

BandSorb® ST

Thin, flexible, Resonant magnetically loaded Microwave Absorber

Description:

BandSorb® ST is a series of resonant absorbers which reflect -20 dB or less of normally incident microwave energy at the design frequency in the range of 1.5 to 26 GHz.

BandSorb® ST can be used for applications requiring absorption at a specific frequency or in a narrow frequency band.

Availability:

BandSorb® ST series materials can be supplied in sheets as well as custom configurations. The standard sheet size is 300 mm x 300 mm.

BandSorb® ST has a varying thickness according to the desired resonant frequency.

Grades are designated by a suffix corresponding to the resonant frequency.

Features and Benefits

BandSorb® ST consists of a thin, flexible, high-loss, magnetically loaded, electrically non-conductive silicone rubber. Silicone absorbers have high service temperature capability (170°C continuous) and allow short exposures to higher temperatures.

Applications

BandSorb® ST series can be used to absorb at a specific frequency or in a narrow frequency band, including:

- Attaching to masts of ships, walls, etc. to reduce reflections and echoes from nearby antennas
- Attaching to vehicles to reduce radar signature.
- Lining magnetron housings to prevent detuning.
- Fabricating into tapered shapes for impedance matching in waveguide or microstrip applications.
- Suppressing reflections, surface currents and cavity resonances inside microwave modules.
- Lining of cavity backed and shrouded telecommunication antennas where narrowband performance is required e.g. waveguide feeds.

For module interference, cavity resonance and surface current problems where no specular reflectivity performance is required, BandSorb® ST, is recommended due to its high magnetic loss properties and will conform to mild curvatures.

Physical Properties:

Datasheet for Performance Characteristics			
CHARACTERISTICS	TEST	UNIT	SPECIFICATIONS
Design Frequency range		GHz	3 to 18
Thicknesses		mm (inch)	1.2 - 3 (0.047-0.118)
Typical Size		mm (inch)	300 x 300 (11.8 x 11.8)
Elastomer Binder			Silicone
Hardness	ASTM D 2240	Shore A	50-95
Elongation	ASTM D 412	%	10-180
Tensile Strength	ASTM D 412	MPa (psi)	2-6 (479)
Maximum service Temperature		°C (°F)	170 (338)
Flammability Rating	UL94*	-	V0
Color	-	-	Grey
Volume Resistivity	ASTM D 991	Ω-cm (Ω-in)	> 10 ¹⁰ (>4 x 10 ⁹)
Compliance			2011/65/EU(RoHS 2.0) Compliance, REACH SVHC Compliance, Halogen free

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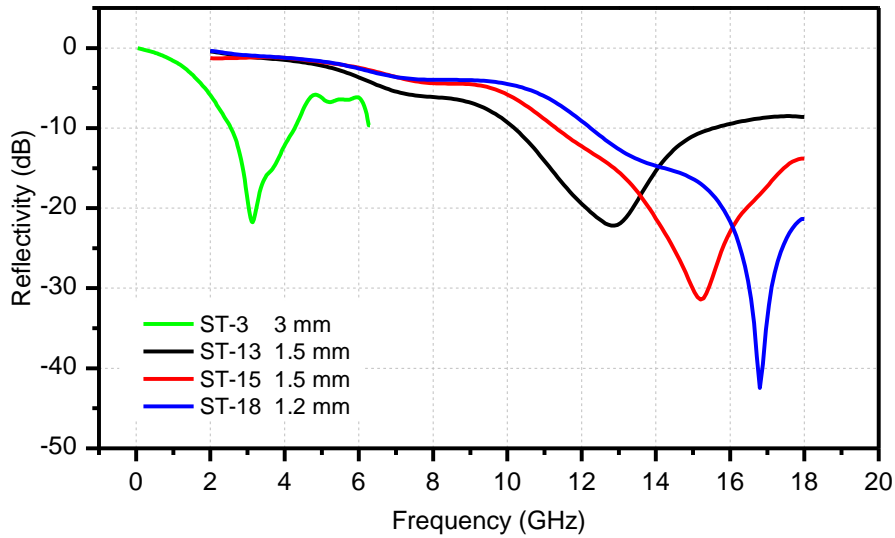
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*Tested in accordance of UL94 specification

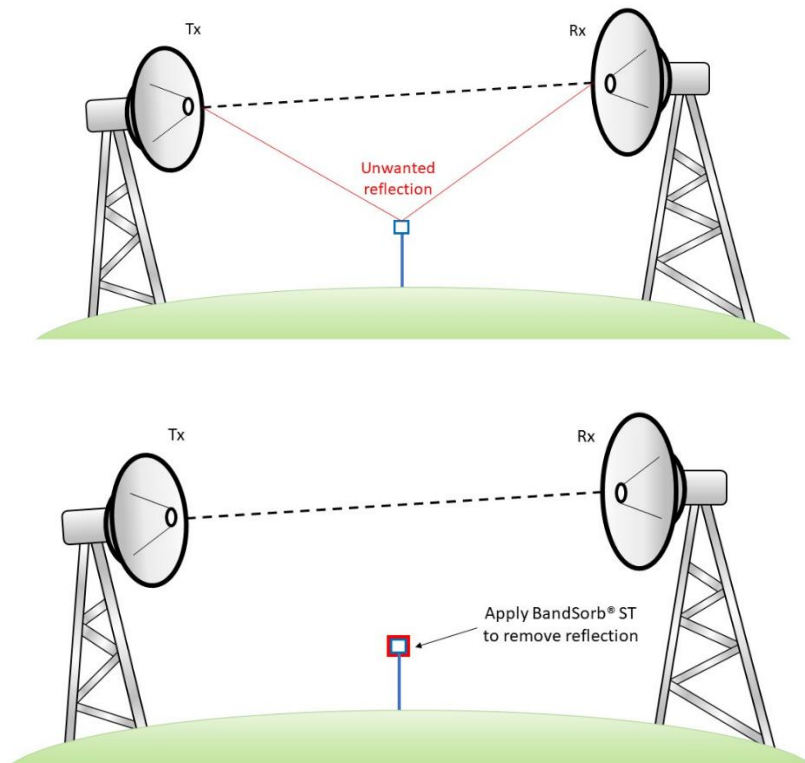
-The technical specification data is based on SEM tests and analysis that we believe to be reliable. However, in no event, shall SEM be liable for inaccuracies or omissions contained therein. In all cases, details and values should be verified by the customer

Electromagnetic Properties



Application example

Example 1 – To remove reflection from substrate.



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Instructions for use :

BandSorb® ST is designed to function directly in front of a metallic surface. If this is not the case, a metallic foil should first be bonded to the object.

BandSorb® ST materials can be supplied with or without pressure sensitive adhesive (PSA). It can be readily cut with or a sharp knife.

It is a very flexible material and will conform to mild curvatures.

Part number system example

ST - 15 - A
Product name Resonant Frequency (GHz) with Pressure Sensitive Adhesive: A, blank: no tape