

Withwave's W-AbsorberTM 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.



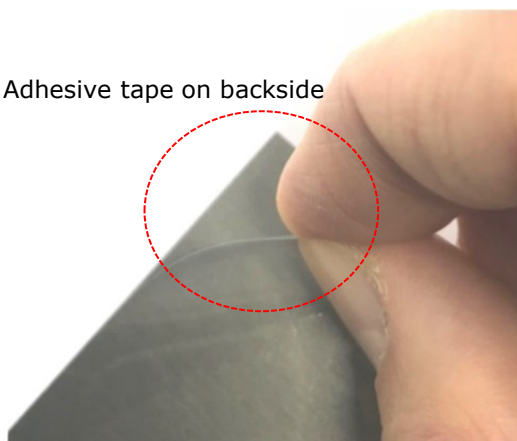
■ Features

- 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

Adhesive tape on backside



■ 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.

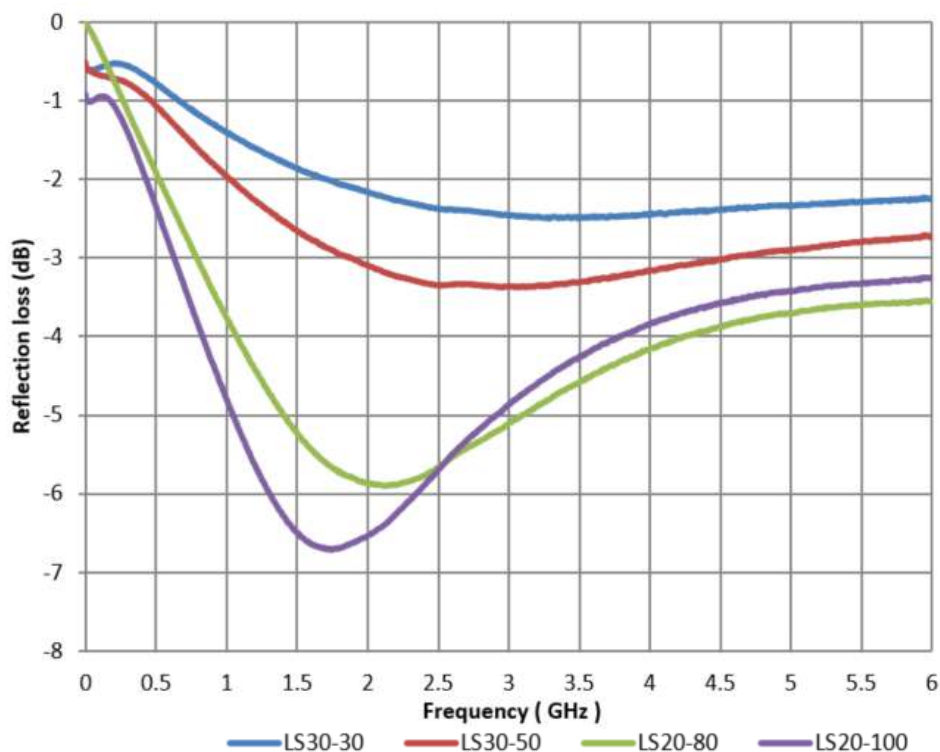


■ Specification

| 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

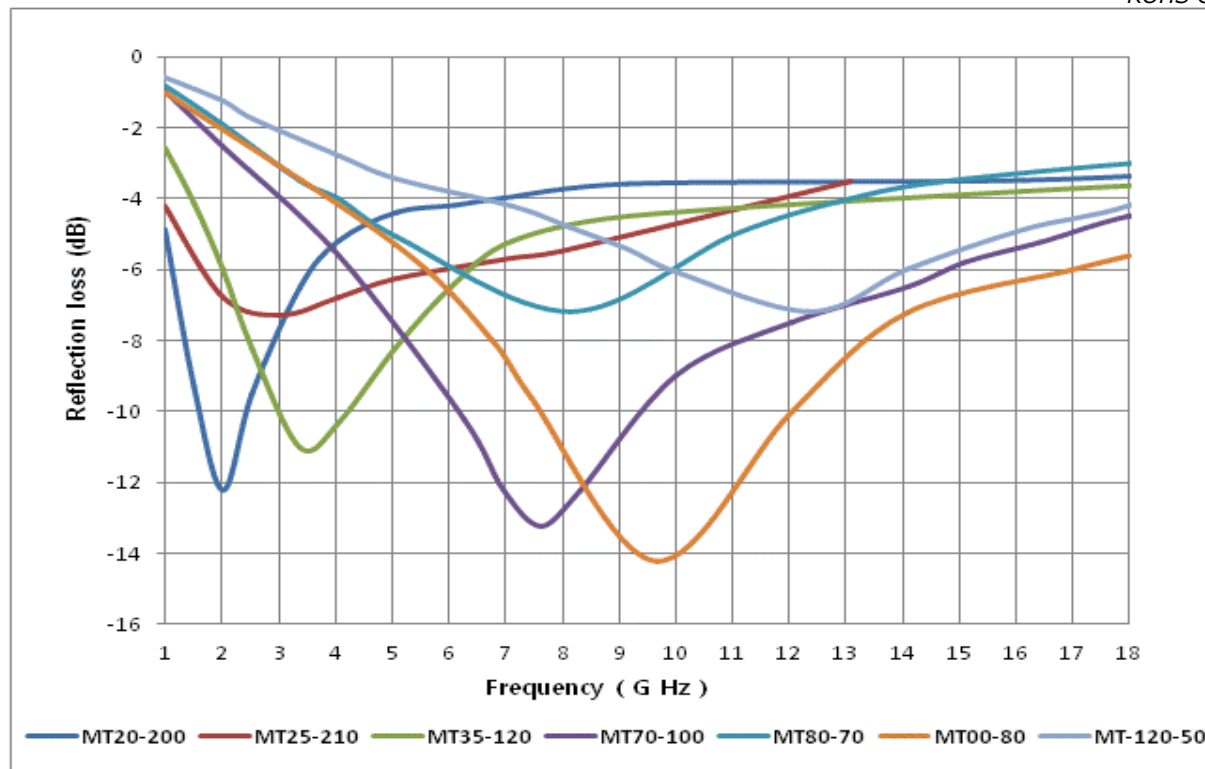


Specification

| 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

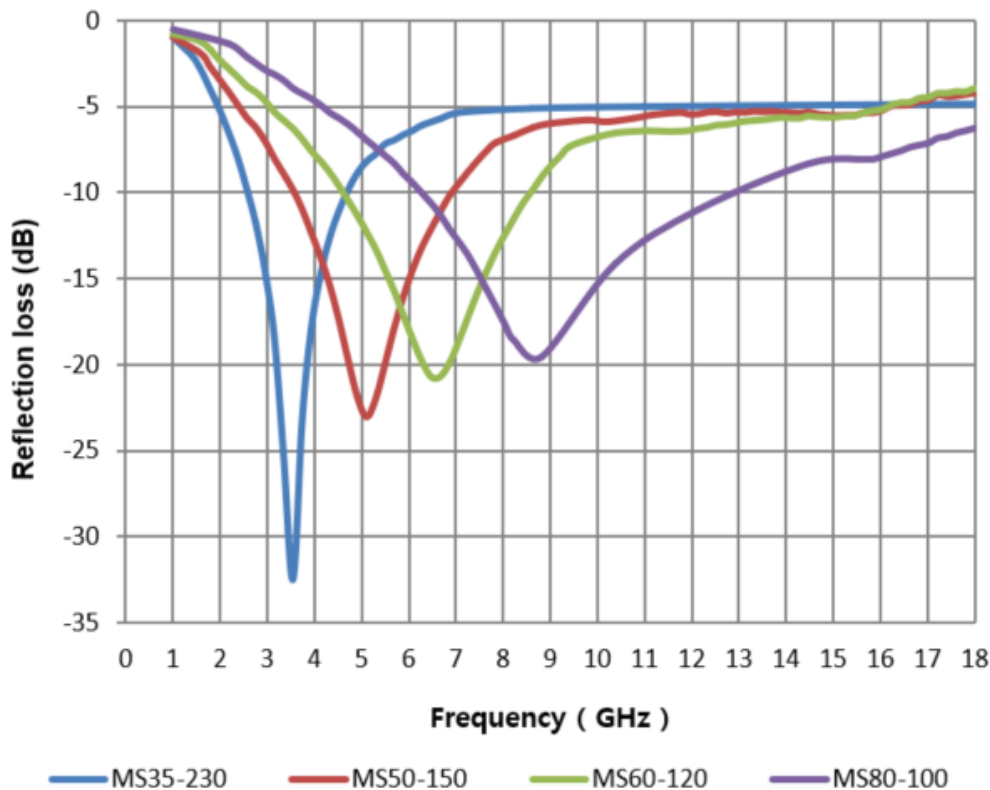


■ Specification

| 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 | | | |

■ Test Data

*ROHS Compliant

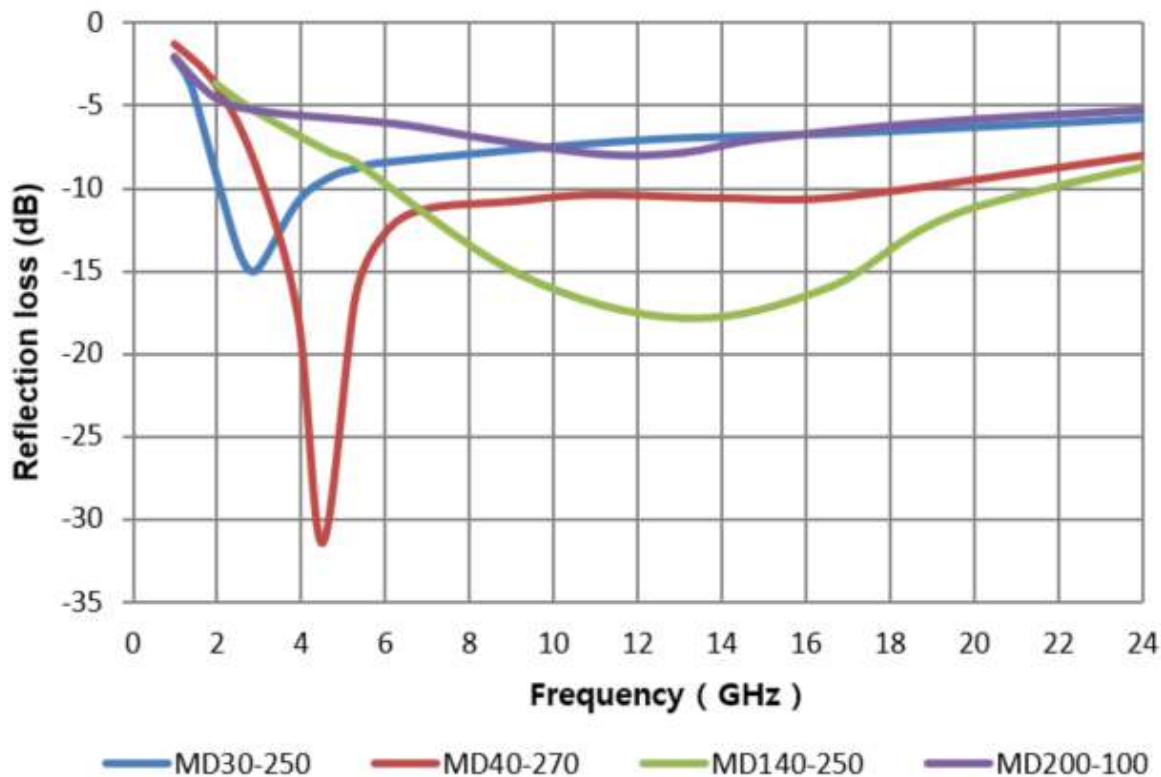


■ Specification

| 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

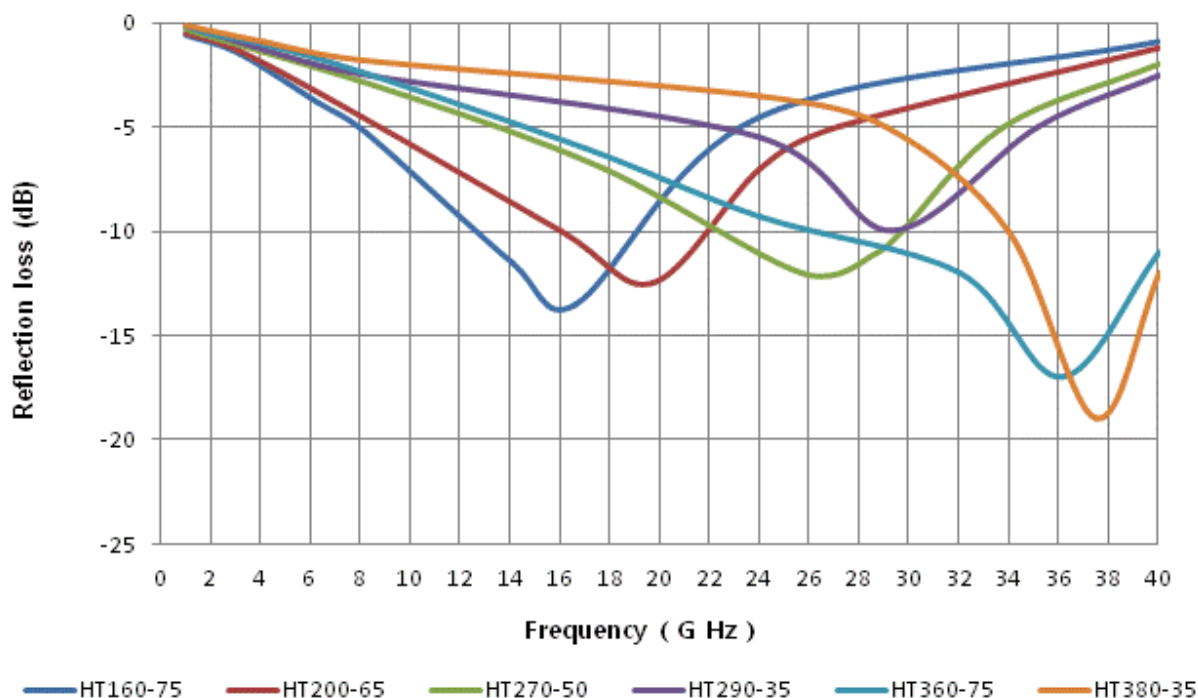


■ Specification

| 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

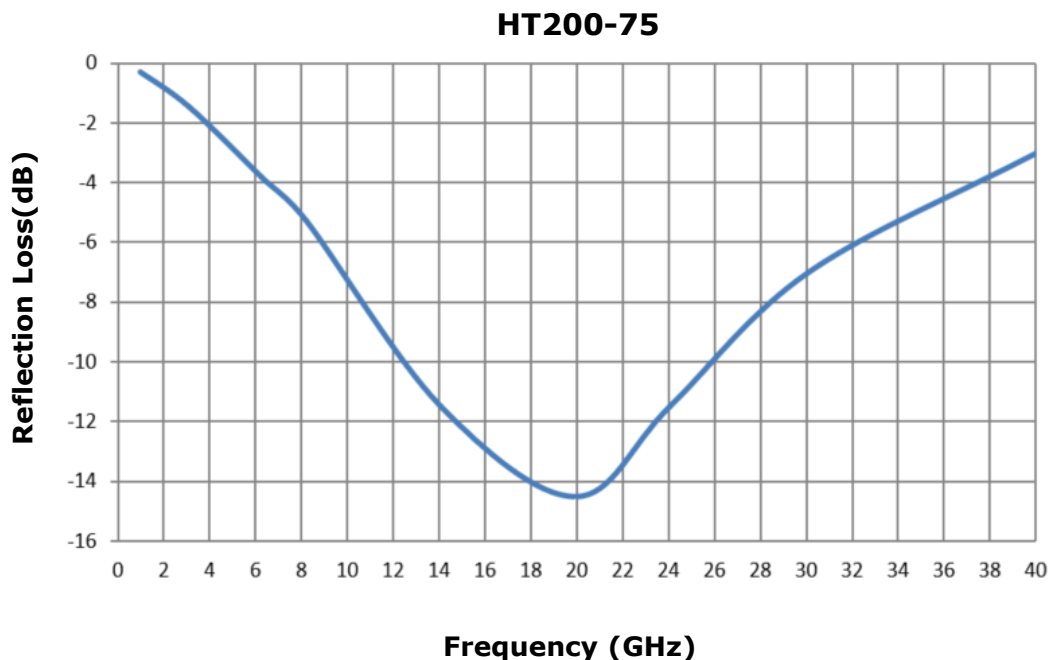
■ Test Data



■ 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 |

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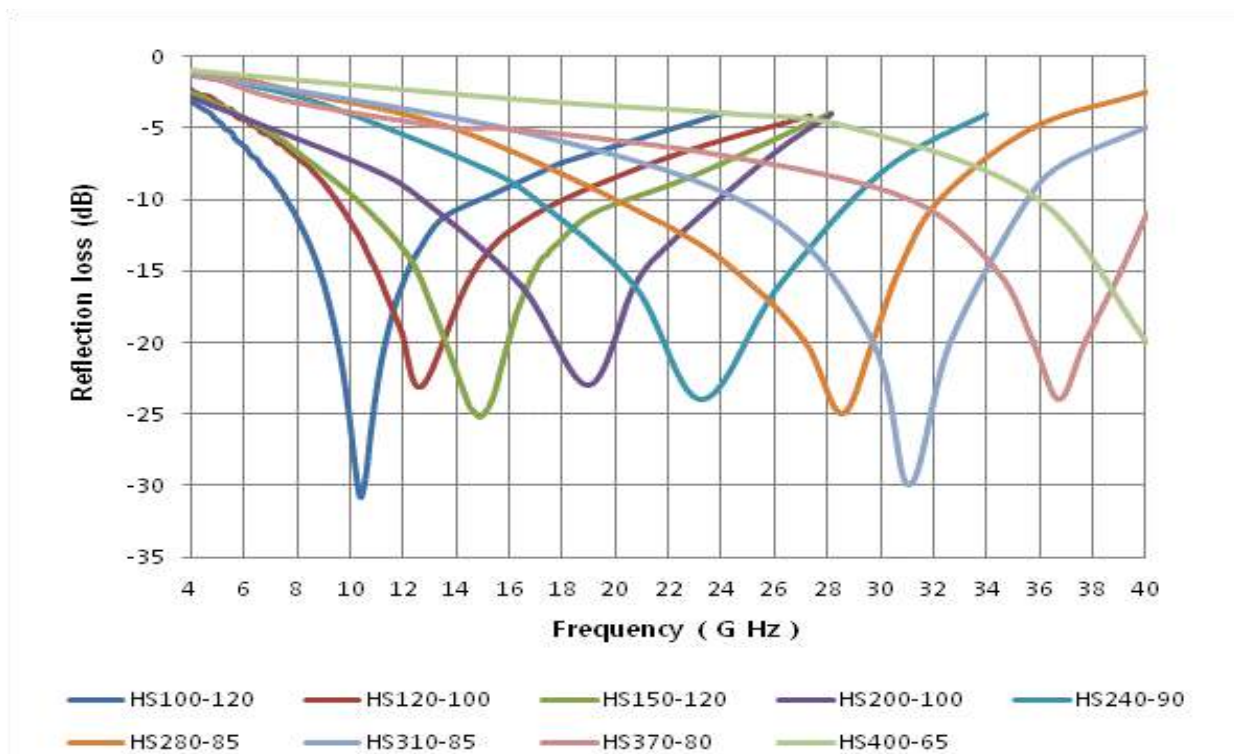


Specification

| 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 | | | | | S1 : 105 X 150 | | | | |
| Size (mm) | | | | | 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



■ Specification

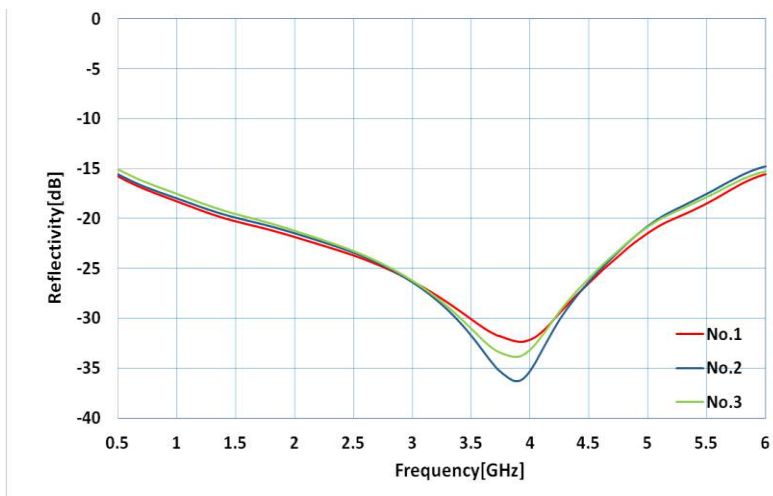
Broadband 2-Layer Type for Antenna Chamber, Shield Box

| Items | LS20-320 |
|---------------------------|--|
| 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 |

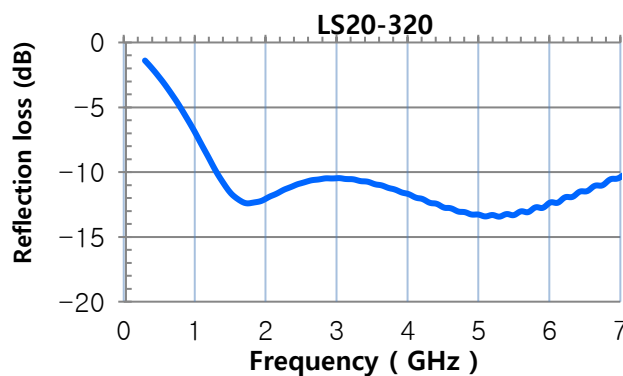
*ROHS Compliant

■ 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.

■ Specification

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

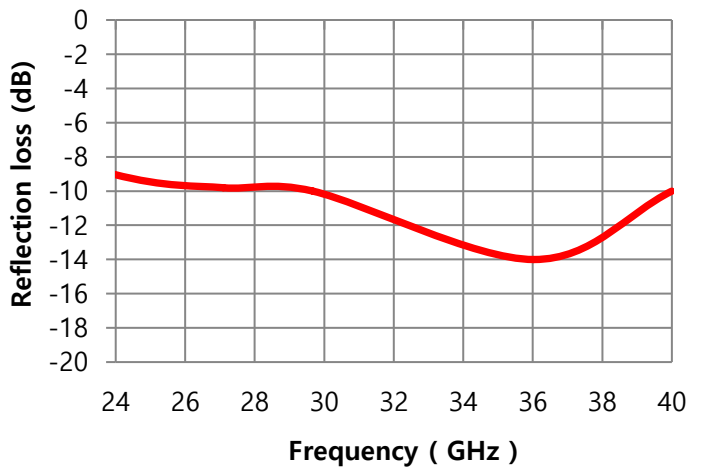
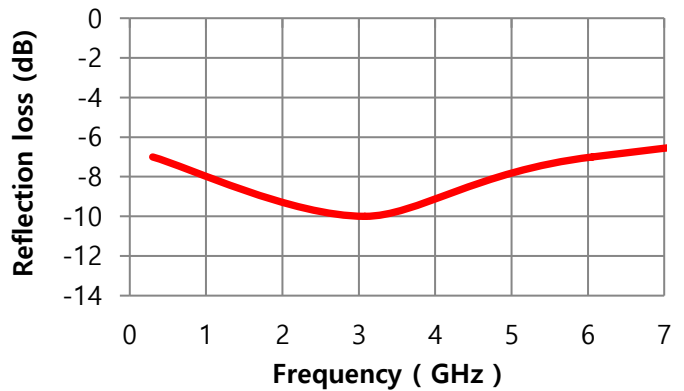
| Items | LS30-300 |
|---------------------------|--|
| Freq. range (GHz) | < 7.0 & 20~40 |
| Peak & Center Freq. (GHz) | 3.0 & 34.0 |
| Standard thickness (mm) | 3.0 |
| Standard size (mm) | S3 : 210 x 300 (A4 size) S4 : 250 x 300 |
| Surface resistance (Ω) | 1x10 ⁶ (min) |
| Specific gravity | 3.4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

■ Test Data

NRL Arch test

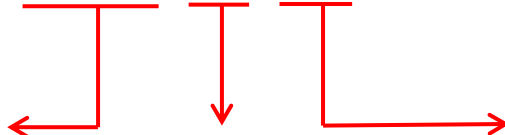


LS30-300



■ 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 |