5419 Low Static Polyimide Film Tape

Product Data Sheet

Updated : March 1996
Supersedes : November 1993

Product Description

A translucent polyimide film backed silicone adhesive tape with unique and extremely low electrostatic discharge properties for gold edge protection during wave soldering of printed circuit boards.

Physical Properties
Not for specification purposes

Adhesive Type	Silicone	
Backing	Polyimide	
Thickness (ASTM D-3652)	70 µm	
Backing Thickness	30 µm	
Tape Colour	Gold	
Shelf Life	12 months from date of despatch by 3M when stored in the original carton at 21°C (70°F) & 50 % Relative Humidity	

Performance Characteristics
Not for specification purposes

Adhesion to Stainless Steel ASTM D-3330	2.2 N/10mm	
Tensile Strength ASTM D-3759	577.8 N/10mm	
Elongation at Break ASTM D-3759	60 %	
Temperature Range Maximum Minimum	260 °C -73 °C	
Dielectric Strength	7000 volts	
Insulation Resistance	$>1*10^6$ ohms	

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Static Charge	(Measured at 50% RH, 21° in an ESD Controlled Environment.	
Removal from roll	< 150 volts	
Removal from PCB	< 50 volts	

Additional Product Information

5419 tape employs a proprietary technology that results in extremely low electrostatic discharge at unwind and removal from the PCB. Conventional polyimide tapes can typically generate over 10,000 volts during use which can damage board mounted electronic components.

5419 tape overcomes this problem without any of the typical drawbacks of conventional "anti-static" or "static-free" tapes (e.g. variable adhesion and opaqueness).
At room temperature the properties of polyimide and polyester film are similar.

However, as the temperature increases or decreases, to properties of the polyimide film are less affected than polyester. Polyimide film does not soften at elevated temperatures, thus, the film provides an excellent release surface at elevated temperatures.

Application Techniques

Best results are attained when applied to a clean, dry and non dusty surface above 0°C.

To improve adhesion ensure firm and even application pressure is applied.

Applications

Mask for printed circuit boards during wave solder or solder dip process.

Used as release surface in fabrication of parts cured at elevated temperatures.

Features	Advantages	Benefits
Polyimide Film	Dimensionally stable at high temperatures. Flame retardant and chemical resistant.	Helps promote high productivity. Protect surfaces, helping reduce replacement.
Silicone Adhesive	High temperature performance reduces adhesive transfer.	Helps promote high productivity.
Low Static	Virtually eliminates circuit board degradation due to electrostatic discharge.	Reduces costly board waste due to component failure.

Values presented have been determined by standard test methods and are average values not to be used for specification purposes.
Our recommendations on the use of our products are based on tests believed to be reliable but we would ask that you conduct your own tests to determine their suitability for your applications.
This is because 3M cannot accept any responsibility or liability direct or consequential for loss or damage caused as a result of our recommendations.

3M

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