

3M™ Electrically Conductive Tapes Selection Criteria

Selecting a 3M™ Electrically Conductive Tape for grounding, shielding, and attachment includes identifying several application requirements. For instance, the selection process could consider the following items, among others:

- 1 - Contact R target
- 2 - Contact surface type
- 3 - Adhesion level desired
- 4 - Bond line thickness
- 5 - XYZ or Z conductivity path
- 6 - Operating temperature range and environmental conditions
- 7 - EMI shielding in bond line “gap/slit” for higher frequencies
- 8 - Surface contact area for adhesion
- 9 - Assembly pressure, temperature and time

Meet your “go-to” materials

3M created the EMI/RFI Management Solutions Go-To Material List (GTML) to provide fast and reliable service on our go-to materials. The GTML includes materials that cover most applications and provide differentiated solutions for various EMI design challenges.

Make these materials the first, go-to options for EMI challenges, supplemented by a broader line of 3M EMI/RFI materials for niche applications.

★ = Indicates which select thicknesses are part of the GTML.

The “**Good** - **Better** - **Best**” rankings are based on the 3M Test Method and tape performance in a nominal application.

**This information is based on tests performed at 3M laboratory facilities. While we believe that these test results are reliable, your results may vary due to differences in test conditions, your facility/lab environment, or the other conditions within your control. This information is intended for industrial/occupational use by persons with the knowledge and technical skills to analyze, handle and use such information. It is supplemental only and is not intended to replace the detailed information found in written 3M product literature. For additional information, including important safety and warranty information, regarding 3M EMSD products, please refer to the data sheets, instruction and/or installation manuals.*

Product	Typical contact resistance (R ohms Ω)	EMI shielding in bond line gap/slit	Flex to PCB contact resistance (R ohms Ω)	Peel strength (24 hr/RT)	Workability	Thermal conductivity/resistance (W/mK or C/W)
3M™ Electrically Conductive Double-Sided Tapes						
3M™ Electrically Conductive Adhesive Transfer Tapes						
★ 3M tape 9703	Good	N/A	Better	Good	Good	Good
3M tape 9709SL	Better	Better	Best	Good	Better	Best
3M tape 9712	Good	Good	Good	Better	Good	Good
3M tape 9713	Better	Good	Good	Better	Good	Good
3M tape 9719	Good	Good	Good	Good = Std.	Good	Good
				Best = LSE		
3M™ Electrically Conductive Double-Coated Tapes						
★ 3M tape 5113DFT	Best	Best	Best	Better	Best	Better
3M tape 9772	Best	Best	Good	Good	Best	Best
3M tape 9711S	Best	Better	Best	Best	Best	Better
3M tape 9750	Better	Better	Better	Best	Better	Good
3M™ Electrically Conductive Single-Sided Tapes						
★ 3M tape 5113SFT	Better	Good	Better	Good	Better	Good
3M tape 3304BC-S	Best	Best	Best	Better	Better	Good
3M tape 1020BC	Best	Better	Best	Good	Best	Better
★ 3M tape 1050TC	Best	Better	Best	Good	Better	Best
3M tape CEF-3BV	Good	Good	Good	Better	Better	Good

- » **Typical contact resistance** - Gold flex bonded to stainless steel (SS). “Best” results relate to a lower contact R potential on SS Contact R can vary with SS type tested. Lower contact resistance can allow for improved EMI shielding of a design.
- » **EMI Shielding in Bond Line “Gap/Slit”** - Best = High dB EMI Shielding. Inherent EMI shielding at the bond line provides significantly reduced crosstalk, stray EMI, noise in circuit, antennae effects, FPC susceptibility and spurious emissions.
- » **Flex to PCB Contact Resistance** - Potential to improve contact R grounding locations via improved surface conformability and XYZ conductive potential with a 3M electrically conductive tape or film vs. a generic Z-axis only conductive PSA.
- » **Peel Strength** - Adhesion to SS type substrate/3M Test Method/24 hour room temp dwell.
- » **Workability** - Ease of Rework based on a standard set of high surface energy substrates. The tape design can affect rework based on adhesive type and conductive filler type.
- » **Thermal Conductivity/Thermal Resistance** - Effective Thermal Resistance and Thermal Conductivity vs. a generic PSA without conductive fillers. Important for thermal connection performance between substrates.