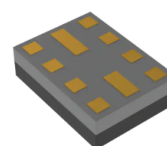


MAXIMUM RATING:

- Input Power Level: 15 dBm
- DC Voltage : 0 V
- Operating Temperature: -30°C to +85°C
- Storage Temperature: -40°C to +85°C
- Moisture Sensitive Level: MSL 3

**1176.45 MHz
Filter Diplexer**



SM1511-10

ELECTRICAL CHARACTERISTICS:

Terminating source impedance (single) : $Z_s = 50 \Omega$

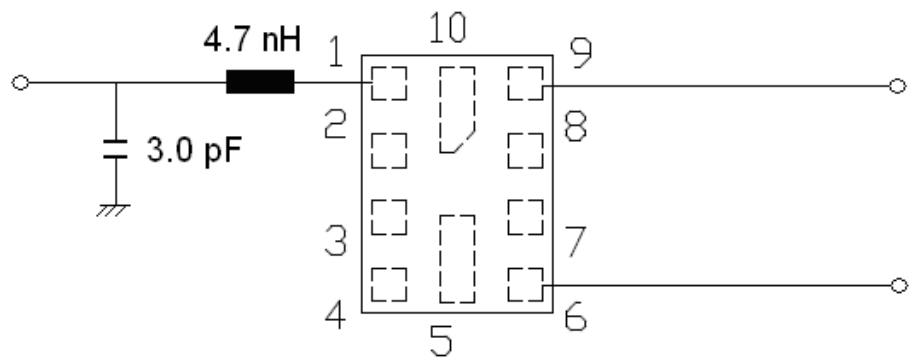
Terminating load impedance (single) : $Z_L = 50 \Omega$

Item (L5 Band to Antenna)	Unit	Min.	Typ.	Max.
Center frequency	MHz	-	1176.45	-
Insertion Loss (1166.22 ~ 1186.68 MHz)	dB	-	2.0	2.4
Group Delay Ripple (1166.22 ~ 1186.68 MHz)	ns	-	8	15
VSWR (1166.22 ~ 1186.68 MHz)	-		2.4	2.8
Attenuation (reference level from 0 dB)				
850 ~ 980 MHz	dB	30	40	-
980 ~ 1010 MHz	dB	30	40	-
1010 ~ 1100 MHz	dB	30	36	-
1100 ~ 1130 MHz	dB	30	35	-
1220 ~ 1250 MHz	dB	20	27	-
1260 ~ 1427 MHz	dB	30	33	-
Temperature Coefficient of Frequency	ppm/K	-	-36	-

Item (L1 Band + GLONASS to Antenna)	Unit	Min.	Typ.	Max.
Center frequency	MHz	-	1585.47	-
Insertion Loss (1559.05 ~ 1611.89 MHz)	dB	-	2.5	3
Group Delay Ripple (1559.05 ~ 1611.89 MHz)	ns	-	13	20
VSWR (1559.05 ~ 1611.89 MHz)	-		2.3	2.8
Attenuation (reference level from 0 dB)				
10 ~ 960 MHz	dB	35	45	-
960 ~ 1463 MHz	dB	35	42	-
1710 ~ 1785 MHz	dB	30	36	-
1785 ~ 1990 MHz	dB	35	39	-
1990 ~ 2280 MHz	dB	35	44	-
2280 ~ 3000 MHz	dB	30	50	
3000 ~ 6000 MHz	dB	30	50	
Temperature Coefficient of Frequency	ppm/K	-	-36	-

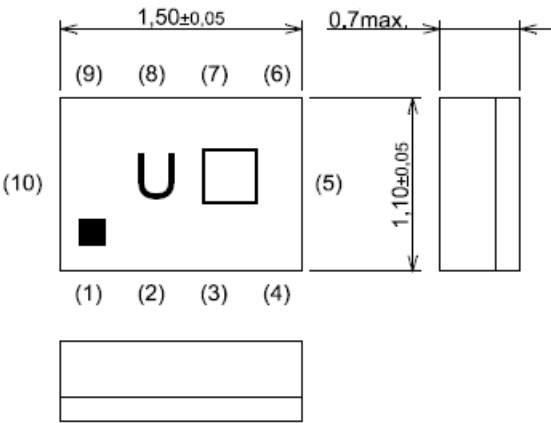
Item (Isolation)	Unit	Min.	Typ.	Max.
Attenuation (reference level from 0 dB)				
1166.22 ~ 1186.68 MHz	dB	35	48	-
1559.05 ~ 1605.89 MHz	dB	35	40	-

TEST CIRCUIT:

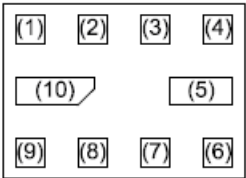


Pin #	Function
(1)	Antenna
(2)	Ground
(3)	Ground
(4)	Ground
(5)	Ground
(6)	L1 Band
(7)	Ground
(8)	Ground
(9)	L5 Band
(10)	Ground

OUTLINE DRAWING:



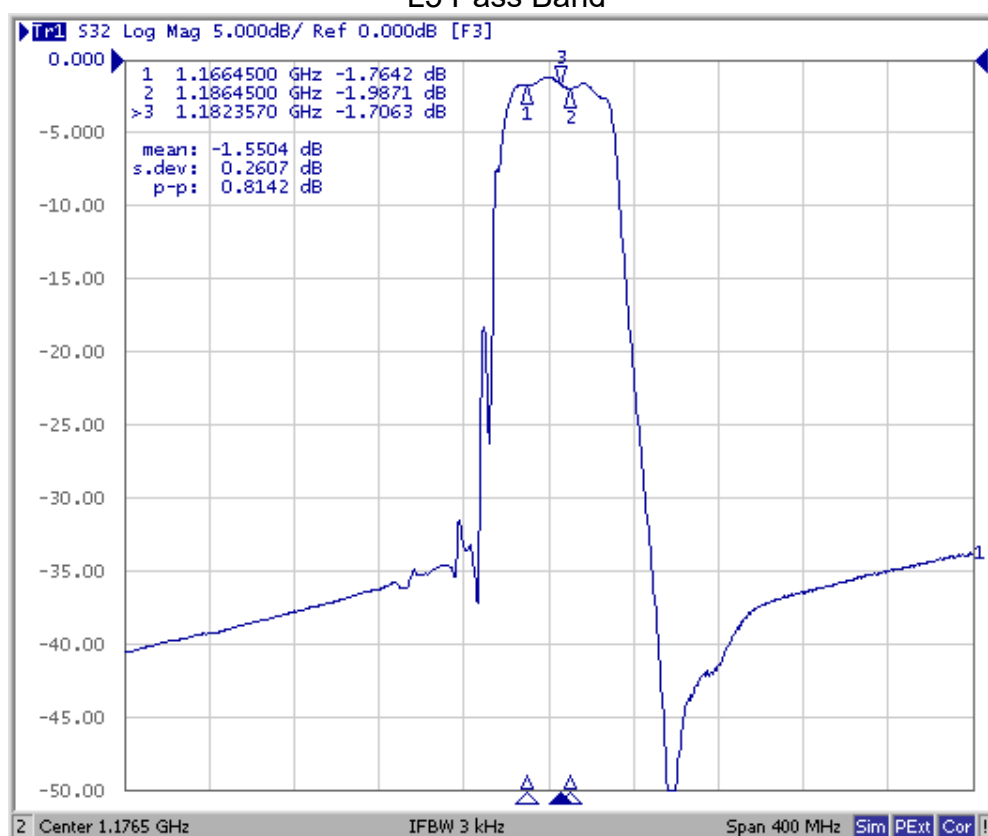
Pin #	Function
(1)	Antenna
(2)	Ground
(3)	Ground
(4)	Ground
(5)	Ground
(6)	L1 Band
(7)	Ground
(8)	Ground
(9)	L5 Band
(10)	Ground



Year/Month	1	2	3	4	5	6	7	8	9	10	11	12
2017	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>	<u>G</u>	<u>H</u>	<u>J</u>	<u>K</u>	<u>L</u>	<u>M</u>
2018	<u>N</u>	<u>P</u>	<u>Q</u>	<u>R</u>	<u>S</u>	<u>T</u>	<u>U</u>	<u>V</u>	<u>W</u>	<u>X</u>	<u>Y</u>	<u>Z</u>
2019	<u>a</u>	<u>b</u>	<u>c</u>	<u>d</u>	<u>e</u>	<u>f</u>	<u>g</u>	<u>h</u>	<u>j</u>	<u>k</u>	<u>l</u>	<u>m</u>
2020	<u>n</u>	<u>p</u>	<u>q</u>	<u>r</u>	<u>s</u>	<u>t</u>	<u>u</u>	<u>v</u>	<u>w</u>	<u>x</u>	<u>y</u>	<u>z</u>
2021	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>	<u>G</u>	<u>H</u>	<u>J</u>	<u>K</u>	<u>L</u>	<u>M</u>
2022	<u>N</u>	<u>P</u>	<u>Q</u>	<u>R</u>	<u>S</u>	<u>T</u>	<u>U</u>	<u>V</u>	<u>W</u>	<u>X</u>	<u>Y</u>	<u>Z</u>
2023	<u>a</u>	<u>b</u>	<u>c</u>	<u>d</u>	<u>e</u>	<u>f</u>	<u>g</u>	<u>h</u>	<u>j</u>	<u>k</u>	<u>l</u>	<u>m</u>
2024	<u>n</u>	<u>p</u>	<u>q</u>	<u>r</u>	<u>s</u>	<u>t</u>	<u>u</u>	<u>v</u>	<u>w</u>	<u>x</u>	<u>y</u>	<u>z</u>

Frequency Characteristics:

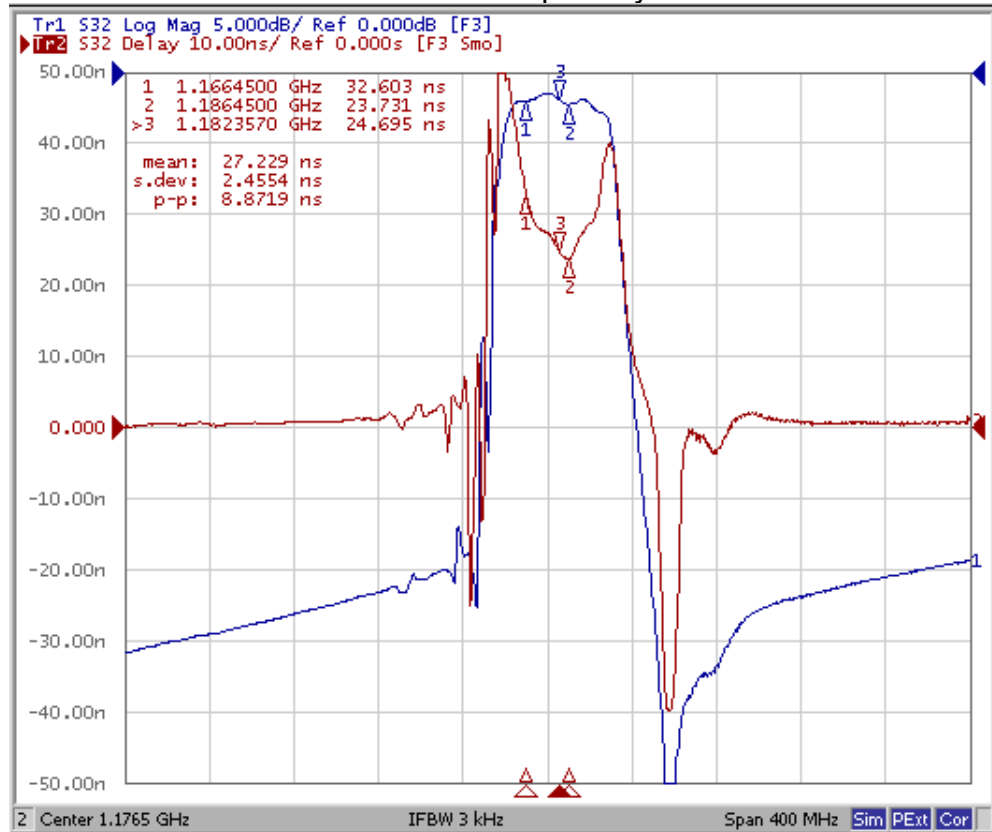
L5 Pass Band



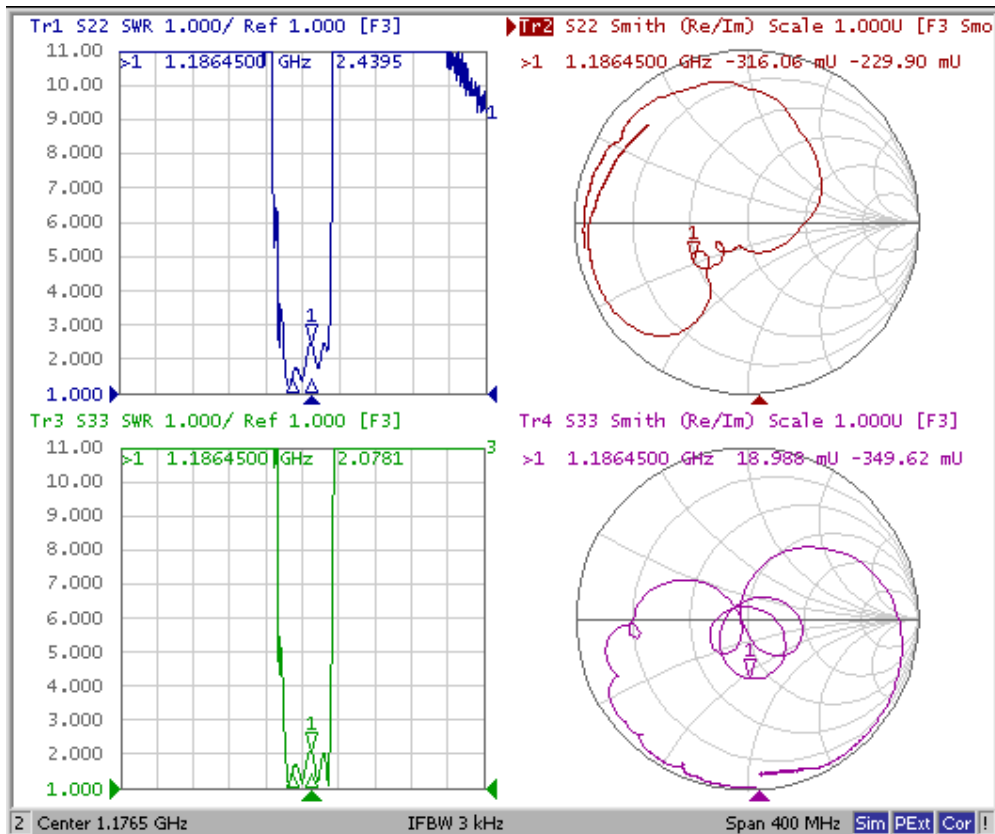
L5 Full Range



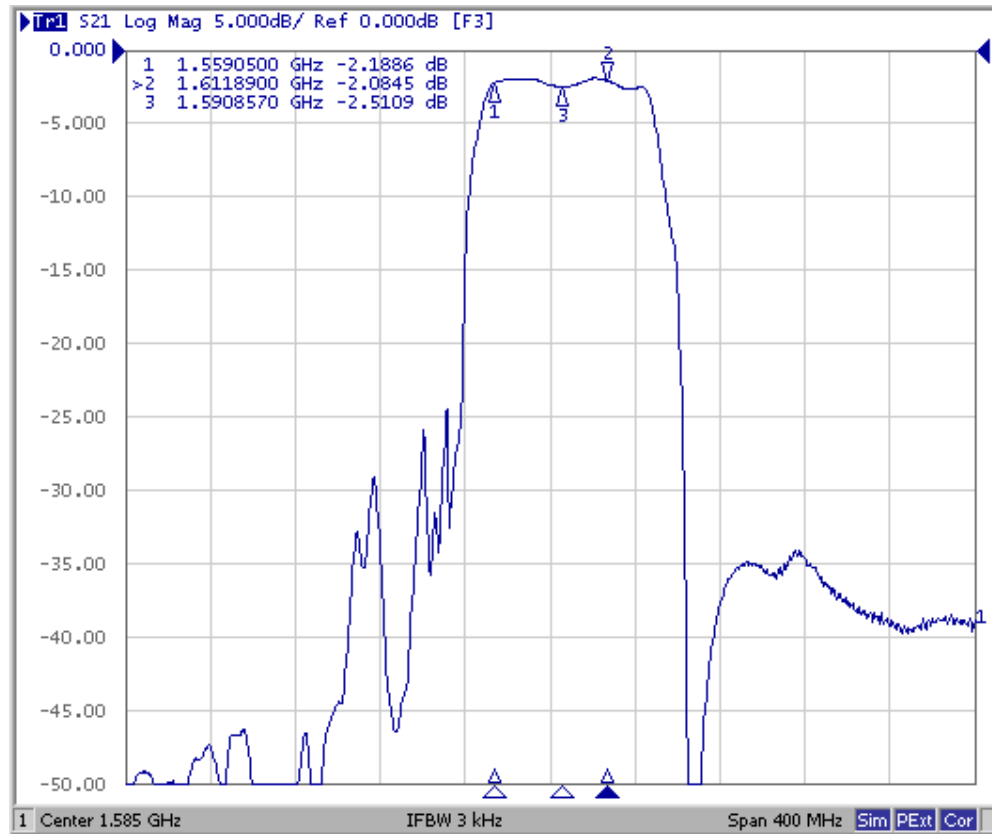
L5 Group Delay



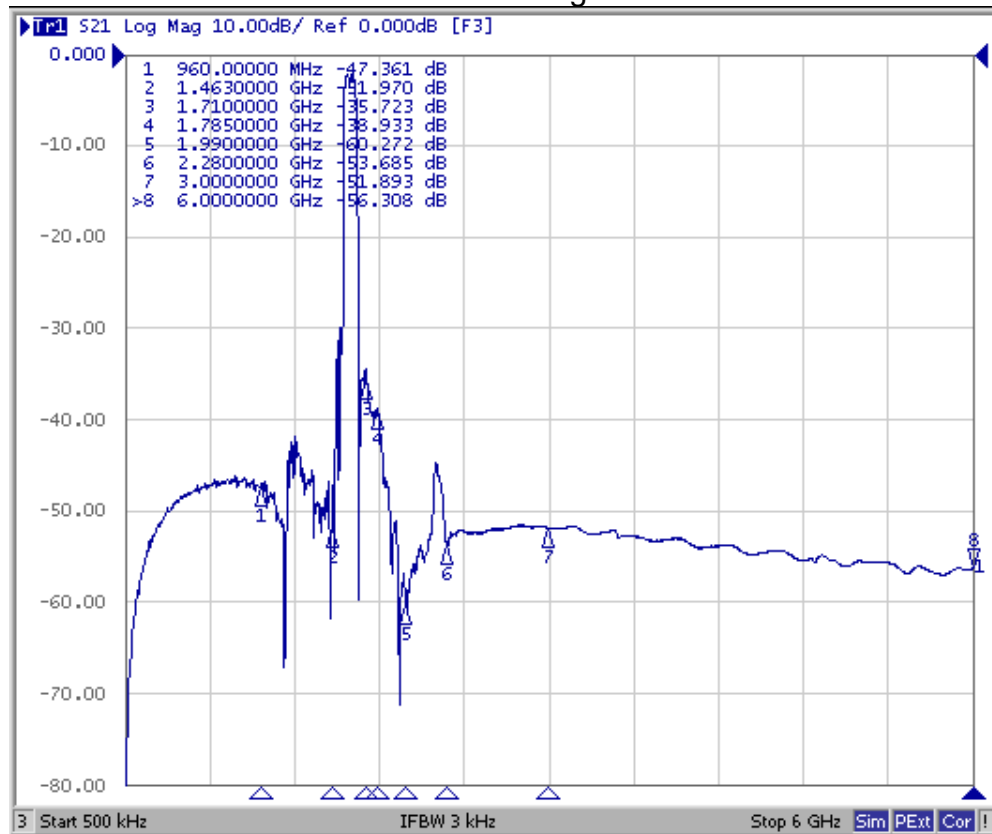
L5 Reflective Characteristic



L1 Pass Band



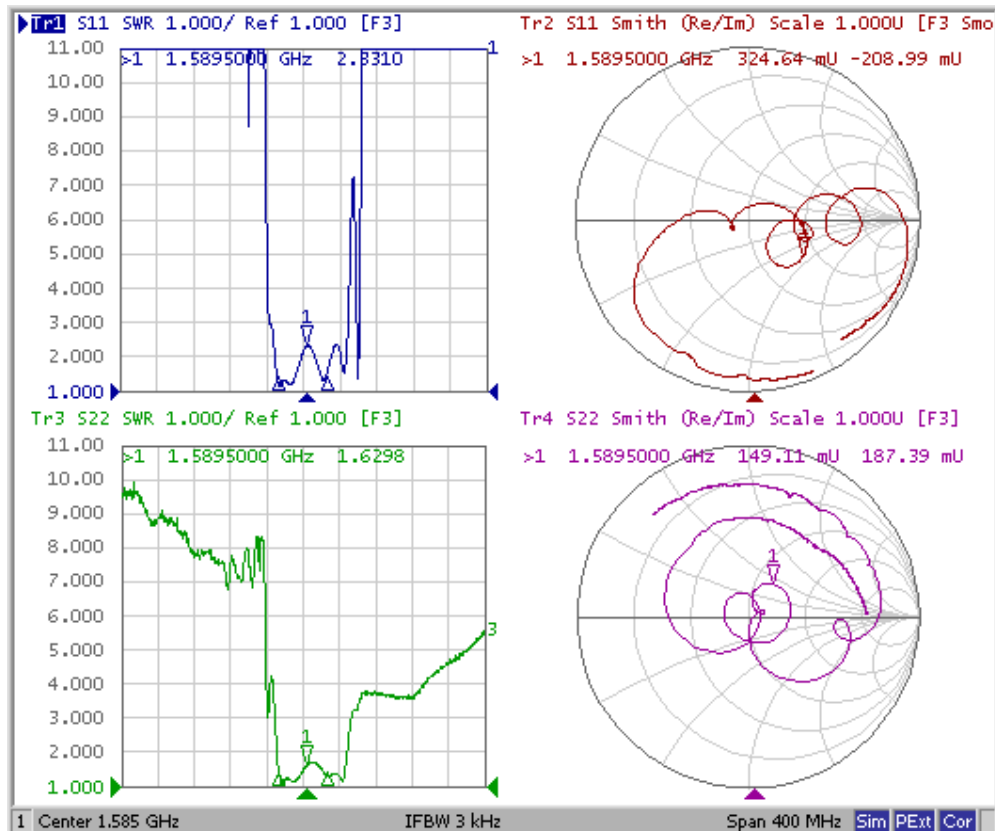
L1 Full Range



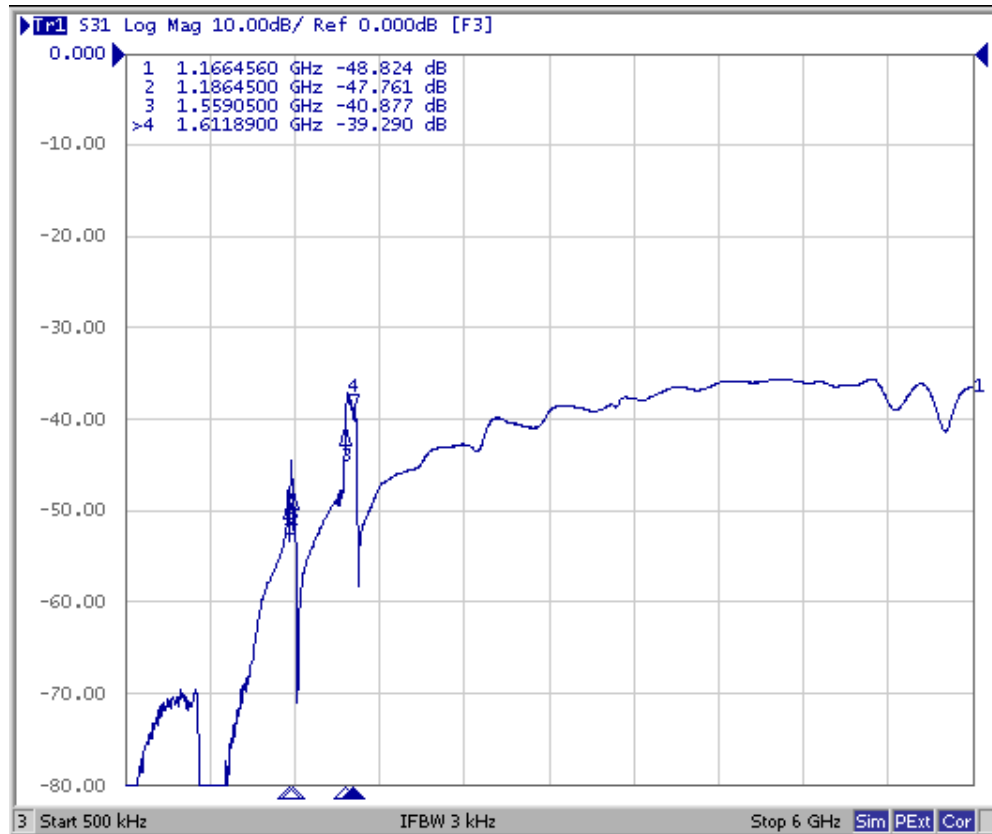
L1 Group Delay



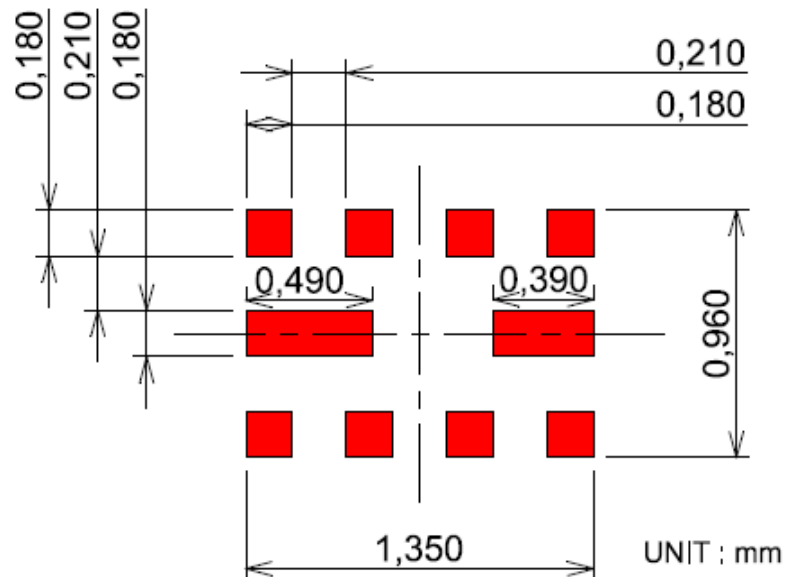
L1 Reflective Characteristic



Isolation



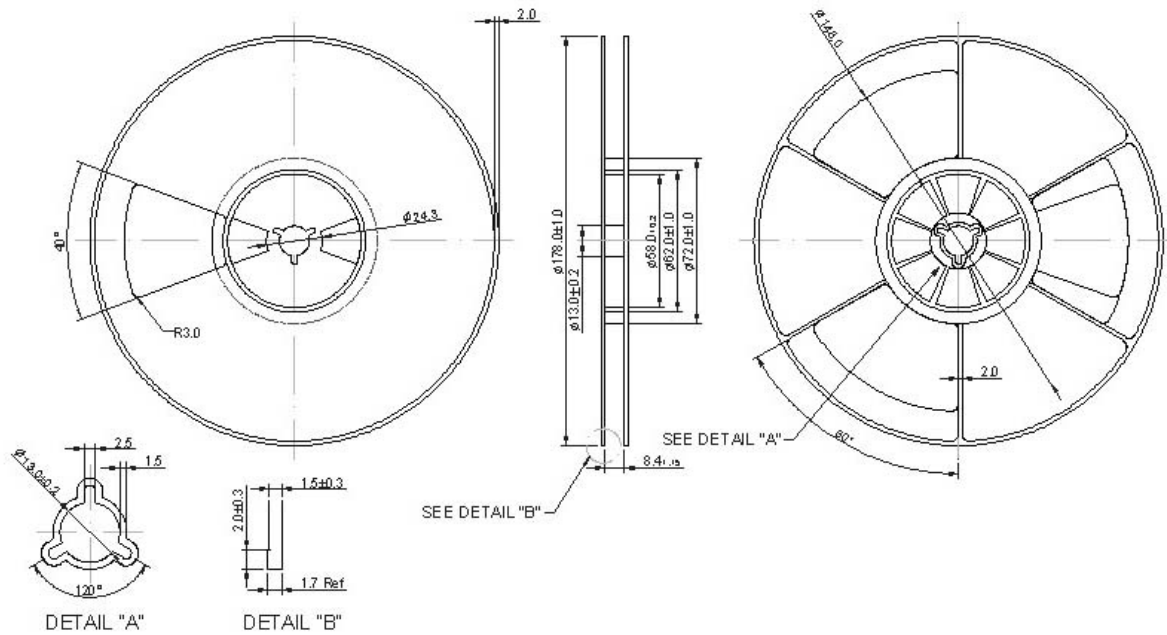
PCB FOOTPRINT:



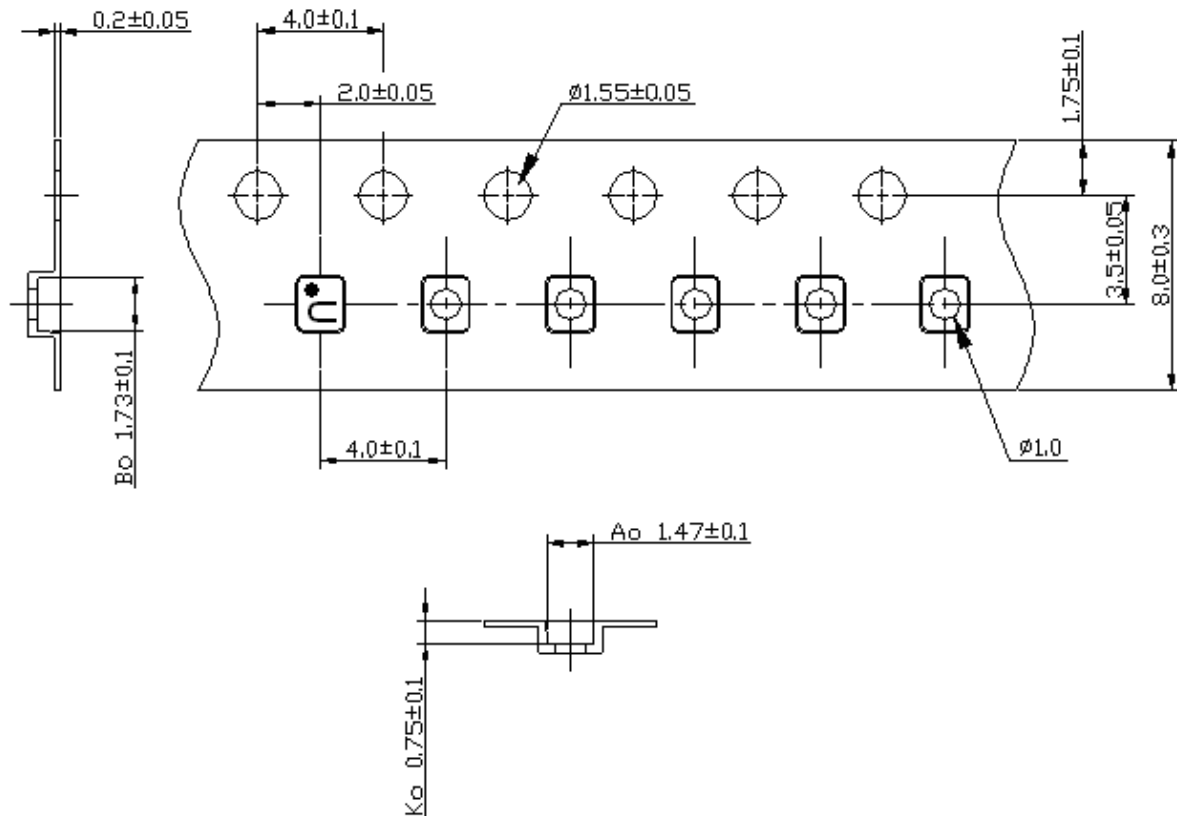
PACKING:

7" = 3000

1. REEL DIMENSION

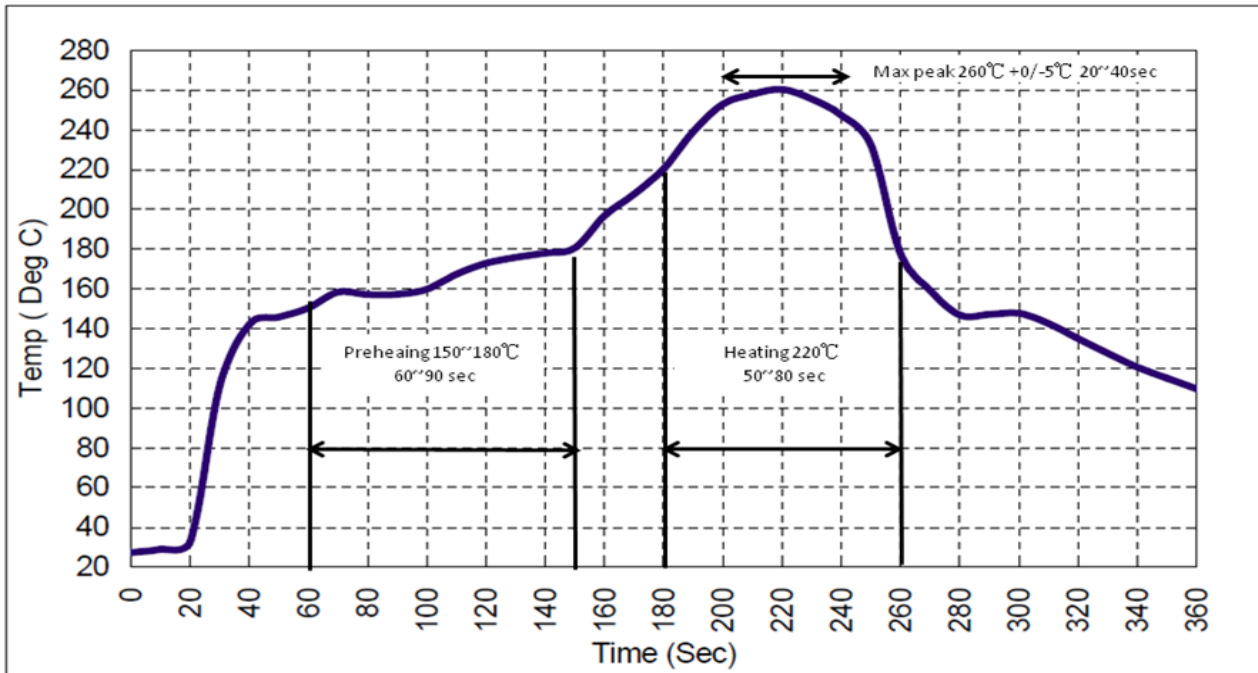


2. TAPE DIMENSION



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 (20~40sec).
4. Time: 2 times.



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.