitude Ripple (1164~1189 MHz)		dB _{p-p}	-	0.3	1.3
Amplitude Ripple (1189~1214 MHz)		dB _{p-p}	-	0.5	1.4
VSWR (1164~1214 MHz)			-	1.8	2.1
Group Delay Deviation (1189~1214 MHz)		ns	-	9	15 ₍₁₎
Group Delay Deviation (1189~1214 MHz)		ns	-	9	20
Attenuation (refer to 0 dB)					
100~814 MHz		dB	35	39	-
814~849 MHz		dB	33	39	-
849~980 MHz		dB	30	37	-
980~1010 MHz		dB	35	38	-
1010~1100 MHz		dB	33	36	-
1100~1130 MHz		dB	20	30	-
1250~1427 MHz		dB	25	32	-
1427~1463 MHz		dB	33	36	-
1710~2025 MHz		dB	33	38	-
2300~2690 MHz		dB	28	32	-
2690~3000 MHz		dB	25	30	-
3000~6000 MHz		dB	20	23	-
Temperature Coefficient		ppm/K	-	-36	-

(1). Temperature range -20°C to +85°C

Case Style	1.1 x 0.9 x 0.5 mm
Lid Symbolization	<u>B</u>

Connection	Terminal
Input	1
Output	4
Ground	2, 3, 5

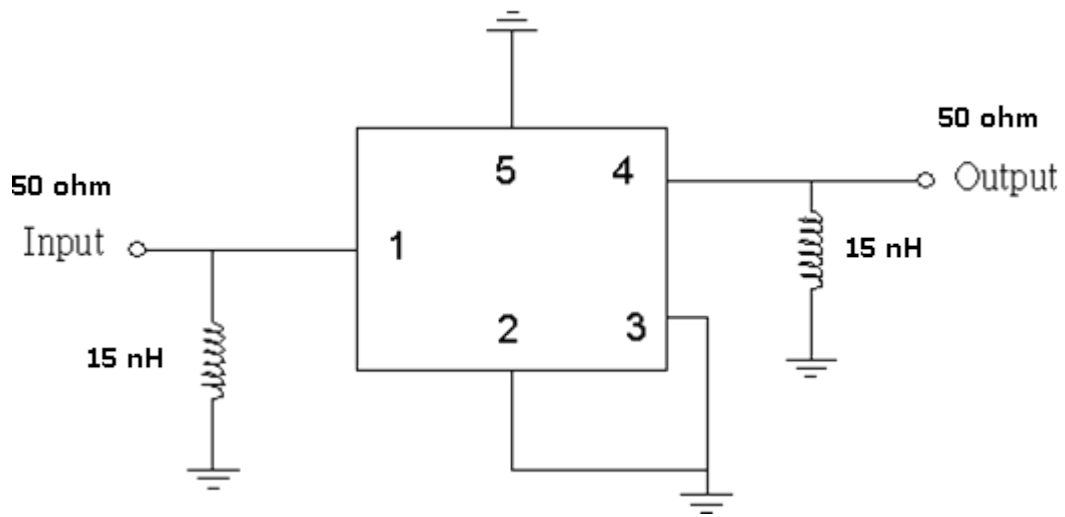


CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

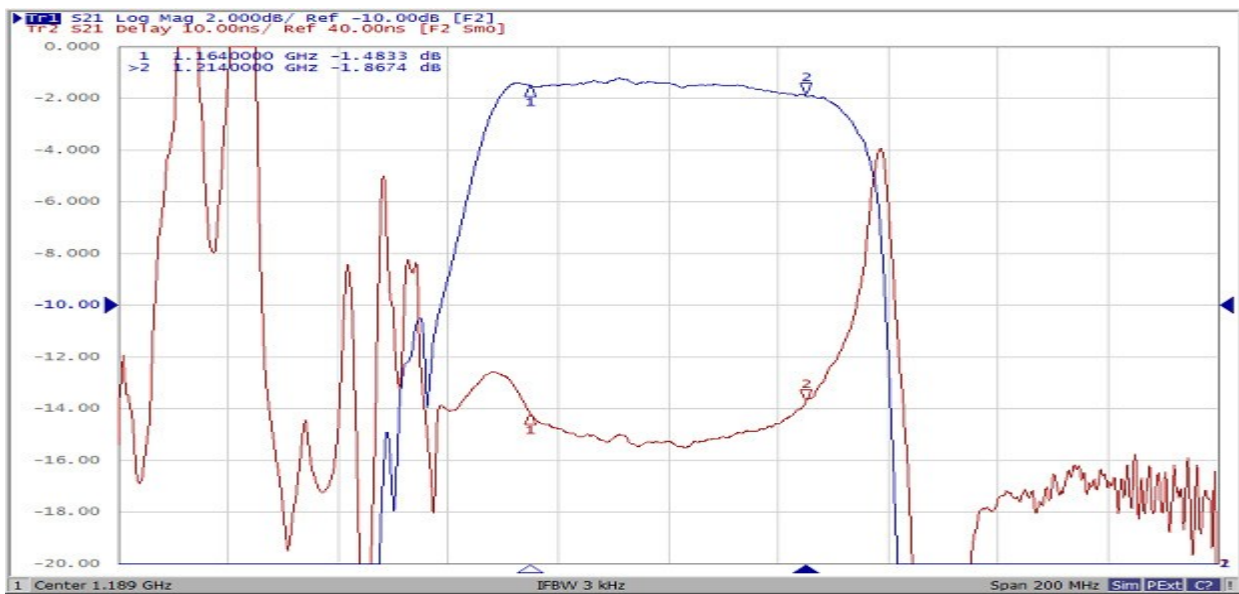
NOTES:

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.

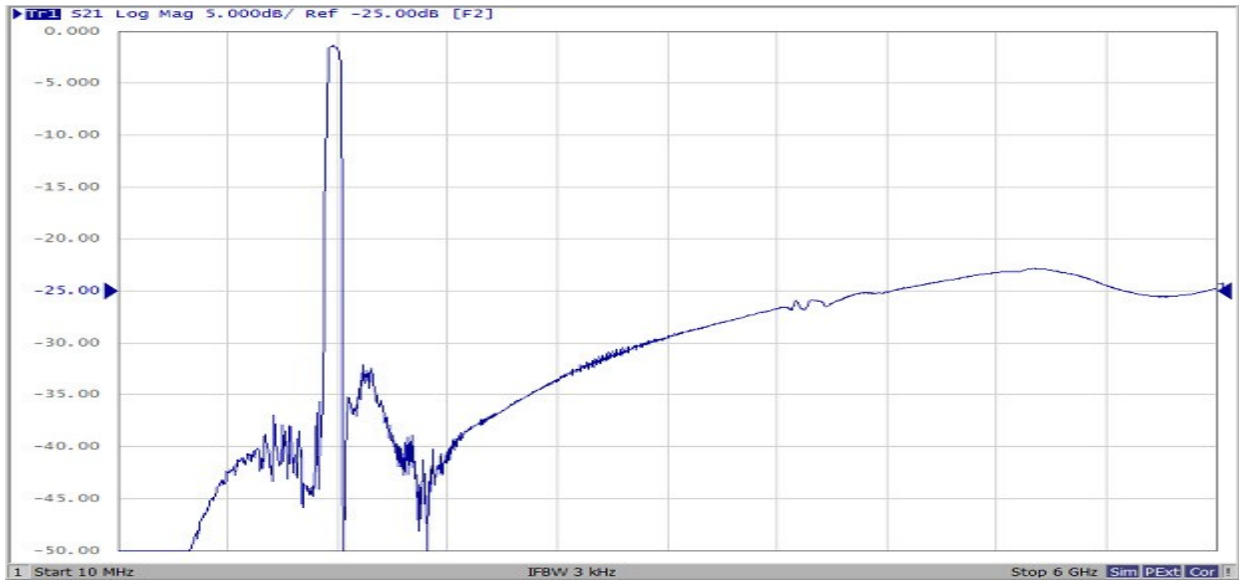
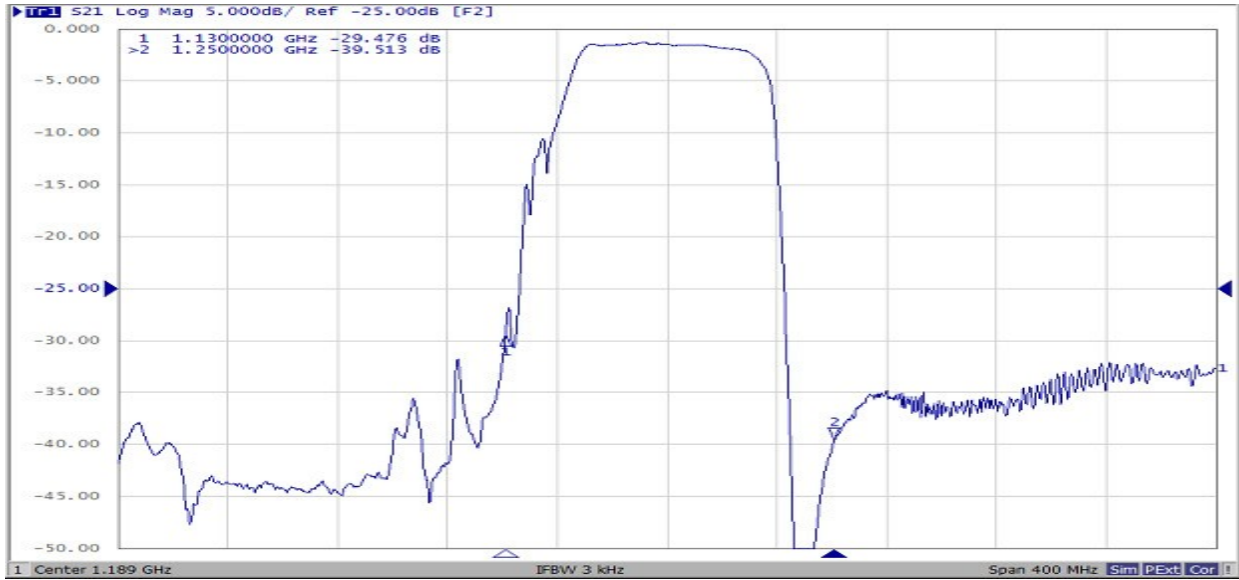
Filter Performance with Matching



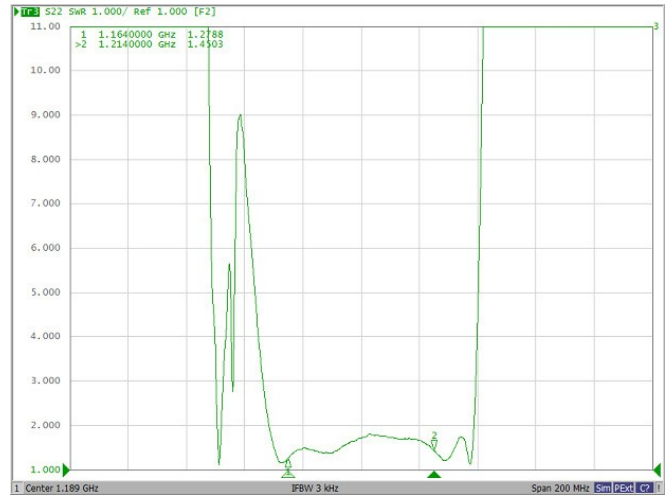
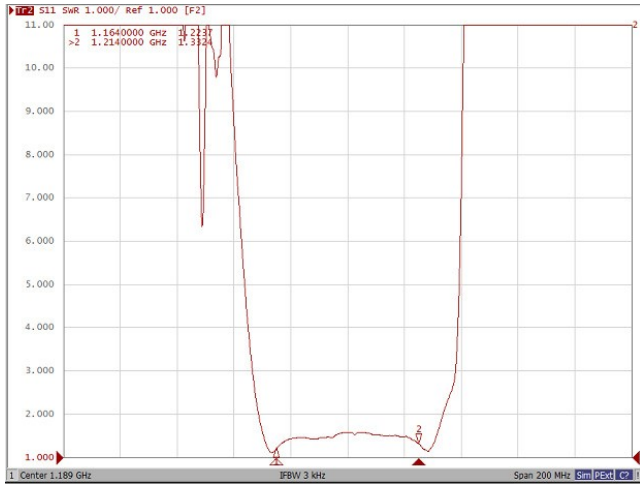
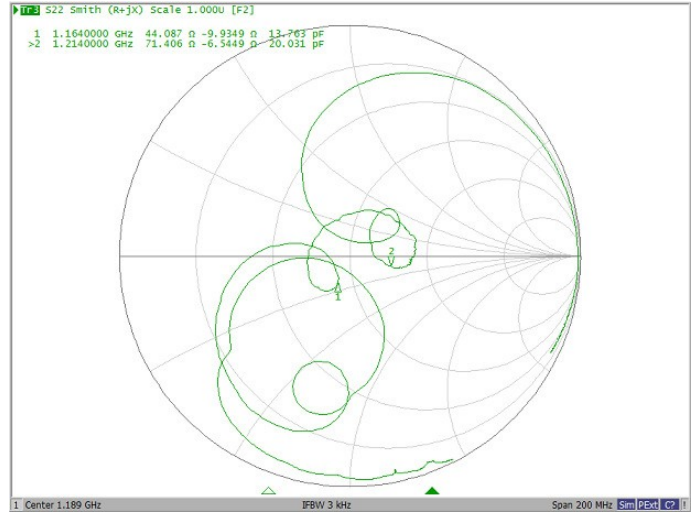
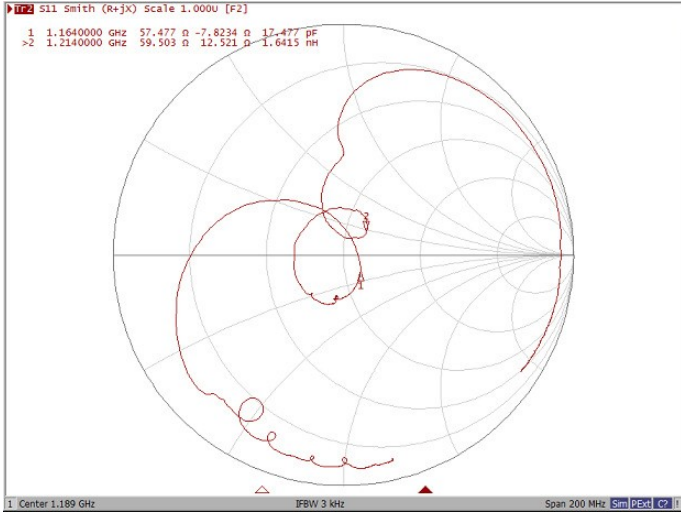
Frequency Characteristics



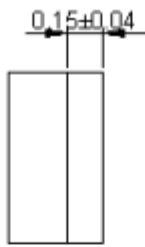
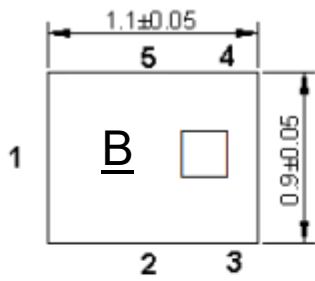
Filter Performance with Matching



Filter Performance with Matching



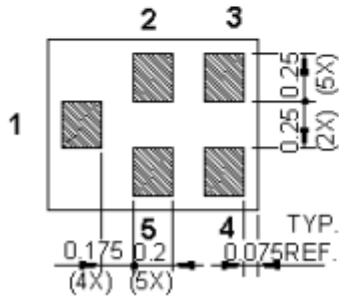
Outline Drawing



Materials	
Solder Pad Plating	0.3 to 1.0 μm Gold over 1.27 to 8.89 μm Nickel
Lid Plating	
Body	Molding



All tolerances are ± 0.05 mm unless otherwise specified
 Coplanarity : 0.1 mm max.
 1 to 5 : Pin No.
 Unit : mm

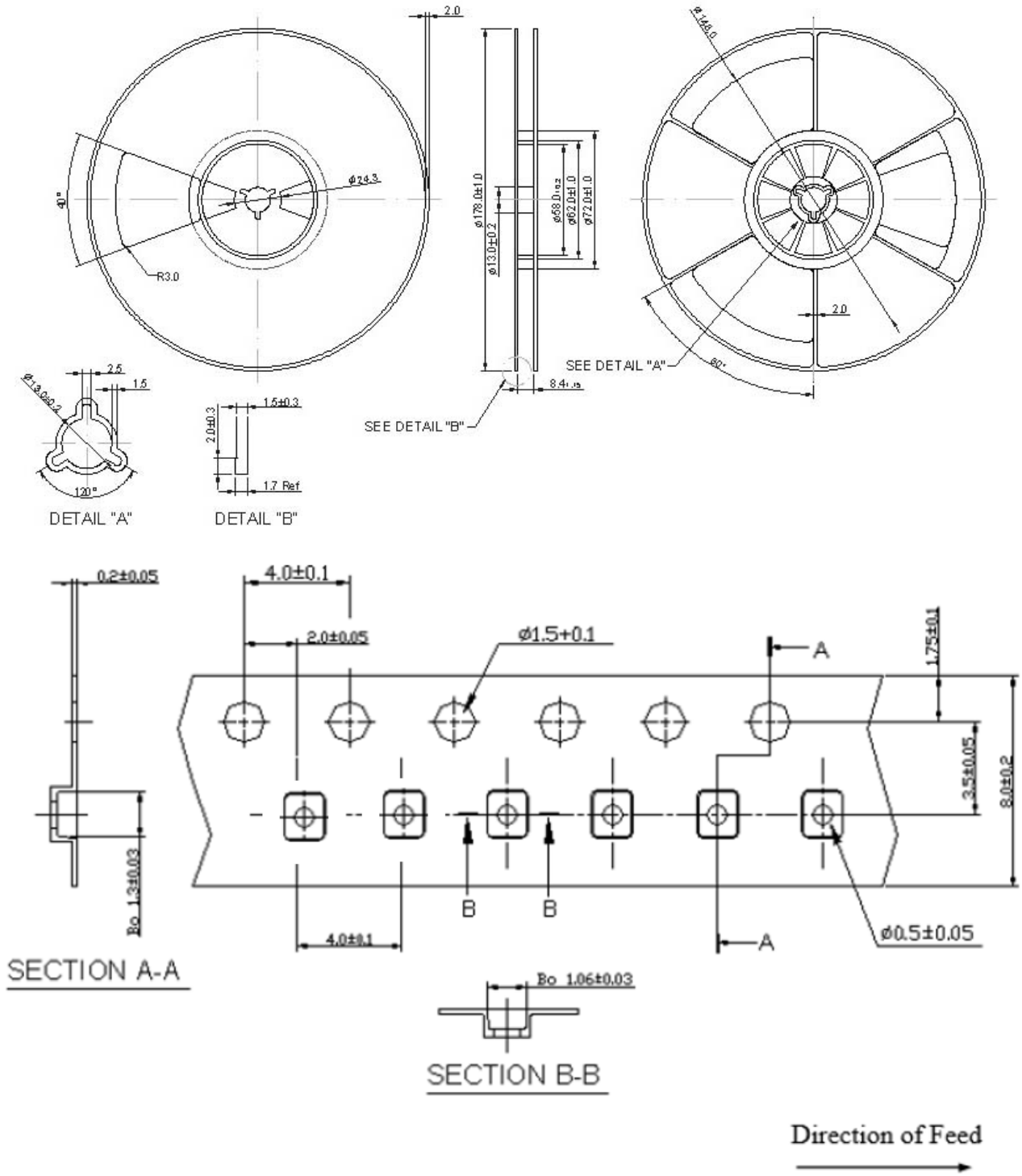


1 : Input
 4 : Output
 2, 3, 5 : Ground

Tape and Reel Specification

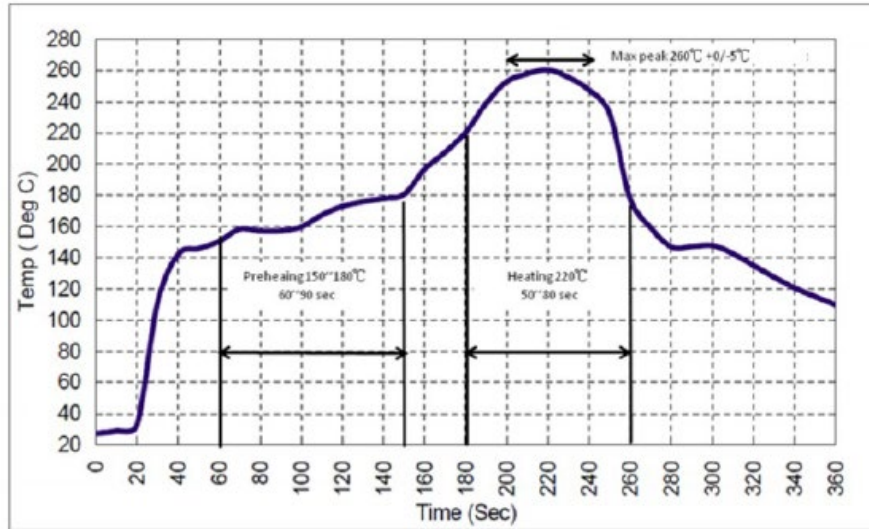
Tape and Reel Standard per ANSI/EIA-481

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



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 (10 seconds).
4. Time: 5 times maximum.



Year/Month Code (Follow the table)

Year/Month	1	2	3	4	5	6	7	8	9	10	11	12
2013	A	B	C	D	E	F	G	H	J	K	L	M
2014	N	P	Q	R	S	T	U	V	W	X	Y	Z
2015	a	b	c	c	e	f	g	h	j	k	l	m
2016	n	p	q	r	s	t	u	v	w	x	y	z
2017	A	B	C	D	E	F	G	H	J	K	L	M
2018	N	P	Q	R	S	T	U	V	W	X	Y	Z
2019	a	b	c	d	e	f	g	h	i	k	l	m
2020	n	p	q	r	s	t	u	v	w	x	y	z