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Brand

Tekra
Featured Product

Electrically Conductive Tapes Selection Criteria

Why your design needs an Electrically Conductive Tape

3M™ Electrically Conductive Tapes are designed for electromagnetic interference (EMI) shielding and grounding applications, enabling devices to meet electromagnetic compatibility (EMC) requirements. These tapes are used in many electronic assembly operations where a grounding connection needs to be made or the component needs to be shielded from harmful signals. The tapes have electrically conductive fillers to ground signals and redirect EMI. Failure to meet EMC standards can result in device failure.

3M™ Electrically Conductive Tapes feature high electrical conductivity, which provides low resistance for small contact areas and high frequencies. These electrically conductive tapes provide excellent adhesion to a variety of substrates including metals and plastics. There are multiple thicknesses to meet the most space-constrained and complex design requirements.

Selection criteria

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

1. **Contact/Electrical resistance (R) target:** Lower contact resistance can allow for improved EMI shielding of a design
2. **Contact surface type:** Contact R can vary with substrates
3. **Adhesion level desired:** Create a strong bond for reliable performance
4. **Bond line thickness:** Gap thickness where two substrates come together
5. **Z or XYZ conductivity path:** XYZ-Axis Tapes - interconnection between substrates through the adhesive thickness (Z-axis) and electrical conductivity in the plane of the adhesive (XY-axis). Z-Axis Tapes- interconnection between substrates through the adhesive thickness (Z-axis) but spaced enough apart to be electrically insulating in the plane of the adhesive
6. **Operating temperature range and environmental conditions:** Helps indicate the type of adhesive needed
7. **EMI shielding in bond line “Gap/Slit” for higher frequencies:** Inherent EMI shielding at the bond line provides significantly reduced crosstalk, stray EMI, noise in circuit, antennae effects, FPC susceptibility and emissions
8. **Surface contact area for adhesion:** Small or large grounding area
9. **Assembly pressure, temperature, and time:** Performance varies with assembly process and environment



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Product	Adhesive Type	Contact resistance*	Attributes
3M™ Electrically Conductive Adhesive Transfer Tape 9712	Acrylic	<25	Carbon Scrim
3M™ Electrically Conductive Adhesive Transfer Tape 9713	Acrylic	<10	Nickel Coated Carbon Scrim (NCCS)
3M™ Electrically Conductive Adhesive Transfer Tape 9719	Silicone	<25	Silicone adhesive, NCCS carrier
3M™ Electrically Conductive Adhesive Transfer Tape 9711S	Acrylic	<0.3	High Adhesion, conductive fabric carrier
3M™ Electrically Conductive Adhesive Transfer Tape 9709SL	Acrylic	<0.3	EMI shielding for enclosure designs, Low contact resistance, SUS grounding
3M™ Electrically Conductive Adhesive Transfer Tape 9707	Acrylic	<0.3	High adhesion version of 9709SL
3M™ Electrically Conductive Single-Sided Tape 3304BC-S	Acrylic	<.05	Nickel/Copper Nonwoven high shielding performance