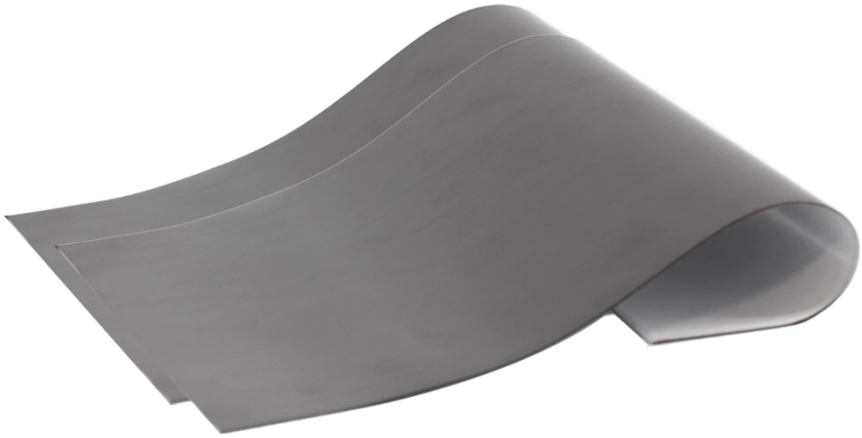
W-Absorber™

Flexible Microwave Absorber Sheet

withwave
Versatile RF & MW Test Solutions

Withwave's W-Absorber™ is microwave absorber in thin sheet format made of a mixture of polymer resin and metal magnetic powder which is thin and flexible and excellent in workability and can be easily bonded. This absorber can suppress radiation noise of electronic devices for wideband microwave frequency range and reduce surface current as well as surface reflection in cavity resonant application.



Features

- Available for Microwave Freq. range
- Lightweight, flexible, thin and excellent processability
- Wide absorption bandwidth
- Included Adhesive tape on backside

Markets

- Commercial communications
- Security and Defense
- Antenna Chamber
- Automotive, general electronics

Applications

- W-Absorber can suppress radiation noise of electronic devices for wideband radio frequency range and is effective in reducing surface current as well as surface reflection in cavity resonant applications due to the high magnetic loss characteristics of materials.
- It suppresses the reflection inside the microwave module and is used to reduce cavity resonance of the module.
- It is particularly suitable for use in masts of ships and walls to reduce reflections and echoes to nearby antennas and to reduce overall radar signatures by attaching to vehicles.
- It can be used for various applications such as anechoic chamber, medical equipment facility.

Availability

- Standard sheet size : S1 (105 X 150 mm) , S2 (150 x 210 mm), S3 (210 x 300 mm : A4 Size)
- W-Absorber can be used in different sizes, thicknesses and custom configurations on request.
- Thickness depends on the desired resonant frequency, and other resonant frequencies are available according to special request.

Instructions for USE

- W-Absorber is designed to function directly in front of a metallic surface. Otherwise, a metallic foil should be bonded to the object.
- Epoxy and acrylic adhesives are recommended or use the self-adhesive version.
- To obtain a strong bond of the absorber to the object, the metallic surface should first be thoroughly cleaned with a degreasing solvent.
- W-Absorber can be readily cut with a sharp knife and template.

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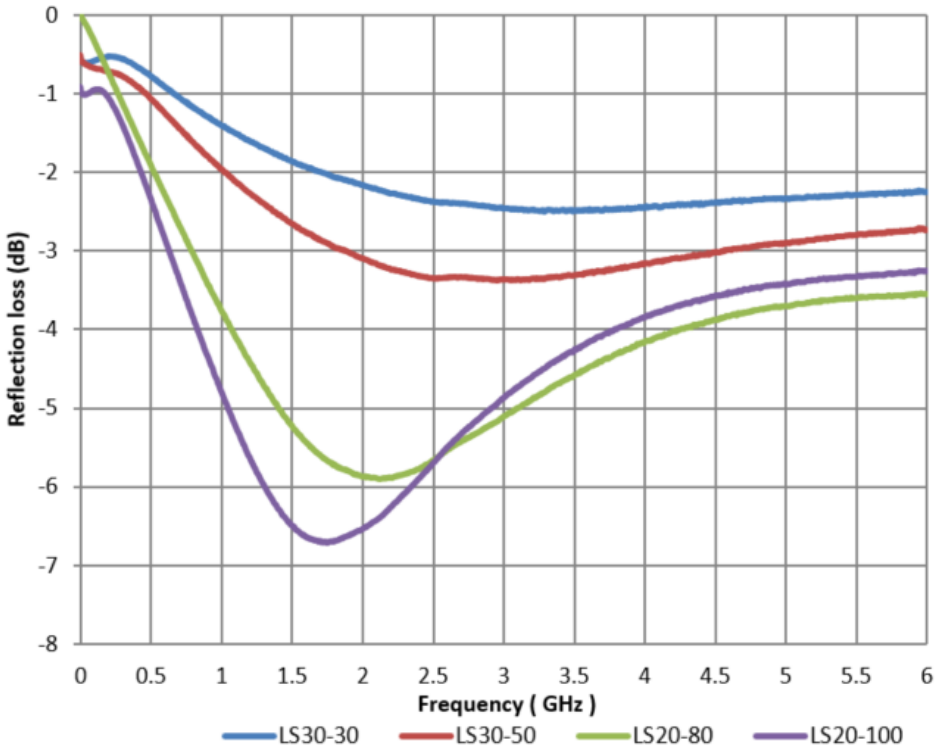
Specification

Items	LS20-80	LS20-100	LS30-30	LS30-50
Freq. range (GHz)		< 6.0		
Peak &Center Freq. (GHz)	2.0	2.0	3.0	3.0
Standard thickness (mm)	0.8	1.0	0.3	0.5
Standard size (mm)		S1 : 105 X 150 S2 : 150 X 210 S3 : 210 x 300 (A4 size)		
Surface resistance (Ω)		$1x10^6$ (min)		
Specific gravity		3.4 ± 0.5		
Temp. Range (°C)		-30 to 90		
Hardness (Shore A)		93 ± 5		

**ROHS Compliant*

Test Data



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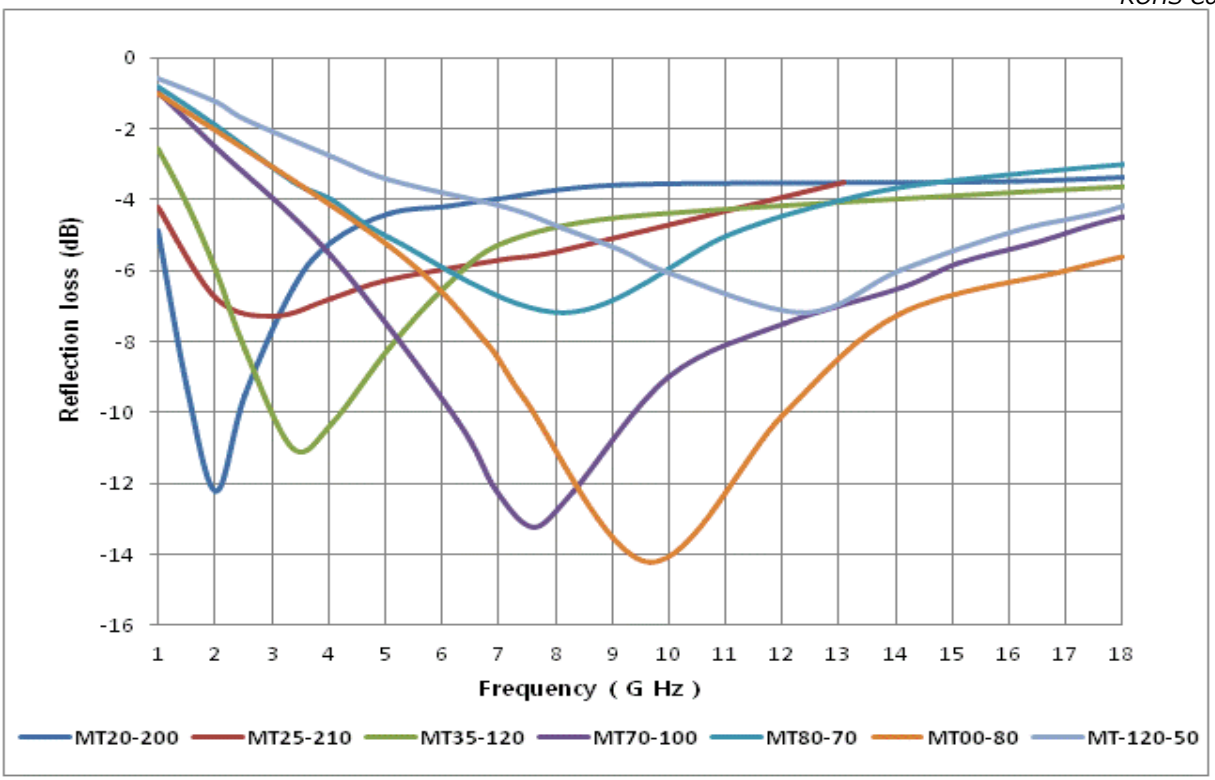
Specification

Items	MT20-200	MT25-210	MT30-210	MT35-120	MT70-100	MT80-70	MT100-80	MT120-50
Freq. range (GHz)	< 18.0							
Peak &Center Freq. (GHz)	2	2.5	3	2	7	8	10	12
Standard thickness (mm)	2.0	2.1	2.1	1.2	1.0	0.7	0.8	0.5
Standard size (mm)	S1 : 105 X 150 S2 : 150 X 210 S3 : 210 x 300 (A4 size)							
Surface resistance (Ω)	$1x10^6$ (min)							
Specific gravity	3.4 ± 0.5							
Temp. Range (°C)	-30 to 90							
Hardness (Shore A)	93 ± 5							

Test Data

**ROHS Compliant*



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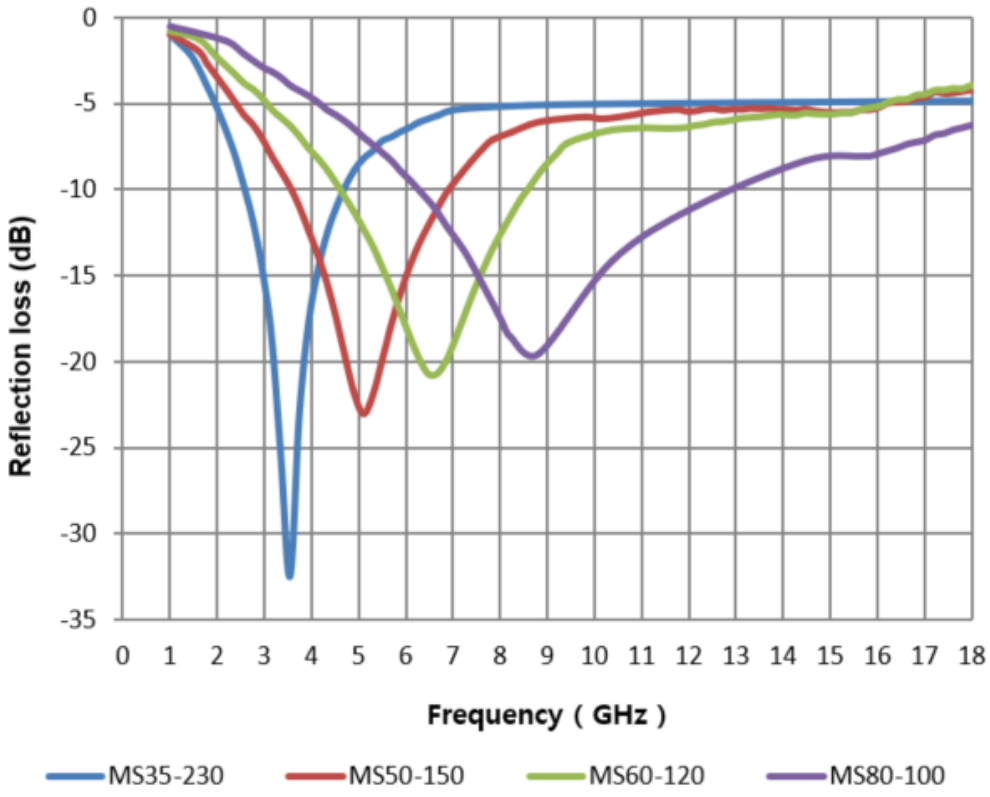
Specification

Items	MS35-230	MS50-150	MS60-120	MS80-100
Freq. range (GHz)	< 18.0			
Peak &Center Freq. (GHz)	3.5	5.0	6.0	8.0
Standard thickness (mm)	2.3	1.5	1.2	1.0
Standard size (mm)	S1 : 105 X 150 S2 : 150 X 210 S3 : 210 x 300 (A4 size)			
Surface resistance (Ω)	$1x10^6$ (min)			
Specific gravity	3.7 ± 0.7			
Temp. Range (°C)	-30 to 90			
Hardness (Shore A)	93 ± 5			

**ROHS Compliant*

Test Data



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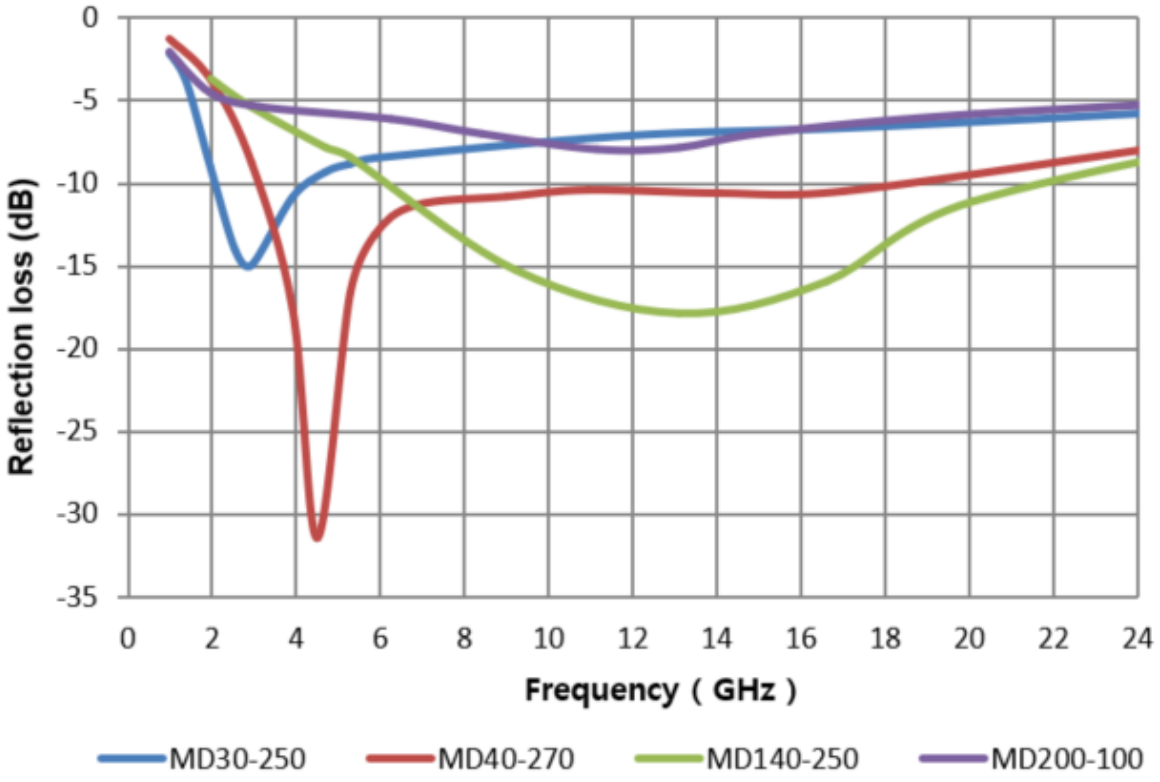
Specification

Items	MD30-250	MD40-270	MD140-250	MD200-100
Freq. range (GHz)	< 24.0			
Peak &Center Freq. (GHz)	3.0	4.4	14.0	20.0
Standard thickness (mm)	2.5	2.7	2.5	1.0
Standard size (mm)	S1 : 105 X 150 S2 : 150 X 210 S3 : 210 x 300 (A4 size)			
Surface resistance (Ω)	$1x10^6$ (min)			
Specific gravity	3.4 ± 0.5			
Temp. Range (°C)	-30 to 90			
Hardness (Shore A)	93 ± 5			

**ROHS Compliant*

Test Data



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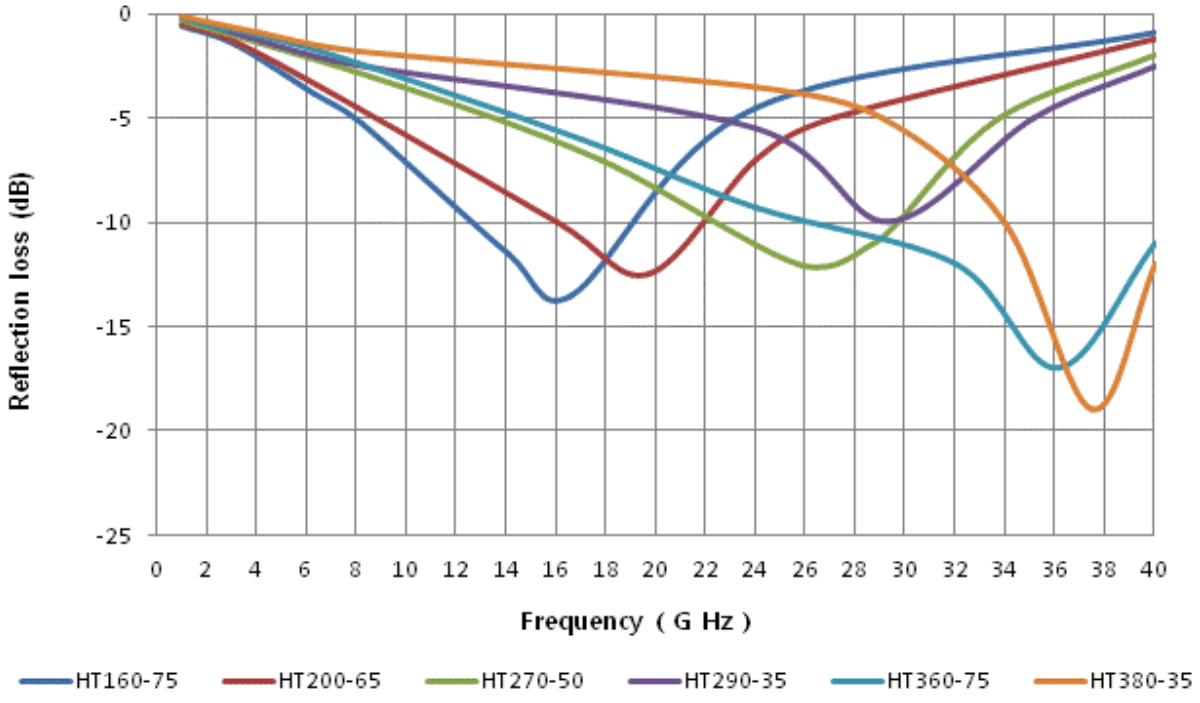
Specification

Items	HT160-75	HT200-65	HT270-50	HT290-35	HT360-75	HT380-35
Freq. range (GHz)	<24	<28	<35		<40	
Peak &Center Freq. (GHz)	16	20	27	29	36	38
Standard thickness (mm)	0.75	0.65	0.5	0.35	0.75	0.35
Standard size (mm)	S1 : 105 X 150 S2 : 150 X 210 S3 : 210 x 300 (A4 size)					
Surface resistance (Ω)	$1x10^6$ (min)					
Specific gravity	3.4 ± 0.5					
Temp. Range (°C)	-30 to 90					
Hardness (Shore A)	93 ± 5					

**ROHS Compliant*

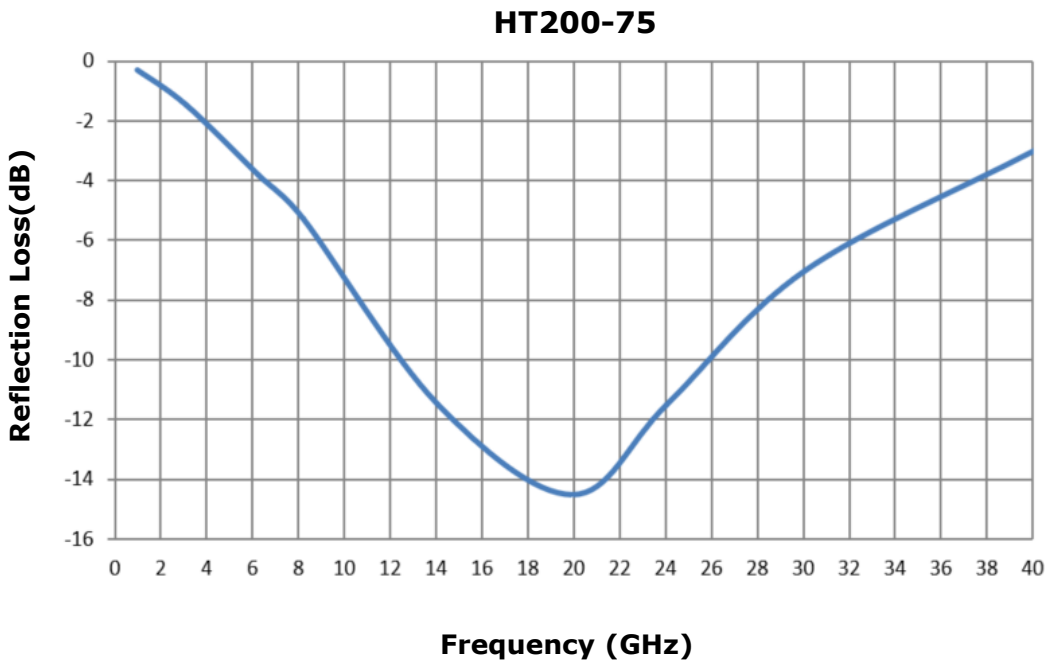
Test Data



Specification

Scope	Items	HT200-75
Electrical	Freq. range (GHz)	< 40
Material	Standard thickness (mm)	0.75
	Standard size (mm)	S1 : 105 X 150 S2 : 150 X 210 S3 : 210 x 300 (A4 size)
	Surface resistance (Ω)	$1x10^6$ (min)
	Specific gravity	4.0 ± 0.5
	Temp. Range (°C)	-30 to 90
	Hardness (Shore A)	90 ± 5

*ROHS Compliant



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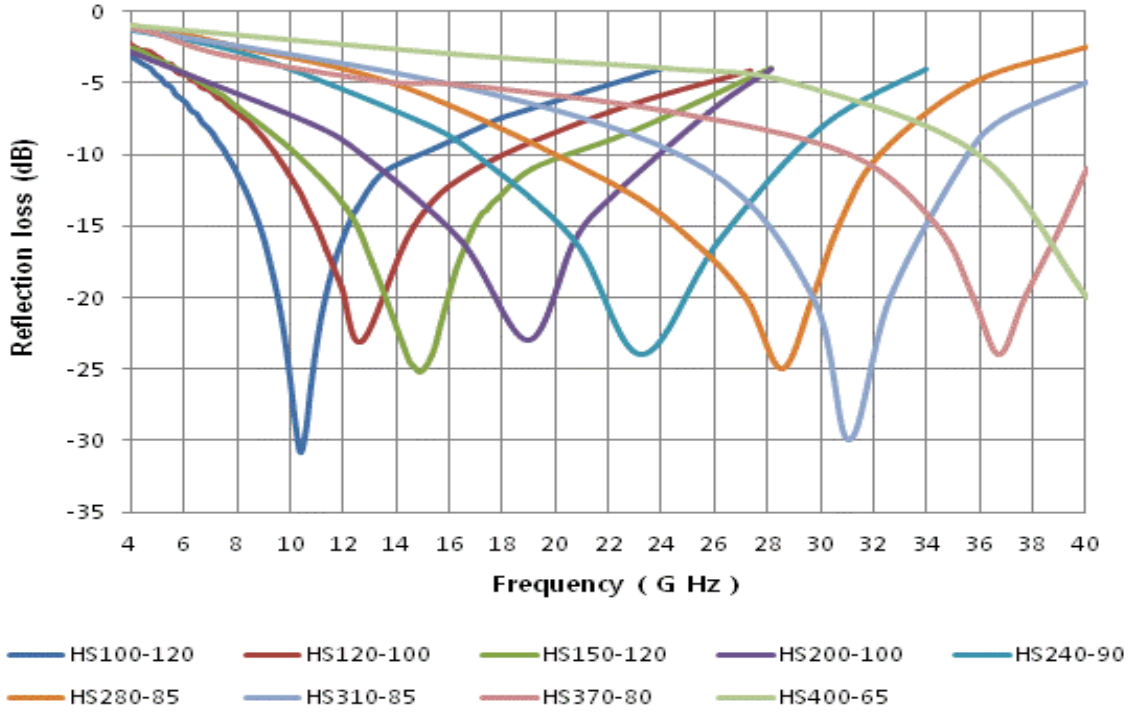
Specification

Items	HS100-120	HS120-100	HS150-120	HS200-100	HS240-80	HS280-85	HS310-85	HS370-80	HS400-65
Freq. range (GHz)	~20		~26	~26	~32	~36	~40	~40	~45
Peak &Center Freq. (GHz)	10.2	12.5	15	19	24	28	31	37	40
Standard Thickness (mm)	1.2	1	1.2	1	0.8	0.85	0.85	0.8	0.65
Standard Size (mm)	S1 : 105 X 150 S2 : 150 X 210 S3 : 210 x 300 (A4 size)								
Surface resistance (Ω)	$1x10^6$ (min)								
Specific gravity	3.4 ± 0.5								
Temp. Range (°C)	-30 to 90								
Hardness(Shore A)	93 ± 5								

Test Data

**ROHS Compliant*



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Specification

Broadband 2-Layer Type for Antenna Chamber, Shield Box

Items	LS20-310
Freq. range (GHz)	< 7.0
Peak &Center Freq. (GHz)	2.0 & 6.0
Standard thickness (mm)	3.2
Standard size (mm)	S3 : 210 x 300 (A4 size) S4 : 250 X 300
Surface resistance (Ω)	$1x10^6$ (min)
Specific gravity	3.7 ± 0.7
Temp. Range (°C)	-30 to 90
Hardness (Shore A)	93 ± 5

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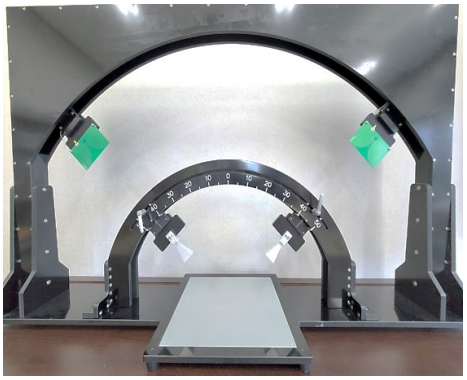
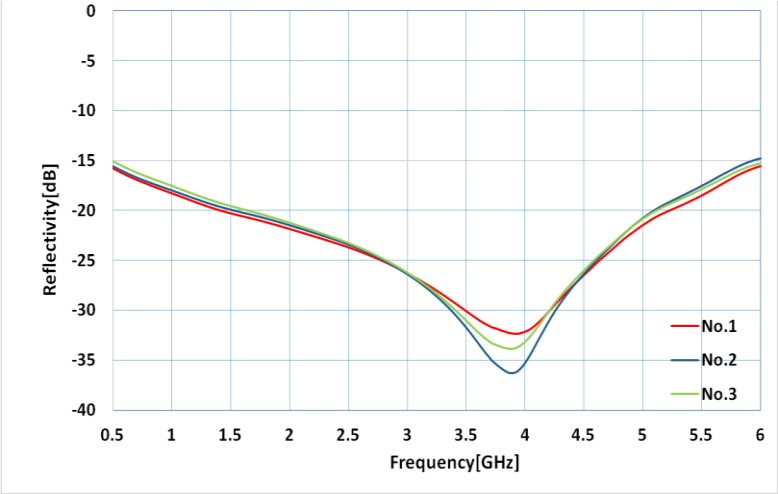
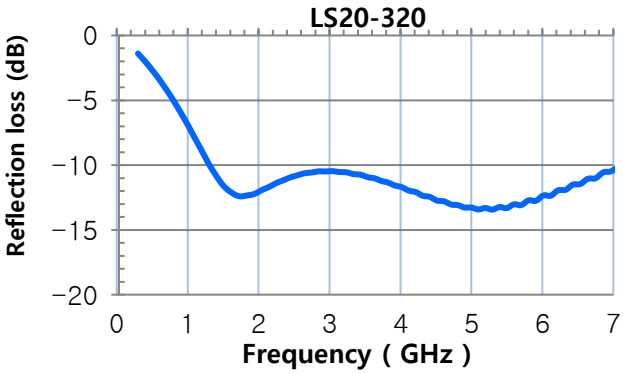
Test Data

NRL Arch test





Coaxial transmission line Test



* The NRL Arch is the industry standard for testing the reflectivity of materials. It allows quick, repeatable non-destructive testing of microwave absorbent materials over a wide frequency range.

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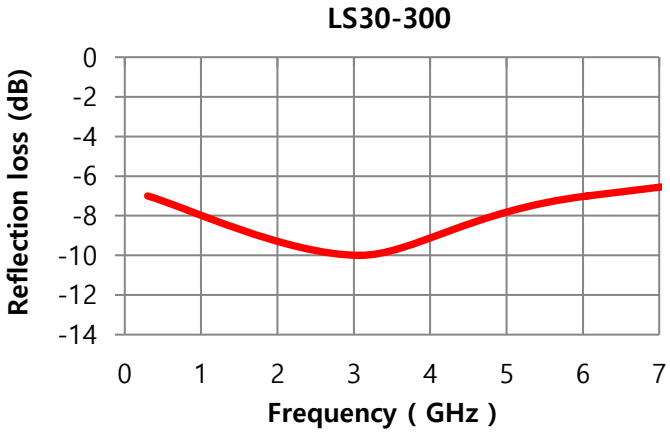
Specification

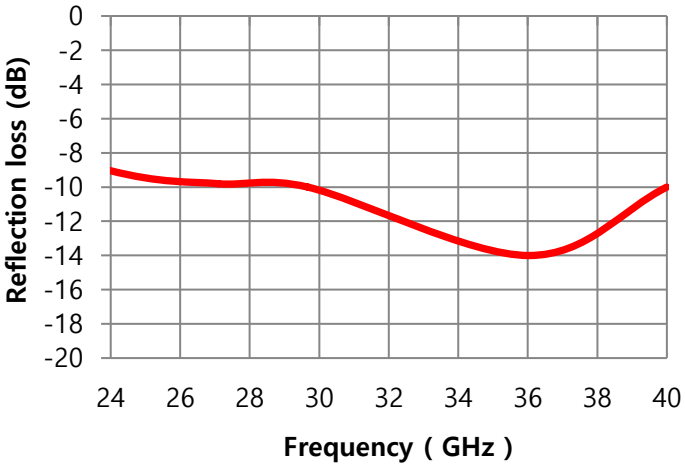
Broadband 2-Layer Type for Antenna Chamber, Shield Box
Dual Band Type (< 7GHz , 20 ~ 40 GHz)

Items	LS30-300
Freq. range (GHz)	< 7.0 & 20~40
Peak &Center Freq. (GHz)	3.0 & 34.0
Standard thickness (mm)	3.0
Standard size (mm)	S3 : 210 x 300 (A4 size) S4 : 250 x 300
Surface resistance (Ω)	$1x10^6$ (min)
Specific gravity	3.4 ± 0.5
Temp. Range (°C)	-30 to 90
Hardness (Shore A)	93 ± 5

Test Data

NRL Arch test





Selection Guide

MT70-100- S1

Absorber type

MT70
HT200

Thickness

75 : 0.75 mm
100 : 1.0 mm

Size

S1 : 105 X 150 mm
S2 : 150 X 210 mm
S3 : 210 X 300 mm (A4 Size)
S4 : 150 X 300 mm (For 2-Layer)

S1

S2

S3

S4

Revision History

Revision	Date	Changes
Ver 1.0	2019-01-11	Releases Flexible Microwave Absorber Sheet
Ver 2.0	2019-07-26	Add products
Ver 2.1	2019-12-10	Revised spec.
Ver 2.2	2020-09-07	Add new models (2-Layer types)
Ver 2.3	2020-10-22	Add Adhesive tape information
Ver 3.0	2021-12-01	Add New types of Absorbers