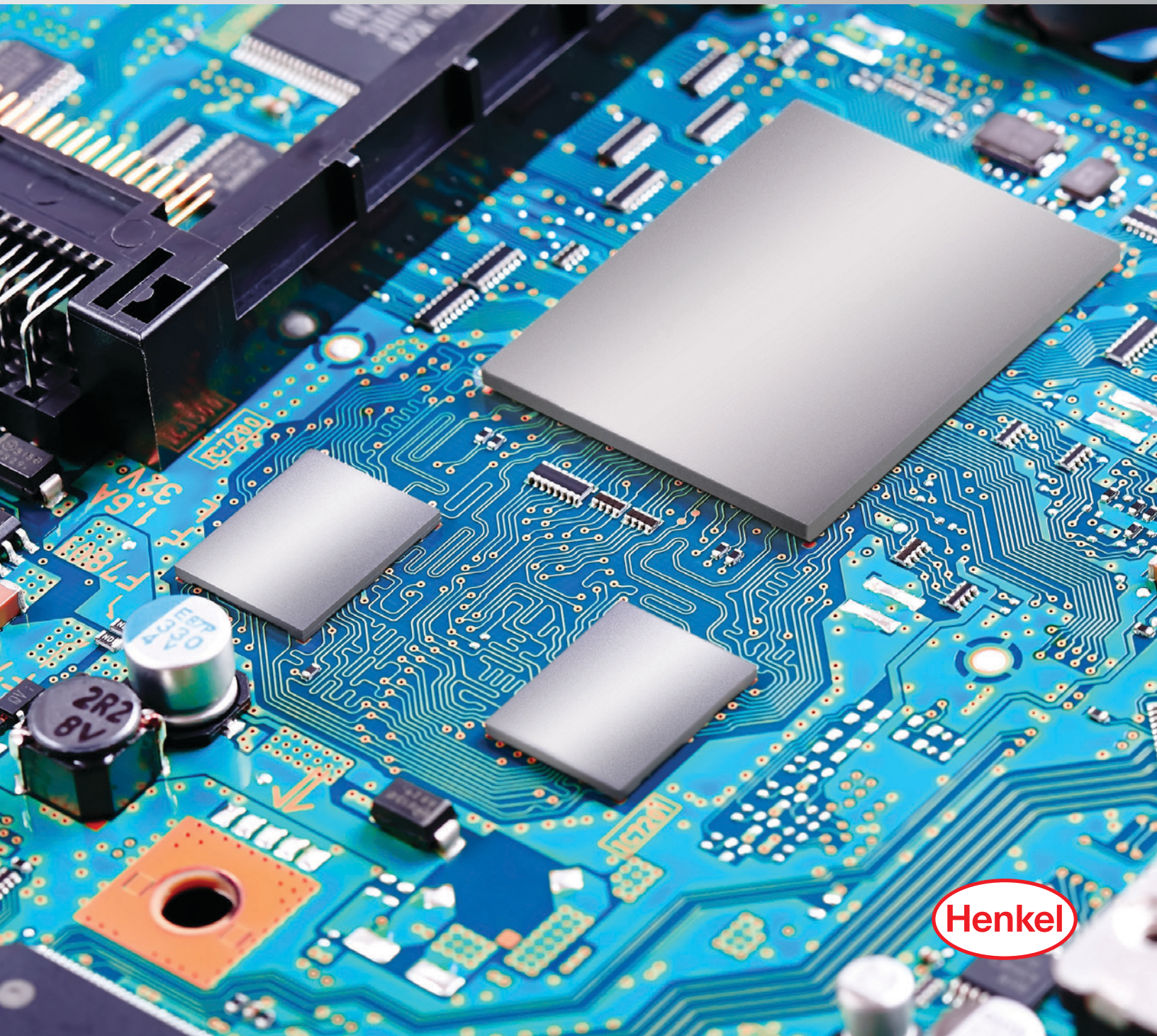




PACKAGE LEVEL EMI SHIELDING SOLUTIONS

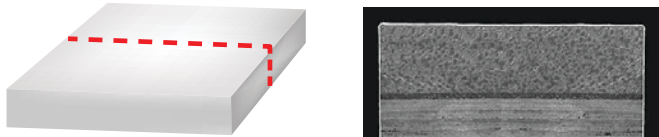
CONFORMAL AND COMPARTMENTAL SHIELDING TECHNOLOGIES



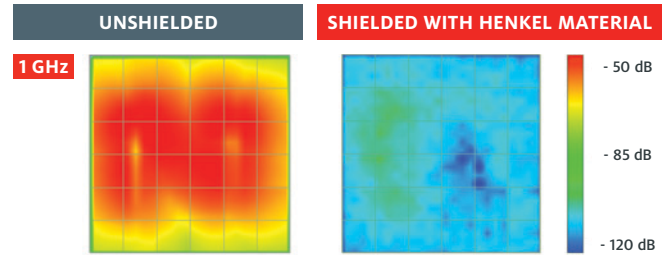
CONFORMAL SHIELDING

The thinly spray-coated material provides uniform coverage on top and sidewalls, clean edges without backside contamination, and excellent adhesion to mold compound with outstanding Shielding Effectiveness (SE). This technology is simple, allowing easy production scalability and design flexibility with minimal cost of ownership using spray-coating, compared to other costly methods such as PVD/sputtering.

Cross Section of Conformal Shielding



Unshielded and Shielded with Henkel Technology



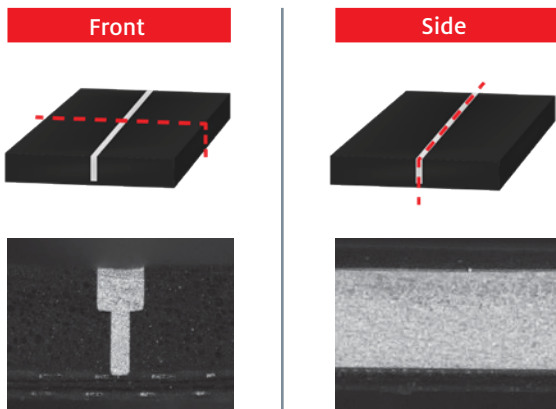
Conformal EMI Shielding Material Properties

GENERAL PROPERTIES	LOCTITE® ABLESTIK EMI 8660S	LOCTITE ABLESTIK EMI 8880S
Application Method	Spray	Spray
Viscosity, 5 rpm (cP)	250	550
Thixotropic Index (0.5 rpm/5 rpm)	1.2	1.4
Conductive Filler Type	Proprietary Ag	Proprietary Ag
Volume Resistivity ($\Omega \cdot \text{cm}$)	1.5×10^{-5}	7.9×10^{-6}
Curing Condition	175°C, 1 hour in air	175°C, 1 hour in air
Optimal Coating Thickness (μm)	3~5	3~5
Adhesion to EMC (ASTM Cross Hatch Test)	5B (0% peel)	5B (0% peel)
Shielding Effectiveness (dB)	90 (Excellent)	90 (Excellent)
Target Frequency Range	500 MHz ~ 10 GHz	10 MHz ~ 10 GHz

COMPARTMENTAL SHIELDING

The jet-dispensed, highly flowable, conductive material is capable of filling a narrow trench with high aspect ratios to create shielded partitioning within a package. This material technology offers high adhesion to the inner sidewalls and the bottom of the trench.

Cross Section of Compartmental Shielding



Typical Compartment EMI Shielding Material Properties

GENERAL PROPERTIES	TYPICAL HENKEL MATERIAL
Application Method	Jet-Dispense
Viscosity, 5 rpm (cP)	5000
Thixotropic Index (0.5 rpm/5 rpm)	< 1.5
Conductive Filler Type	Ag or Ag-coated Cu
Volume Resistivity ($\Omega \cdot \text{cm}$)	7.0×10^{-5}
Adhesion Interfaces	EMC, Copper, Solder
Supported Trench Width (μm)	60 and above
Trench Aspect Ratio (Depth: Width)	Up to 10:1
Cure Shrinkage	Low
Stress Management	Good

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