SAW Filter 1582.47 MHz

MODEL NO.: TA1954A REV. No.: 2.0

RoHS Compliant

Lead-free soldering

A. MAXIMUM RATING:

1. Maximum Input Power Level: 15 dBm (In passband)
2. DC Voltage: +/-5 V
3. Operating Temperature Range: -30 ℃ to +85 ℃
4. Storage Temperature Range: -40 ℃ to +100 ℃
5. Moisture Sensitivity Level: Level 1 (MSL 1)
6. ESD: 50 V(MM), 100 V(HBM)

Electrostatic **S**ensitive **D**evice (**ESD**)

B. ELECTRICAL CHARACTERISTICS:

Terminating source impedance: Zs = 50 Ω (Single-ended)

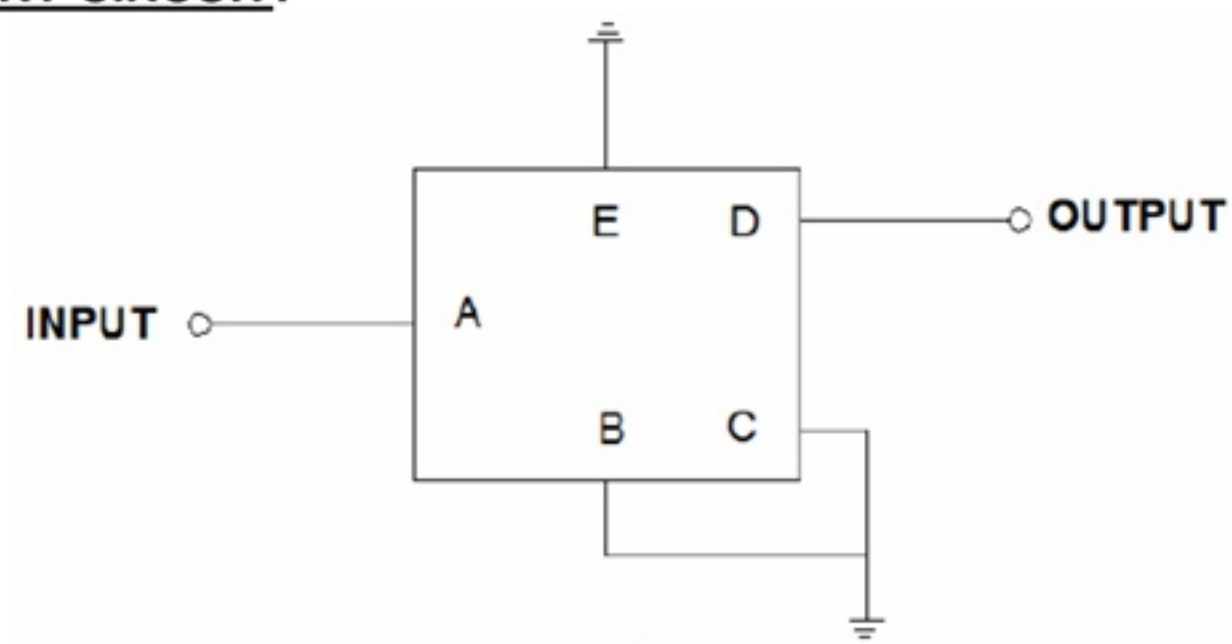
Terminating load impedance: Z_L = 50 Ω (Single-ended)

Item		Unit	Min.	Typ.	Max.
Center Frequency **Fc**		MHz	-	1582.47	-
Insertion Loss	1574.42 ~ 1576.42 MHz	dB(*1)	-	1.2	1.7
	1597.55 ~ 1605.89 MHz	dB(*1)	-	1.8	2.5
	1559.05 ~ 1563.14 MHz	dB(*1)	-	1.7	2.5
Amplitude Ripple	1574.42 ~ 1576.42 MHz	dB	-	0.1	0.8
	1597.55 ~ 1605.89 MHz	dB	-	0.55	1.4
	1559.05 ~ 1563.14 MHz	dB	-	0.2	1.2
Group Delay Ripple	1574.42 ~ 1576.42 MHz	nsec	-	1.0	6.0
	1597.55 ~ 1605.89 MHz	nsec	-	4.0	12.5
	1559.05 ~ 1563.14 MHz	nsec	-	5.0	16.0
VSWR	1574.42 ~ 1576.42 MHz	-	-	1.5	2.1
	1597.55 ~ 1605.89 MHz	-	-	1.4	2.0
	1559.05 ~ 1563.14 MHz	-	-	1.5	2.0
Attenuation (Reference level from 0 dB)					

699 ~ 716 MHz	dB	43	47	-
777 ~ 787 MHz	dB	45	46.5	-
814 ~ 849 MHz	dB	45	46.5	-
880 ~ 915 MHz	dB	45	46.5	-
1427.9 ~ 1446.9 MHz	dB	45	53	-
1447.9 ~ 1462.9 MHz	dB	45	54	-
1710 ~ 1785 MHz	dB	47	54	-
1850 ~ 1915 MHz	dB	47	54	-
1920 ~ 1980 MHz	dB	47	54	-
2400 ~ 2500 MHz	dB	45	50	-
2500 ~ 2570 MHz	dB	45	50	-

(*1) Specification of insertion loss excludes loss that comes from the test board.

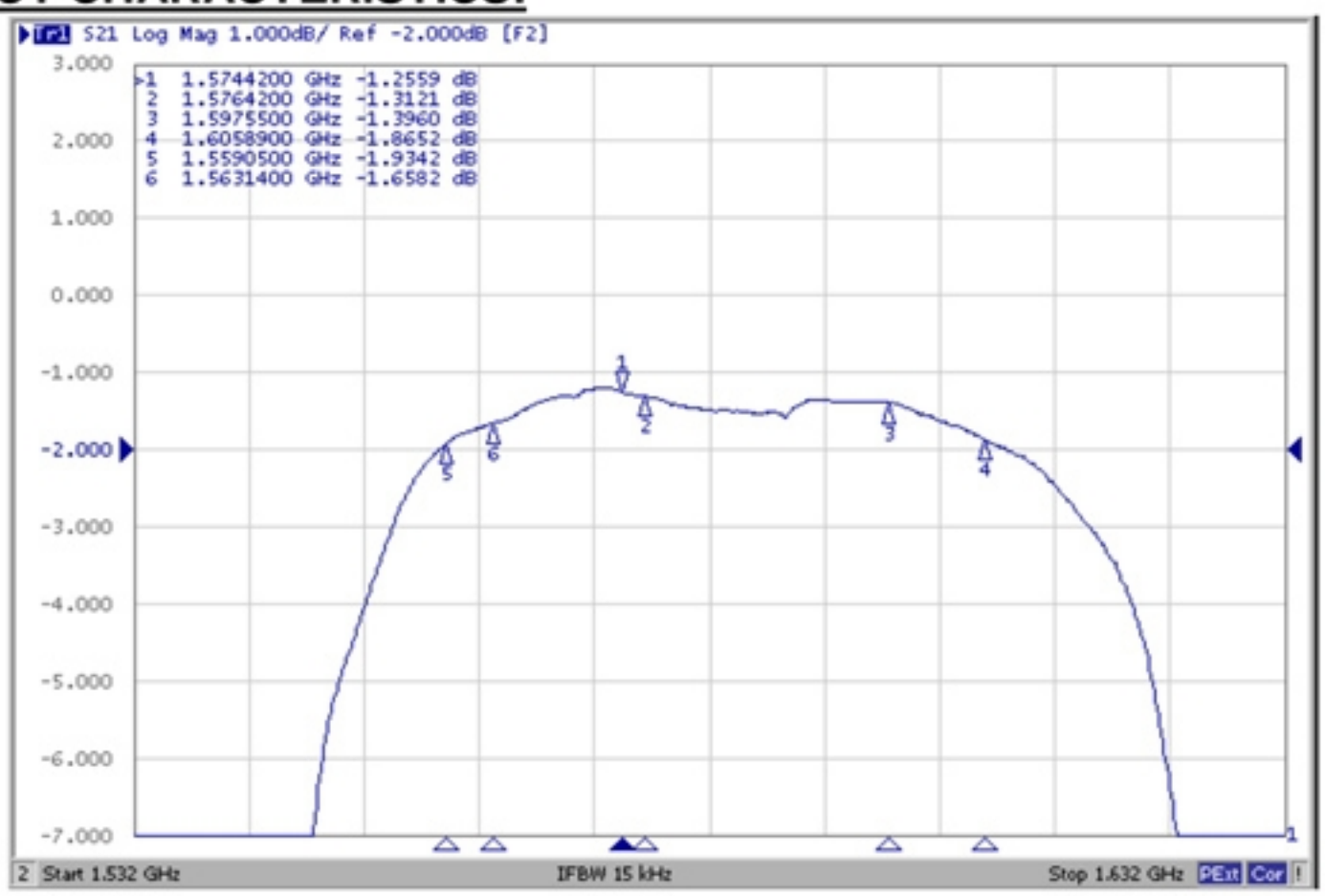
C. MEASUREMENT CIRCUIT:

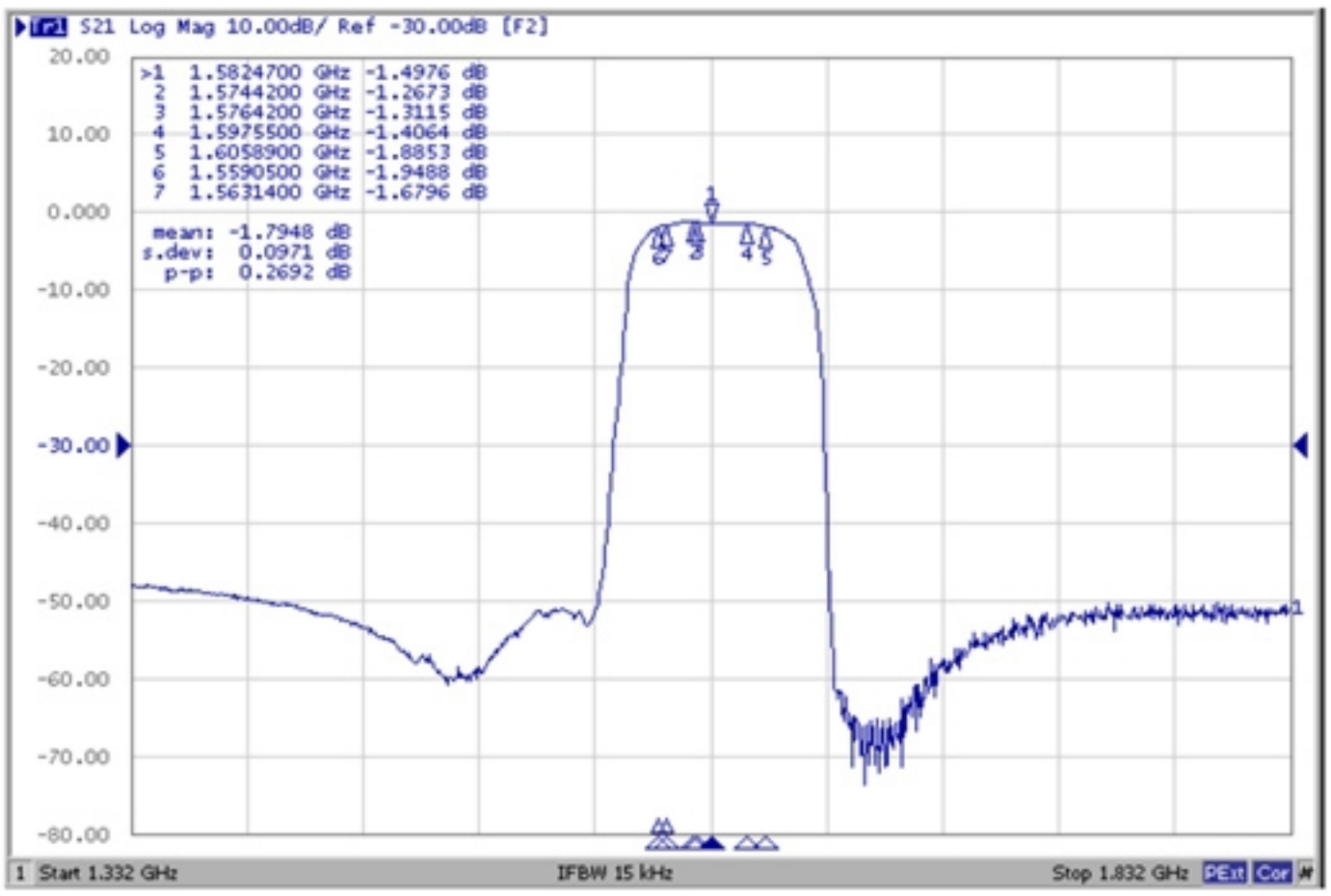


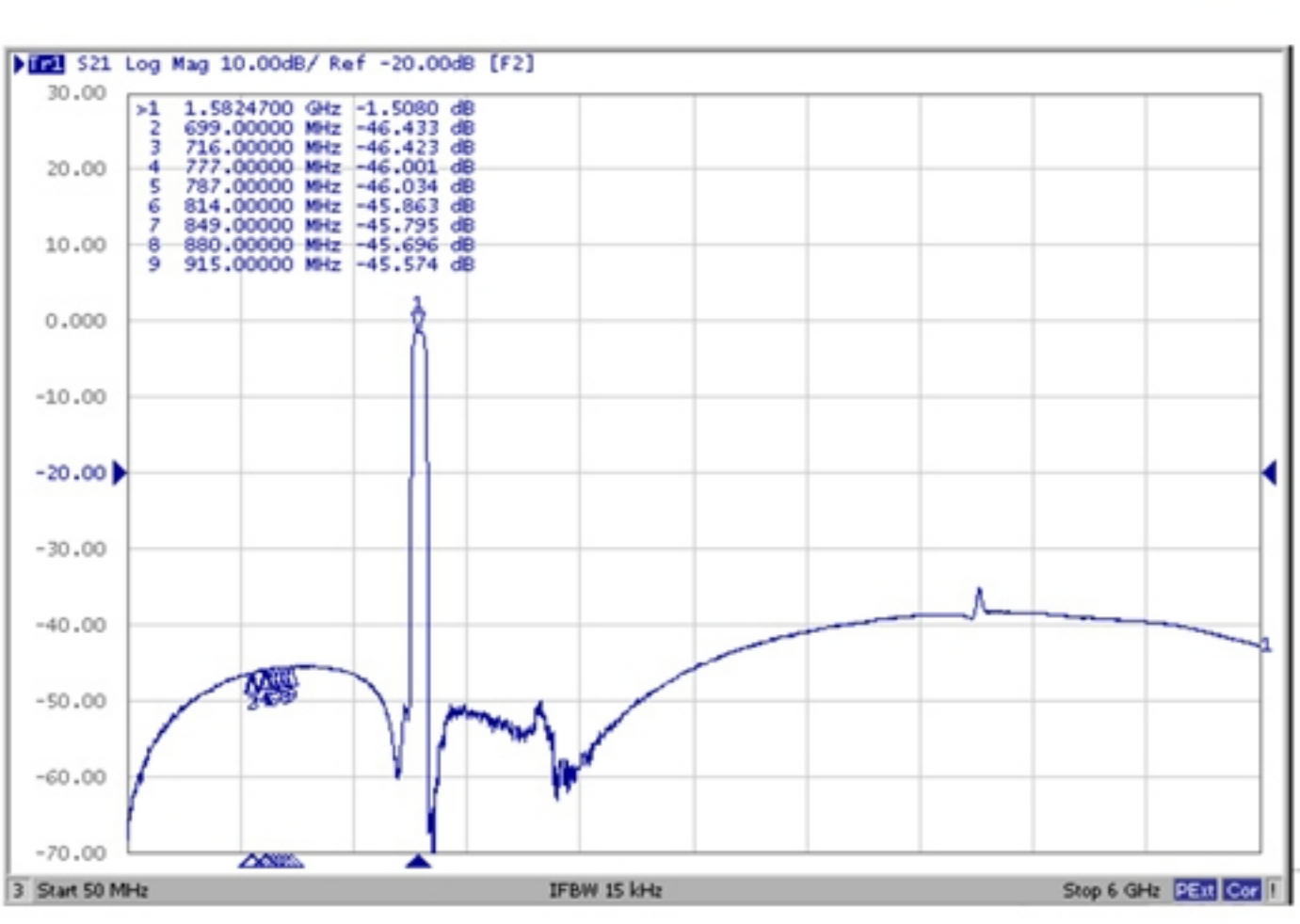
Source Impedance: 50 Ω

Load Impedance: 50 Ω

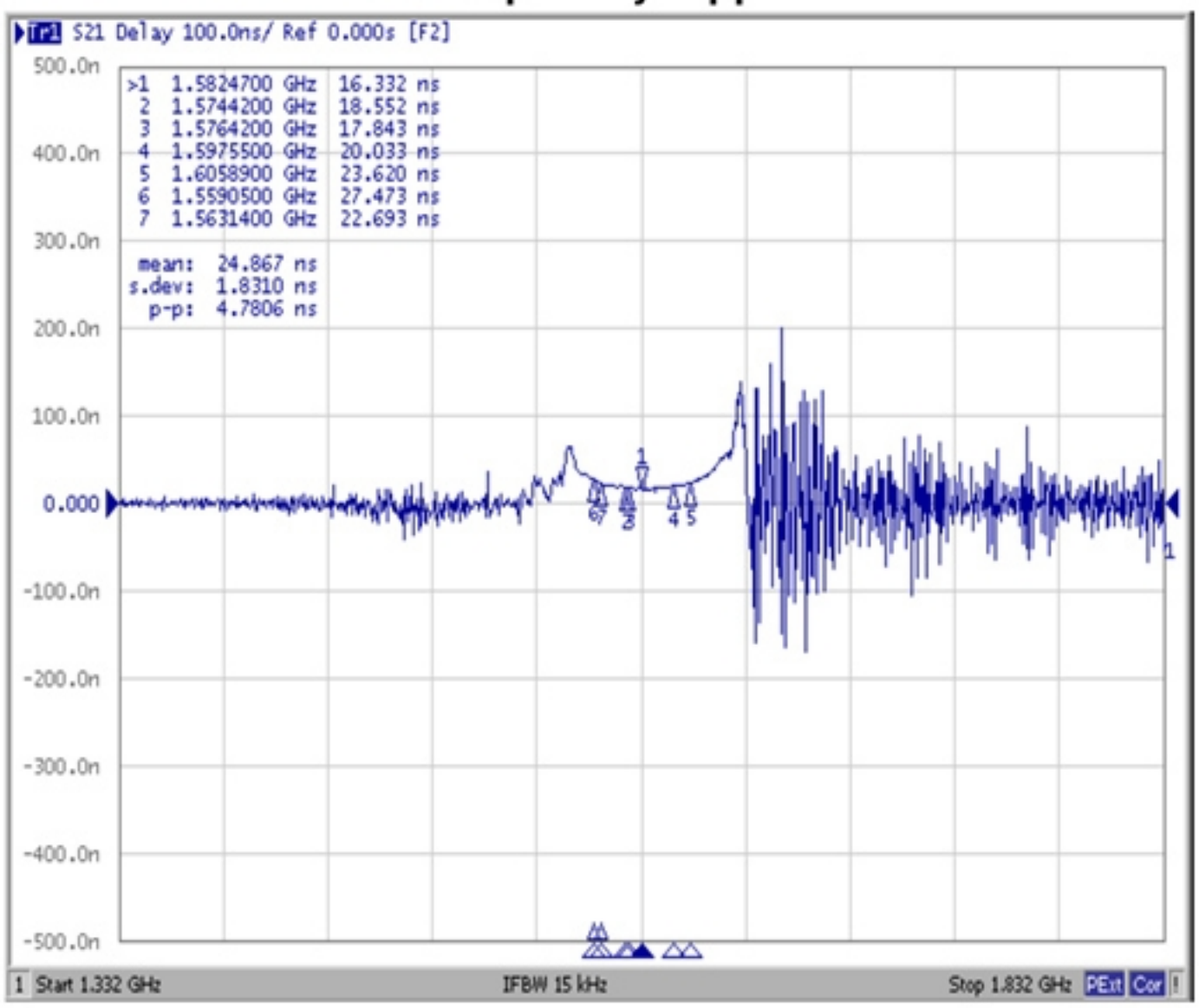
D. FREQUENCY CHARACTERISTICS:





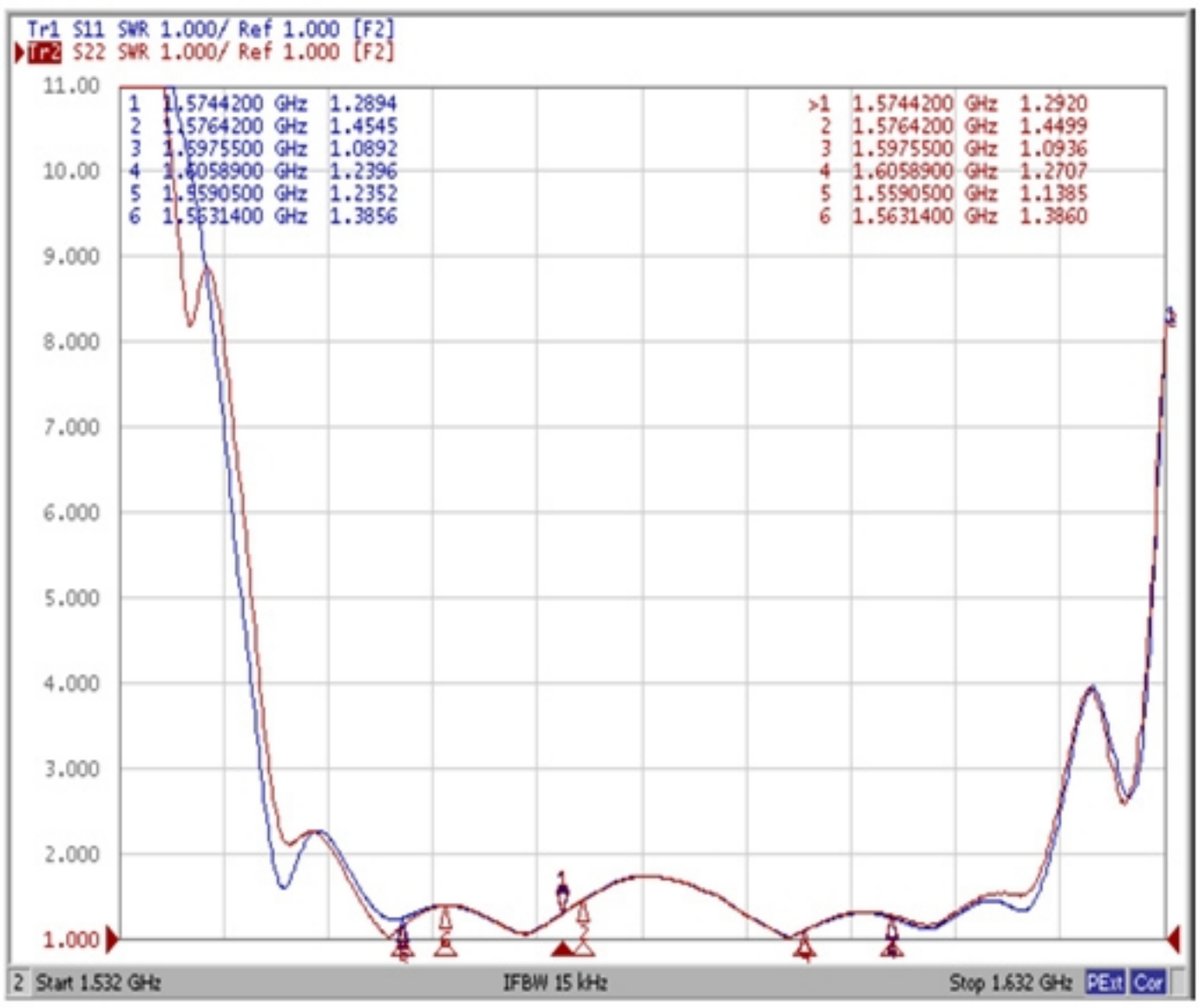


Group Delay Ripple

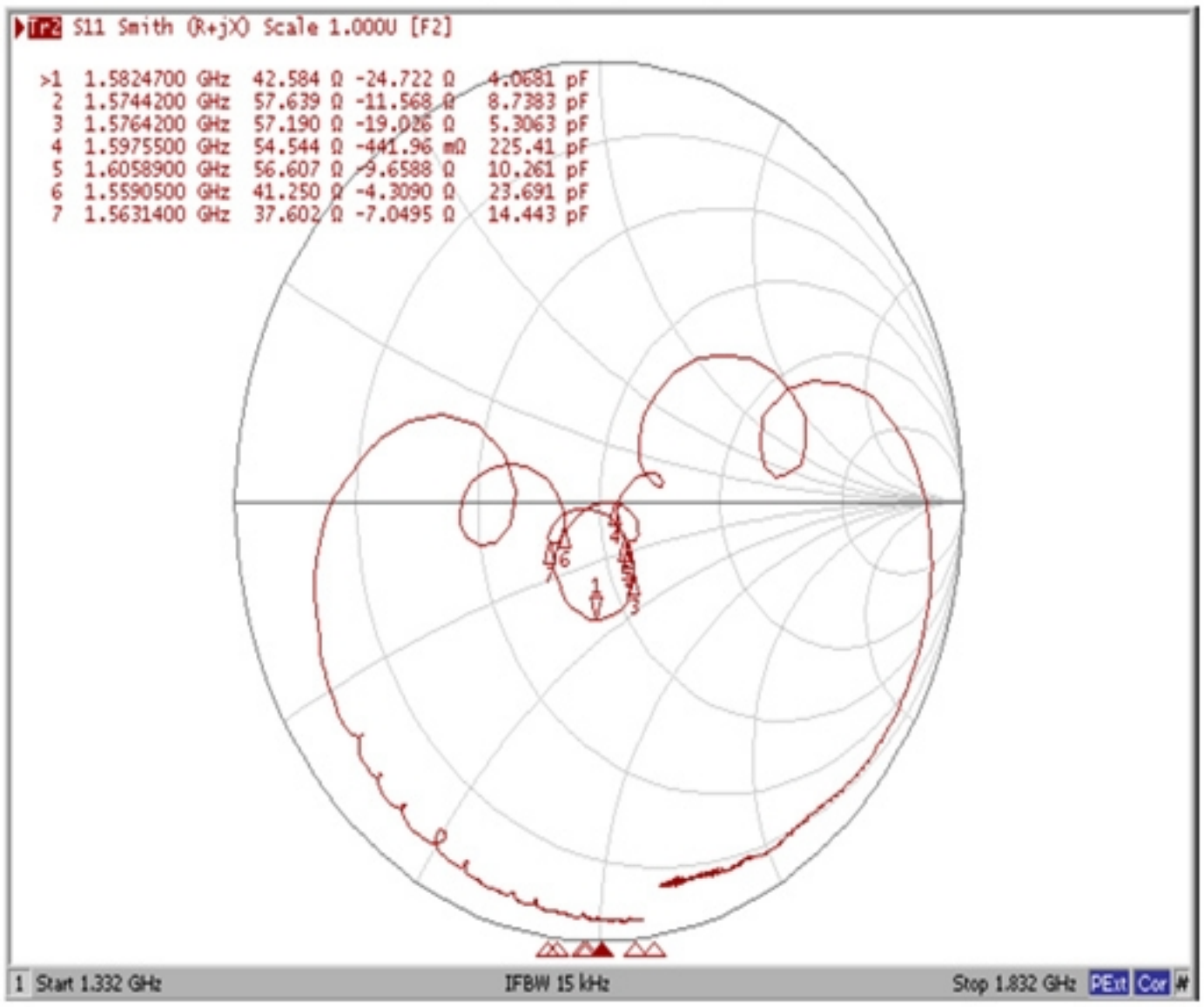


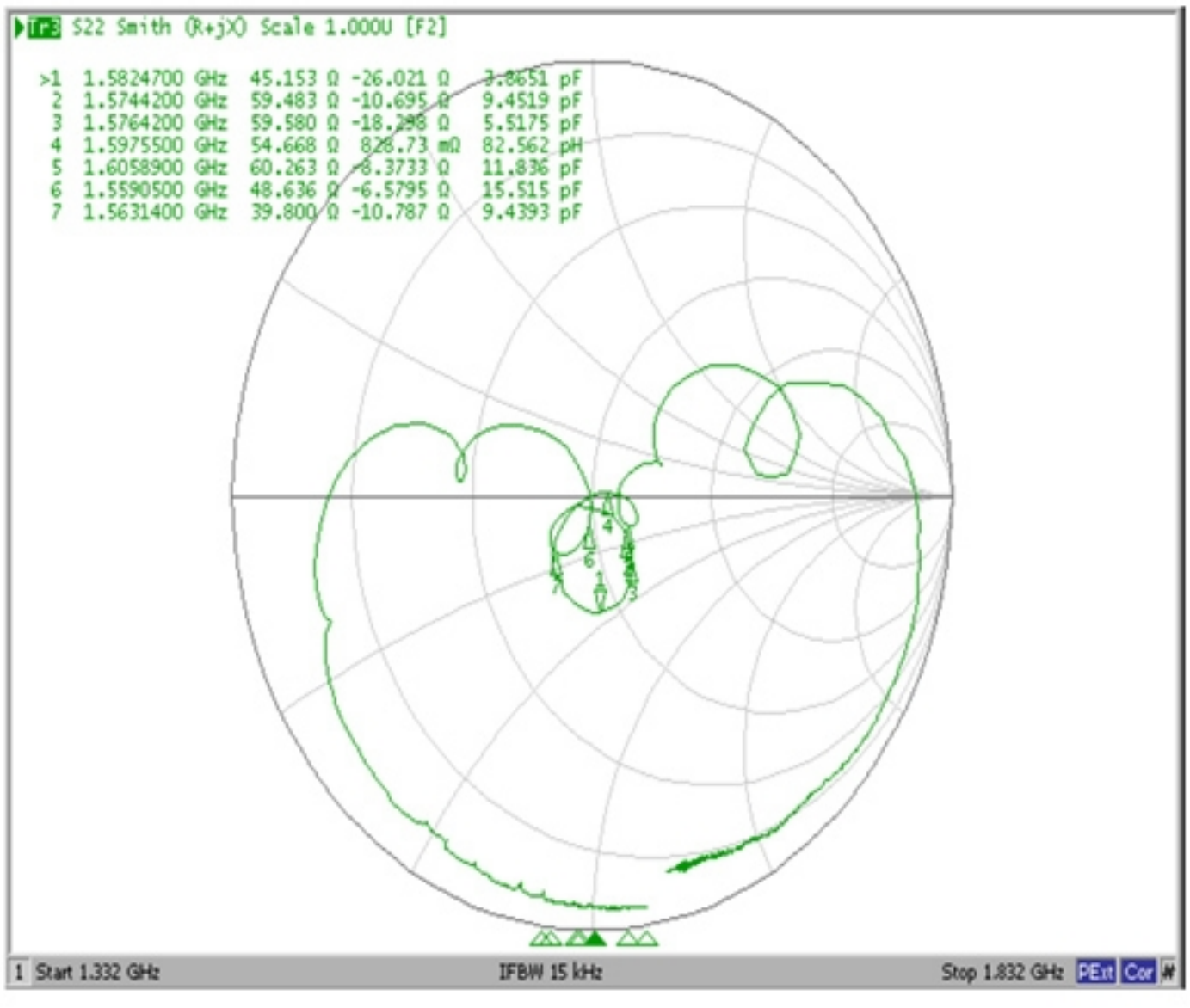
Reflection Functions:

VSWR

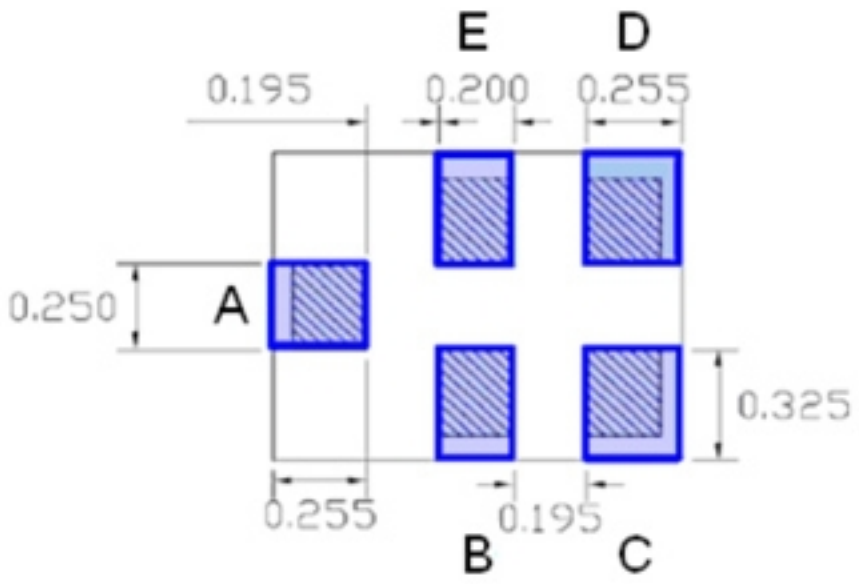


Smith Chart


Tr2 S11 Smith (R+jX) Scale 1.000U [F2]
>1 1.5824700 GHz 42.584 Ω -24.722 Ω 4.0681 pF
2 1.5744200 GHz 57.639 Ω -11.568 Ω 8.7383 pF
3 1.5764200 GHz 57.190 Ω -19.026 Ω 5.3063 pF
4 1.5975500 GHz 54.544 Ω -441.96 mΩ 225.41 pF
5 1.6058900 GHz 56.607 Ω -9.6588 Ω 10.261 pF
6 1.5590500 GHz 41.250 Ω -4.3090 Ω 23.691 pF
7 1.5631400 GHz 37.602 Ω -7.0495 Ω 14.443 pF
1 Start 1.332 GHz
IFBW 15 kHz
Stop 1.832 GHz
PExt
Cor


Tr3 S22 Smith (R+jX) Scale 1.000U [F2]
>1 1.5824700 GHz 45.153 Ω -26.021 Ω 3.8651 pF
2 1.5744200 GHz 59.483 Ω -10.695 Ω 9.4519 pF
3 1.5764200 GHz 59.580 Ω -18.298 Ω 5.5175 pF
4 1.5975500 GHz 54.668 Ω 828.73 mΩ 82.562 pH
5 1.6058900 GHz 60.263 Ω -8.3733 Ω 11.836 pF
6 1.5590500 GHz 48.636 Ω -6.5795 Ω 15.515 pF
7 1.5631400 GHz 39.800 Ω -10.787 Ω 9.4393 pF
1 Start 1.332 GHz
IFBW 15 kHz
Stop 1.832 GHz
PExt
Cor

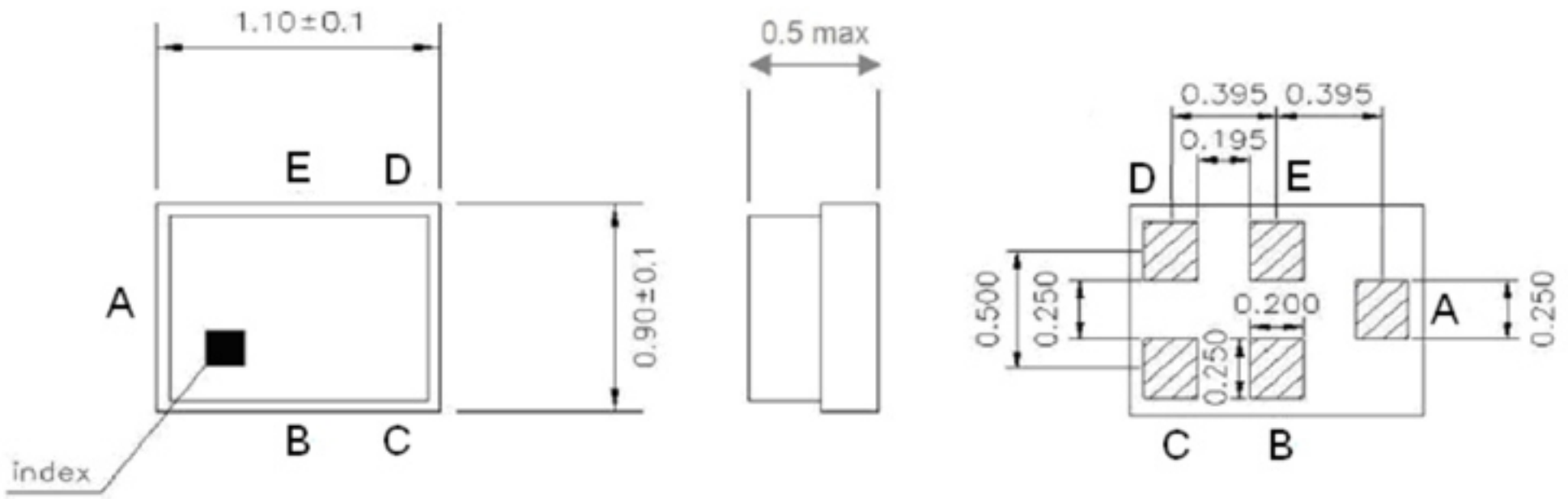
E. PCB FOOTPRINT:



(TOP VIEW)

F. OUTLINE DRAWING:

Device size: 1.1typ. x 0.9typ. x 0.5max.

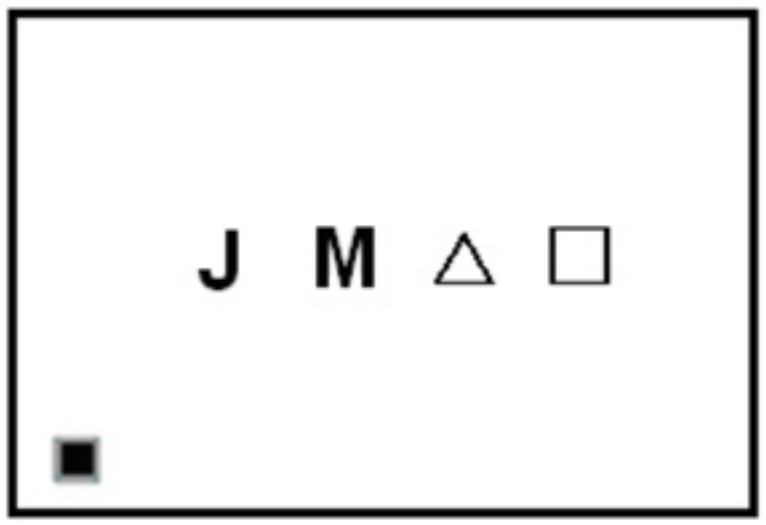


All tolerances are +/-0.1 mm unless otherwise specified.
Unit: mm

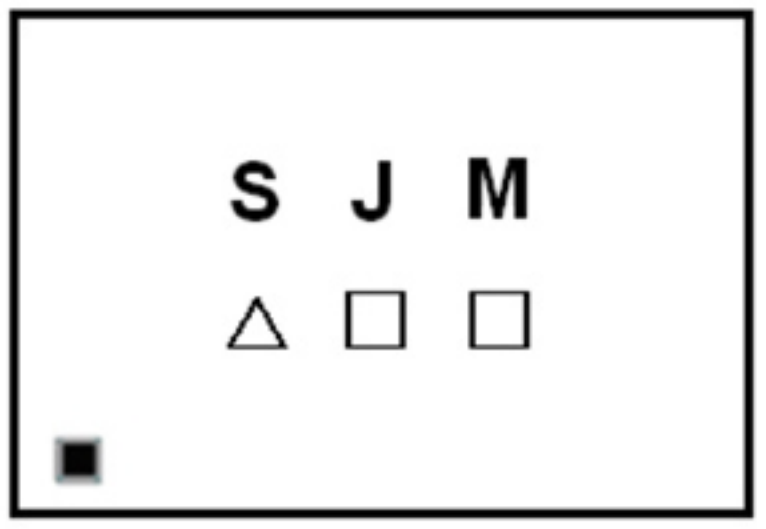
Pin Configuration

Pin No.	Symbol	Function
A	IN	Unbalanced input
B	GND	Ground
C	GND	Ground
D	OUT	Unbalanced output
E	GND	Ground

Top View (Sample Production):



Top View (Mass Production):



△ : Date Code

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

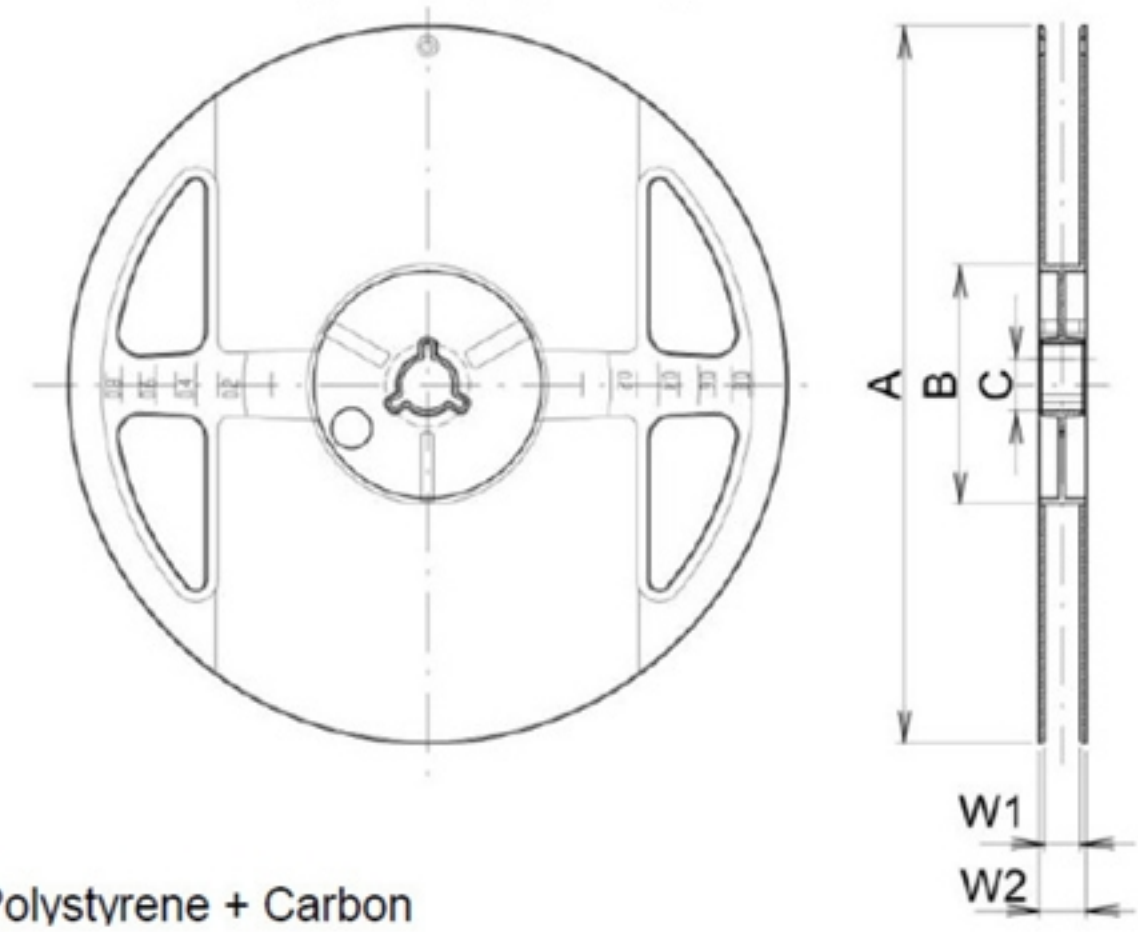
Date Code:

Year	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
2020	n	p	q	r	s	t	u	v	w	x	y	z
2021	A	B	C	D	E	F	G	H	J	K	L	M
2022	N	P	Q	R	S	T	U	V	W	X	Y	Z
2023	a	b	c	d	e	f	g	h	j	k	l	m

G. <u>PACKING</u>: (Ref: WI-75M03)

1. REEL DIMENSION

(Please refer to FR-75D10 for packing quantity)



Material : Polystyrene + Carbon

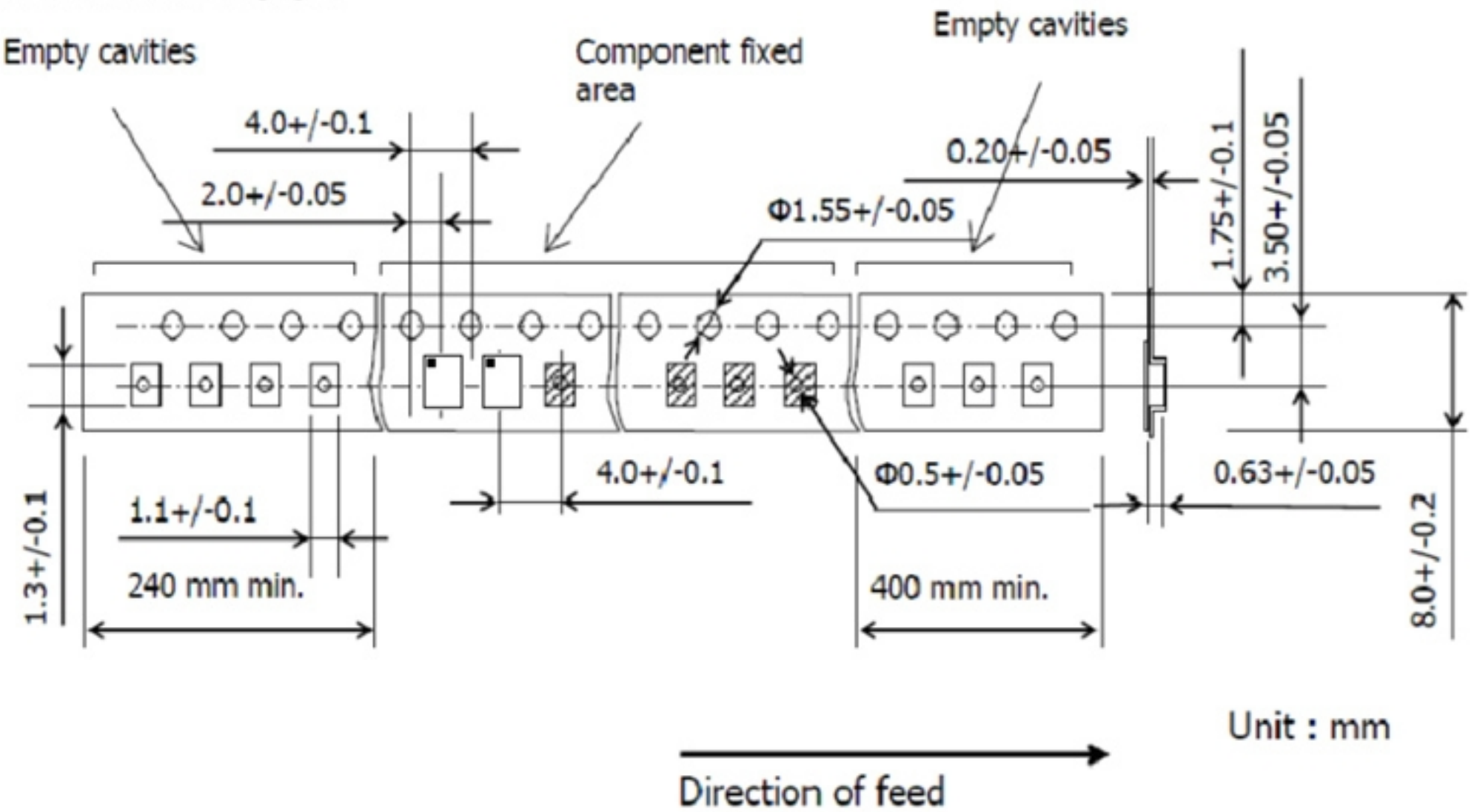
Color : Black

Surface resistance (reference value) : 10^9 Ω/sq max.

Unit : mm

A	B	C	W1	W2
180.0 +0.0/-1.5	60.0 +1.0/-0.0	13.0 ±0.2	9.0 +1.0/-0.0	11.4 ±1.0

2. TAPE DIMENSION



H. RECOMMENDED REFLOW PROFILE:

1. Preheating shall be fixed at 150~180℃ for 60~90 seconds.
2. Ascending time to preheating temperature 150℃ shall be 30 seconds min.
3. Heating shall be fixed at 220℃ for 50~80 seconds and at 260℃+0/-5℃ peak (20~40sec).
4. Time: 2 times.