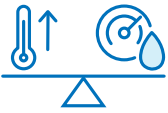


3M™ Electrically Conductive Tapes 5113 Series

3M material science and EMI/RFI management expertise brings you a new conductive adhesive chemistry for today's demanding applications.

Manage complex EMI design challenges for reliable performance.

Engineered for:	To give you:
4-year shelf-life 	» Reliable, consistent performance over time » Easy selection process for design flexibility
Temperature durability 	» Long-term performance at high temperatures (105°C) for demanding applications » High-performance in humid conditions for greater design flexibility
Low electrical resistance 	» Excellent grounding with small contact areas, helping enable micro-electronic design » Low electrical resistance/high adhesion helps provide reliable EMI shielding and grounding for a wide range of frequencies
Adhesion to select LSE substrates 	» High performance on a variety of substrates for design versatility » Can reduce the need to use a primer when bonding some LSE substrates
Conformable 	» Works with a variety of designs » Precise placement in tight spaces to create EMI sealed bond lines
PIM mitigation 	» Helps control signal interference through PIM mitigation for higher signal integrity and performance

Introducing a new portfolio offering electrically conductive tapes using an innovative conductive polyolefin adhesive and conductive particle matrix for enhanced performance.

3M™ Electrically Conductive Tape 5113 Series features XYZ-axis conductivity with a conductive matrix carrier and 3M's innovative new conductive polyolefin pressure sensitive adhesive (PSA). The combination of Ni/Cu/ Ni-coated conductive woven fabric carrier and proprietary conductive polyolefin adhesive filled with Ni-coated graphite particles offers high adhesion, low resistance, long shelf life, improved performance in humid environments, and great grounding performance to a broad range of substrates and surface types.

This product series has a four-year shelf-life that is stable in humid conditions, made possible by a moisture resistant polyolefin adhesive chemistry.

Market Segments:

These tapes provide robust protection against EMI in a range of market segments:

- » General industrial electronics
- » Aerospace and defense electronics
- » Appliances, automotive and IoT devices
- » Communications infrastructure
- » Medical equipment
- » More

Applications:

 Flex circuit to flex circuit interconnection	 Camera module grounding	 Electrostatic discharge (ESD)
 EMI shield and gasket attachment	 Shield can lid	 PCB/flex/chassis grounding
 Bond line gap shielding	 Medium pitch flexible circuits and PCBs	 PIM management

3M™ Electrically Conductive Double-Sided Tape 5113DFT-50

Introducing a new go-to double-sided fabric tape for your complex grounding applications.

3M™ Electrically Conductive Double-Sided Tape 5113DFT is an XYZ-axis double-sided fabric tape (DFT) consisting of a conductive matrix carrier and 3M's innovative new conductive polyolefin pressure sensitive adhesive (PSA). Based on 3M's new proprietary polyolefin conductive adhesive, 3M tape 5113DFT provides premium performance including high adhesion, low electrical resistance, long shelf life, improved temperature resistance and excellent grounding and shielding performance.

The table below illustrates key performance properties of 3M™ Electrically Conductive Double-Sided Tape 5113DFT-50 compared to a similar 3M high performing double-sided tape.

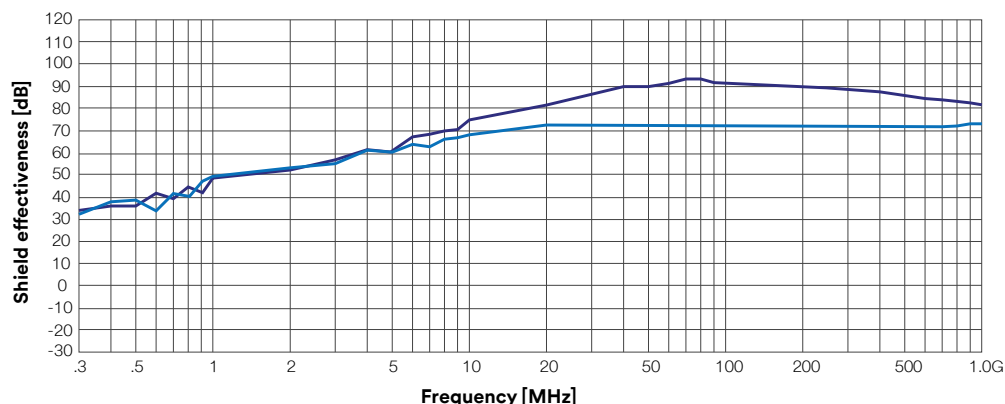


Property	3M™ Electrically Conductive Double-Sided Tape 5113DFT-50	3M™ Electrically Conductive Double-Sided Tape 9711S-50
	High adhesion, 4-year shelf life, polyolefin adhesive	High adhesion, acrylic adhesive
Thickness	50µm	50µm
Adhesion to SUS (gf/inch) 24-hour dwell	1500	1800
Electrical resistance through XY-axis (ETM-1)	0.1Ω	0.1Ω
Electrical resistance through Z-axis (ETM-11)	0.03Ω	0.03Ω
Short-term/long-term temperature	121°C/105°C	121°C/85°C
Shelf life	48 months	12 months
Top applications	FPC grounding, frame grounding	Grounding
Product construction	Transparent PET easy release liner (3 mil) Conductive polyolefin PSA Conductive fabric Conductive polyolefin PSA Transparent PET release liner (2 mil)	Transparent PET release liner (2 mil) Conductive acrylic PSA Conductive fabric Conductive acrylic PSA Transparent PET release liner (1.5 mil)

The above technical information and data should be considered representative or typical only and should not be used for specification purposes. Contact your 3M Technical Representative for details.

Double-Sided Conductive PSA Shielding Effectiveness Chart

Test Method: KEC-01_Electrical Field



— 5113DFT-50
— 9711S-50

The following technical information was generated in a 3M lab utilizing the KEC-01_Electrical Field test method. The data should be considered representative or typical only and not be used for specification purposes. Contact your 3M Representative for additional details.

3M™ Electrically Conductive Single-Sided Tape 5113SFT-50

Introducing a new go-to single-sided fabric tape for your dynamic shielding and covering applications.

3M™ Electrically Conductive Single-Sided Tape 5113SFT is an XYZ-axis single-sided fabric tape (SFT) consisting of a conductive matrix carrier and 3M's innovative new conductive polyolefin pressure sensitive adhesive (PSA). Based on 3M's new proprietary polyolefin conductive adhesive, 3M tape 5113SFT provides premium performance including high adhesion, low electrical resistance, long shelf life, improved temperature resistance and excellent grounding and shielding performance.

The table below illustrates key performance properties of 3M™ Electrically Conductive Single-Sided Tape 5113SFT-50 compared to a similar 3M high performing single-sided tape.

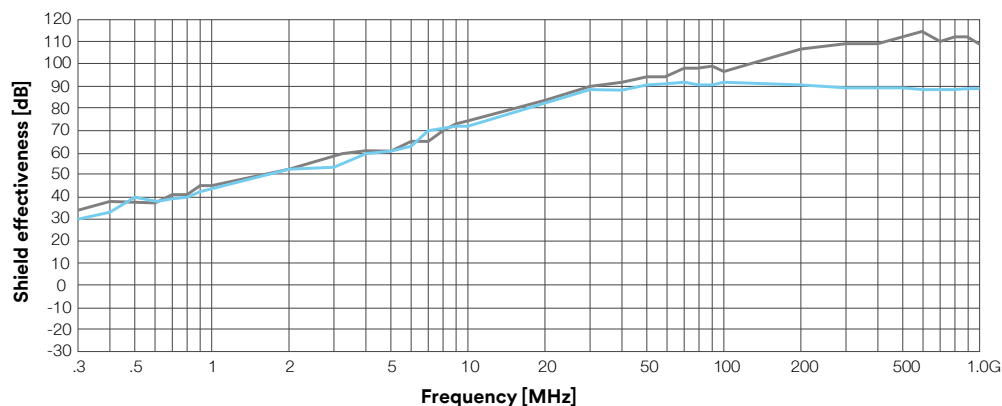


Property	3M™ Electrically Conductive Single-Sided Tape 5113SFT-50	3M™ Electrically Conductive Single-Sided Tape 3304BC-S
	High adhesion, 4-year shelf life, polyolefin adhesive	Best shield-can lid replacement, copper foil layer, acrylic adhesive
Thickness	50µm	45µm
Adhesion to SUS (gf/inch) 24-hour dwell	1500	1500
Electrical resistance through XY-axis (ETM-1)	0.1Ω	0.1Ω
Electrical resistance through Z-axis (ETM-11)	0.03Ω	0.03Ω
Short-term/long-term temperature	121°C/105°C	Est 121°C/85°C
Shelf life	48 months	12 months
Top applications	Frame grounding, shield-can lid replacement	Shield-can lid replacement
Product construction	Conductive fabric carrier Conductive polyolefin adhesive Transparent PET release liner (3 mil)	Top layer (carbon black) Copper foil Conductive Ni/Cu nonwoven acrylic PSA Transparent PET release liner (2 mil)

The above technical information and data should be considered representative or typical only and should not be used for specification purposes. Contact your 3M Technical Representative for details.

Single-Sided Conductive PSA Shielding Effectiveness Chart

Test Method: KEC-01_Electrical Field



5113SFT-50
3304BC-S

The following technical information was generated in a 3M lab utilizing the KEC-01_Electrical Field test method. The data should be considered representative or typical only and not be used for specification purposes.

Contact your 3M Representative for additional details.

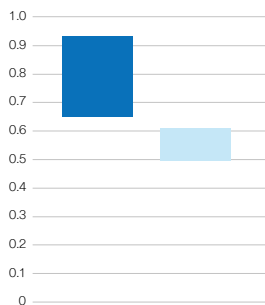
Additional technical information

The excellent performance of 3M™ Electrically Conductive Tapes 5113 Series – from high adhesion to low electrical resistance, and resistance to high temperatures and humidity – is demonstrated in the data below.

Temperature durability

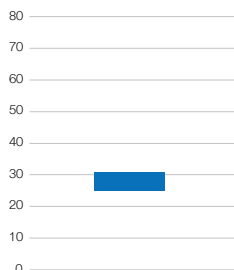


The following technical information was generated in a 3M lab utilizing the ASTM D3330, ETM-12, and ETM-7 test methods as noted below. The data should be considered representative or typical only and not be used for specification purposes.



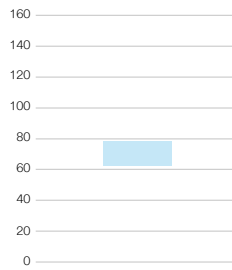
3M tape 5113DFT-50 and 3M tape 5113SFT-50 180 peel strength (N/mm) ASTM D3330 test

No tape aging; 2 week tape dwell @ 105°C



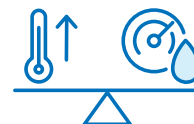
3M tape 5113DFT-50 ETM-12 resistance test (mohm)

No tape aging; 2 week tape dwell @ 105°C



3M tape 5113SFT-50 ETM-7 resistance test (mohm)

No tape aging; 2 week tape dwell @ 105°C

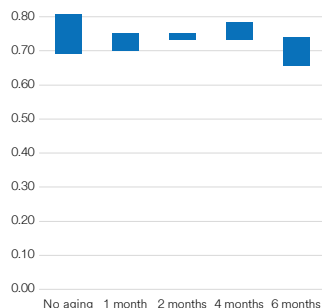


Moisture resistance

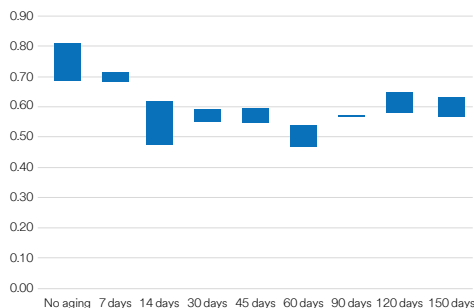
The 3M tape 5113 series resists high temperatures and humidity, enabling good adhesive strength and electrical resistance over multiple years.

Adhesion reliability

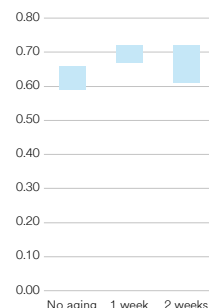
The following technical information was generated in a 3M lab utilizing the ASTM D3330 test method. The data should be considered representative or typical only and not be used for specification purposes.



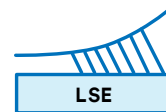
3M tape 5113DFT-50 @ 60°C 180 peel strength (N/mm) ASTM D3330 test



3M tape 5113DFT-50 @ 80°C 180 peel strength (N/mm) ASTM D3330 test



3M tape 5113SFT-50 @ 95°C 180 peel strength (N/mm) ASTM D3330 test

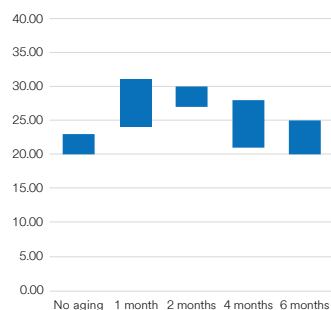


Adhesion

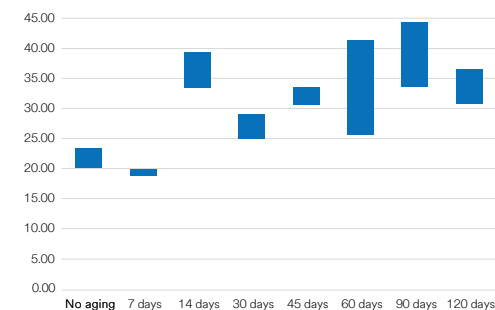
The 3M tape 5113 series demonstrates strong adhesion.

Electrical resistance

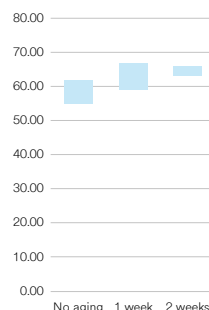
The following technical information was generated in a 3M lab utilizing the ETM-12 test method. The data should be considered representative or typical only and not be used for specification purposes.



3M tape 5113DFT-50 @ 60°C ETM-12 resistance test (mohm)



3M tape 5113DFT-50 @ 80°C ETM-12 resistance test (mohm)



3M tape 5113SFT-50 @ 95°C ETM-12 resistance test (mohm)



Electrical resistance

The 3M tape 5113 series demonstrates strong electrical resistance even after 3-month aging.



**Contact your 3M sales representative or visit
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