

# 3M Aluminum Foil Tape 300PL

Technical Data

December, 2006

**Product Description** 3M™ Aluminum Foil Tape 300PL is an aluminum foil tape with a high performance acrylic pressure sensitive adhesive on one side.

3M Tape 300PL is designed to be an economical aluminum foil tape that will provide good EMI shielding performance while also providing excellent environmental resistance, sealing capability and surface protection.

3M™ Aluminum Foil Tape 300PL uses a high performance acrylic adhesive that will provide excellent shear holding strength and also good environmental resistance.

## Construction

Properties	Value
Adhesive Type	Acrylic Pressure Sensitive
Release Liner	Silicone-treated Paper liner
Approximate Thickness	
Aluminum	0.047mm (1.9mil)
Adhesive	0.031mm (1.2mil)
Liner(s)	0.070mm (2.9mil)



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## Typical Physical Properties and Performance Characteristics

*Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.*

### Adhesive Properties:

#### Peel Adhesion Testing

180 degree peel , Test Method: modified ASTM D-3330 (units: N/100mm width)

Substrates	Initial Peel	Peel After 15 minute Dwell
Steel	85	100
PC	83	91
ABS	63	76
PS	75	84

#### Static Shear Holding Test

Test Method: modified ASTM D-3654

Test Condition	Test Results
1000g @ 25C	Tape applied to test substrate held 1000g vertically for > 10,000 minutes
1000g @ 75C	Tape applied to test substrate held 1000g vertically for > 1000 minutes

Temperature Performance<sup>1</sup> Application Use Temperatures: -40 to 95°C. Temperature performance can vary with environmental conditions<sup>1</sup>

Shelf Life and Storage Conditions Tape in roll form: Shelf life 24 months from the date of manufacture when stored in original cartons at 21°C (70°F) and 50% relative humidity

### Tensile and Elongation

Tensile Strength	260 N/100mm width (ASTM D-3759)
Elongation @ Break	3% with 0.047mm backing thickness (ASTM D-3652)

1. Application Use Temperature range of the 3M™ Aluminum Foil Tape 300PL is dictated by two primary items: 1) temperature / environmental conditions, and 2) substrates applied to. These items affect both long term and short term performance:

#### Item 1 Temperature/Environmental:

Basic long term (months) continuous temperature performance of 3M Tape 300PL acrylic adhesive is generally -40 to 95C depending on other environmental conditions (exposure to reactive or corrosive fluids, duration of maximum temperature exposure and cycles, typical operation temperature, humidity levels, etc.).

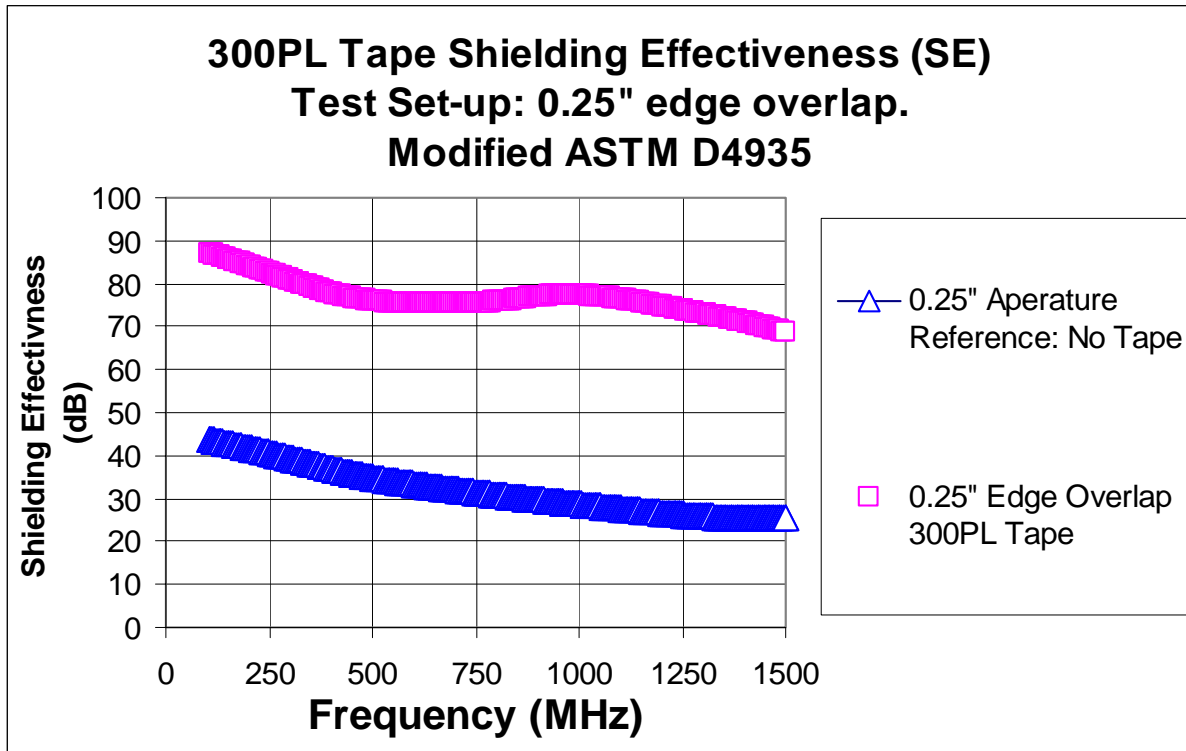
Short term exposures (minutes-hours) from 150C to 200C or higher can be achieved depending on the performance attributes desired from 3M Tape 300PL and the duration of each exposures (plus cumulative exposure times).

#### Item 2 Substrates Applied to:

Substrates characteristics such as high or low surface energy material, vapor transmission through substrate surface, cleanliness of the surface, smoothness of the surface, etc. will affect 3M™ Aluminum Foil Tape 300PL adhesion performance.

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## EMI Shielding Performance



EMI Shielding performance can vary depending on several factors, including items such as test method, edge overlap of 3M™ Aluminum Foil Tape 300PL as it covers a gap or aperture opening, geometric shape, and application details of 3M tape 300PL.

Available Sizes	Slit Tape Width	Standard Length	Maximum Length
	110mm or 1100mm	200m	TBA

### Application Techniques **Bonding**

- To obtain maximum adhesion, the bonding surfaces must be clean and dry.
- Pressure must be applied to the bond line after assembly to wet the substrates with the adhesive used with the 3M™ Aluminum Foil Tape 300PL. Mechanical pressure (roller, metal bar) or finger pressure at 15 psi (0.10 Mpa) or greater is suggested. Heat may be applied simultaneously to improve wetting and final bond strength.
- 3M Tape 300PL should be applied between 60°F - 158°F (15°C - 70°C). Tape application below 50°F (10°C) is not recommended because the adhesive will be too firm to wet the surface of the substrate, resulting in low adhesion.
- Adhesion builds with time, up to 24 to 72 hours may be required to reach final adhesion values.

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**General Information** 3M™ Aluminum Foil Tape 300PL is part of a family of products useful for EMI shielding applications. Custom EMI shielding tapes can be made by combining 3M conductive PSAs to various substrates.

## Conductive PSA Adhesive Product Selection Guide

3M™ Electrically Conductive Adhesive Transfer Tape	EMI Shield/ Cage			Gasket Attachment / Grounding			Attributes		
	SS	Alum	Cloth				PSA Type	Filler	Thickness
9712		x	x	x	x	x	Acrylic	Scrim	5.0 mil
9713	x	x	x	x	x	x	Acrylic	Scrim	3.0 mil
9719	x	x	x	x	x	x	Silicone	Scrim	4.0 mil
9708-9709	x	x	x	x	x	x	Acrylic	Particle	2.0 mil
9705	x	x	x			x	Acrylic	Particle	2.0 mil

**Application Ideas** 3M Tape 300PL is ideal for EMI/RFI shielding applications. The foil backing also provides an excellent reflective surface for both heat and light.

<b>Precautionary Information</b>	Refer to Product Label and Material Safety Data Sheet for Health and Safety Information before using this product.
<b>For Additional Information</b>	To request additional product information or to arrange for sales assistance, call toll free 1-800-251-8634. Address correspondence to 3M Electronics Markets Materials Division, Building 21-1W-10, 900 Bush Avenue, St. Paul, MN 55144-1000. Our fax number is 651-778-4244 or 1-877-369-2923. In Canada, phone: 1-800-364-3577. In Puerto Rico, phone: 1-787-750-3000. In Mexico, phone: 52-70-04-00.
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