

ECCOSORB® BSR

High-Loss, Ultra-Thin, Elastomeric Microwave Absorber

Material Characteristics

- Thin, flexible, high-loss, electrically non-conductive silicone rubber sheet
- Available in two types, ECCOSORB® BSR-1 and ECCOSORB® BSR-2
- Frequency range from 6 GHz to mm wave
- Low out-gassing properties for space applications
- Can be easily cut with a knife or scissors and be fitted to compound curves

Applications

- ECCOSORB® BSR is engineered to reduce or eliminate surface currents, cavity resonance, coupling, and generally dampen reflections
- ECCOSORB® BSR recommended for use in high reliability aerospace, military, and space applications, exhibiting excellent thermal cycling, shock and vibration absorption characteristics

Availability

- ECCOSORB® BSR is available in 12" x 12" sheets (30.5 cm x 30.5 cm)
- Standard thicknesses are 0.010" (0.25mm), 0.020" (0.51mm), 0.040" (1.01mm), 0.060" (1.52mm), and 0.100" (2.54mm)
- For most applications ECCOSORB® BSR can be supplied with a Pressure Sensitive Adhesive (PSA). Product designation denoting ECCOSORB® BSR with a PSA is ECCOSORB® BSR-X/SS6M
- ECCOSORB® BSR is available in other thicknesses, sizes, and customer specified shapes upon request
- Die cut parts can be supplied kiss cut for ease of usage in high volume applications

Instructions for Use

- For applications where the service temperature exceeds 250°F (ECCOSORB® SS6M, PSA service temperature) ECCOSORB® BSR can be bonded to most substrates using a 2 part RTV adhesive

Typical Properties

Service Temperature, °F (°C)	-65 to 320 (-54 to 160)
Hardness, Shore A	>70
Volume Resistivity, ohm-cm	2 x 10 ⁸
Thermal Expansion per °F (°C)	35 x 10 ⁻⁶ (63 x 10 ⁻⁶)
Thermal Conductivity, (cal)(cm)/(sec)(cm ²)(°C) (BTU)(in)/(hr)(ft ²)(°F)	0.0021 6.0
Water Absorption, % 24 hours	<0.1
%TML (with SS6M)	0.47 (0.29)
%CVCM (with SS6M)	0.28 (0.08)
Dielectric Strength, volts/mil	>10
Weight, lbs/ft ² (kg/m ²), .010" thick	0.23 (1.1)
Weight, lb/ft ² (kg/m ²), .040" thick	1.0 (4.88)

Typical Attenuation

	GHz	10 ⁻⁷	10 ⁻⁶	10 ⁻⁵	10 ⁻⁴	10 ⁻³	10 ⁻²	10 ⁻¹	1.0	3.0	8.6	10.0	18.0
BSR-1	dB/cm	0	0	0	0	0	0.03	0.48	6.5	20	63	67	149
	dB/in	0	0	0	0	0	0.08	1.2	16.51	50	160	170	378
BSR-2	dB/cm	0	0	0	0	0	0.03	0.27	2.8	11	46	56	119
	dB/in	0	0	0	0	0	0.08	0.69	7.1	28	117	142	302

*Note: Attenuation is a theoretical property calculated from the Complex Permittivity and Complex Permeability of a lossy material and is strictly a means of comparing one absorbing material to another. The attenuation properties are not an indication of how the material will perform inside a microwave device. The frequencies of use recommended for ECCOSORB® BSR-1 & ECCOSORB® BSR-2 in the Typical Properties Table of this bulletin are based on application experience at Emerson & Cuming Microwave Products Inc.