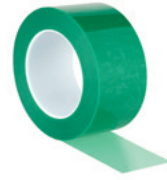


3M™ High-Temperature Tapes

Product Selection Guide



**3M™ Greenback Printed
Circuit Board Tape 851,
Green**



**3M™ LED Potting
Tape 851J,
Green**



**3M™ Circuit Plating
Tape 851L,
Green**



**3M™ Polyester/Silicone
Tape 851ST,
Green**



**3M™ Polyester
Tape 854,
Cream**

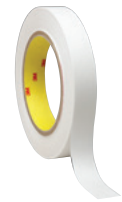


**3M™ Circuit Plating
Tape 1280,
Red**



**3M™ Polyimide Film
Tape 5413,
Amber**

| Performance Features | Low Stretch, No Adhesive Residue | Low-Shrink PET, No Adhesive Residue | Low Stretch | Abrasion Resistant, Chemical Resistant, No Adhesive Residue, Thermal Resistant | Anti-Erosion in Electrolyte, Chemical Resistant, No Adhesive Residue | Halogen Free, Low Stretch, No Adhesive Residue | Chemical Resistant, Flame Retardant (UL510FR), Halogen Free, No Adhesive Residue, Radiation Resistant |
|---|---|---|--|---|---|---|---|
| Description | 3M™ Circuit Plating Tape 851 with polyester film and blended silicone and rubber adhesive used for PCB masking and other high-temperature applications. Green, 4.0 mil thick. | 3M™ LED Potting Tape 851J is a green polyester film tape with a unique adhesive system, which effectively seals and protects during the potting process of the manufacturing of LED faceplates. Green, 3.6 mil thick. | 3M™ Lined Circuit Plating Tape 851L with polyester film and blended silicone and rubber adhesive use for PCB solder masking tape and other high-temperature applications. Thick adhesive coating. Green, 3.58 mil thick. | 3M™ Polyester/Silicone Tape 851ST is a polyester tape with a silicone adhesive designed for powder coating and other high-temperature masking applications. Green, 2.4 mil thick. | 3M™ Polyester Tape 854 is an opaque, cream-colored polyester tape with excellent chemical resistance for precious metal plating, especially gold. | 3M™ Circuit Plating Tape 1280 with polyester film used for PCB masking tape or other high-temperature applications. Red, 3.6 mil thick. | 3M™ Polyimide Film Tape 5413 with DuPont™ Kapton® polyimide film and silicone adhesive used for PCB solder masking and other high-temperature applications. Amber, 2.7 mil thick. |
| Product Part Number | 851 | 851J | 851L | 851ST | 854 | 1280 | 5413 |
| Product Form | Roll | Roll | Roll | Roll | Roll | Roll | Roll |
| Typical Application | Circuit Plating | LED Potting | Circuit Plating | Circuit Plating | Solder Masking | Circuit Plating | Solder Masking |
| Color | Green | Green | Green | Green | Cream | Red | Amber |
| Adhesive | Silicone/Rubber Blend | Silicone/Rubber Blend | Silicone/Rubber Blend | Silicone | Synthetic Rubber | Silicone/Rubber Blend | Silicone |
| Backing | Polyester (PET) | Polyester (PET) | Polyester (PET) | Polyester (PET) | Polyester (PET) | Polyester (PET) | Polyimide |
| Primary Liner | None | Translucent Green | Polyester (PET) | Green | None | None | None |
| Standard Roll Size | 144 Linear Yards | 36 Linear Yards | 144 Linear Yards | 55 Linear Yards | 72 Linear Yards | 72 Linear Yards | 36 Linear Yards |
| Standard Roll Size (metric) | 132 Meters | 33 Meters | 132 Meters | 50 Meters | 65 Meters | 65 Meters | 33 Meters |
| Temp Range (°Celsius) | -40°C to 155°C | -40°C to 155°C | -40°C to 155°C | -40°C to 218°C | -50°C to 150°C | -40°C to 155°C | -73°C to 260°C |
| Temp Range (°Fahrenheit) | -40°F to 311°F | -40°F to 311°F | -40°F to 311°F | -40°F to 425°F | -50°F to 302°F | -40°F to 311°F | -100°F to 500°F |
| Adhesion to Stainless (oz/in) | 29 oz/in | 30 oz/in | 29 oz/in | 30 oz/in | 55 oz/in | 30 oz/in | 20 oz/in |
| Adhesion to Stainless (metric) | 0.8 kg/25.4 mm 3.3 N/cm | 0.9 kg/25.4 mm 3.4 N/cm | 0.8 kg/25.4 mm 3.3 N/cm | 0.9 kg/25.4 mm 3.4 N/cm | 1.6 kg/25.4 mm 6.0 N/cm | 0.9 kg/25.4 mm 3.4 N/cm | 0.6 kg/25.4 mm 2.2 N/cm |
| Tensile Strength at Break | 27 lb/in | 29 lb/in | 27 lb/in | 23 lb/in | 28 lb/in | 30 lb/in | 33 lb/in |
| Tensile Strength at Break (metric) | 490 N/100 mm | 527 N/100 mm | 490 N/100 mm | 418 N/100 mm | 509 N/100 mm | 545 N/100 mm | 599 N/100 mm |
| Total Tape Thickness without Liner | 3.6 mil | 3.6 mil | 3.6 mil | 2.4 mil | 2.56 mil | 3.6 mil | 2.7 mil |
| Total Tape Thickness without Liner (metric) | 0.09 mm | 0.09 mm | 0.09 mm | 0.06 mm | 0.065 mm | 0.09 mm | 0.07 mm |
| Total Thickness | 3.6 mil | 3.6 mil | 3.6 mil | 2.4 mil | 2.56 mil | 3.6 mil | 2.7 mil |
| Total Thickness (metric) | 0.09 mm | 0.09 mm | 0.09 mm | 0.06 mm | 0.065 mm | 0.09 mm | 0.07 mm |



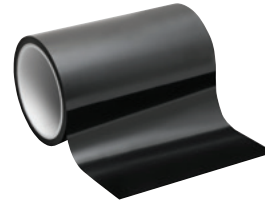
3M™ Water-Soluble Wave Solder Tape 5414, Transparent



3M™ Low-Static Polyimide Film Tape 5419, Gold



3M™ Lined Low-Static Polyimide Film Tape 5433, Amber



3M™ Polyimide Film Tape 7412B, Black



3M™ High-Temperature Polyimide Tape 7412P, Amber



3M™ High-Temperature Polyimide Tape 7413D, Amber



3M™ General Purpose Polyimide Film Tape 7413T, Amber



3M™ General Purpose Polyimide Film Tape 7413T, Amber

| | | | | | | | | |
|--|---|---|---|---|--|--|---|--|
| Performance Features | Die-Cut Capability, No Adhesive Residue | Chemical Resistant, Die-Cut Capability, Flame Retardant (UL510FR), Halogen Free, No Adhesive Residue, Radiation Resistant, Lined | Chemical Resistant, Die-Cut Capability, Flame Retardant (UL510FR), Halogen Free, No Adhesive Residue, Radiation Resistant, Lined | Chemical Resistant, Die Cut Capability, Flame Retardant (UL510FR), Halogen Free, High Electric Insulation, No Adhesive Residue, UV Shielding | Anti-Erosion in Electrolyte, Chemical Resistant, Flame Retardant (UL510FR), Good Insulation, Halogen Free, No Adhesive Residue | Flame Retardant (UL510FR), Halogen Free, No Adhesive Residue | Flame Retardant (UL510FR), Halogen Free, No Adhesive Residue | Flame Retardant (UL510FR), Halogen Free, No Adhesive Residue |
| Description | 3M™ Water-Soluble Wave Solder Tape 5414 has a poly-vinyl alcohol (PVA) backing that is water soluble and a synthetic water-soluble adhesive to mask gold fingers on printed circuit boards during wave soldering. Transparent, 2.1 mil thick. | 3M™ Low-Static Polyimide Film Tape 5419 with DuPont™ Kapton® polyimide film and silicone adhesive used for PCB solder masking and other high-temperature applications. Low-static. Gold, 2.7 mil thick. | 3M™ Lined, Low-Static Polyimide Film Tape 5433 with DuPont™ Kapton® polyimide film and silicone adhesive used for PCB solder masking and other high-temperature applications. Low static. Amber, 2.7 mil thick. | 3M™ Non-Silicone Polyimide Film Tape 7412B with polyimide film and acrylic adhesive used for PCB solder masking and other high-temperature applications, insulation and surface anti-scratch. Black, 3.2 mil thick. | 3M™ High-Temperature Polyimide Tape 7412P with polyimide film and acrylic adhesive used for PCB solder masking and other high-temperature applications. Chemical resistance. Amber, 1.6 mil thick. | 3M™ High-Temperature Polyimide Tape 7413D with polyimide film and silicone adhesive used for PCB solder masking and other high-temperature applications. Amber, 2.6 mil thick. | 3M™ General Purpose Polyimide Film Tape 7413T with polyimide film and silicone adhesive is used for PCB solder masking, reflow and other high-temperature applications. Amber, 2.4 mil thick. | 3M™ Lined General Purpose Polyimide Tape 7413TL with polyimide film and silicone adhesive is used for PCB solder masking and other high-temperature applications. This is the lined version of 3M™ Tape 7413T. Amber, 2.4 mil thick. |
| Product Part Number | 5414 | 5419 | 5433 | 7412B | 7412P | 852RW | 7413T | 7413TL |
| Product Form | Roll | Roll | Roll | Roll | Roll | Roll | Roll | Roll |
| Typical Application | Solder Masking | Solder Masking | Solder Masking | Solder Masking and Insulating | Solder Masking | Solder Masking | Solder Masking | Solder Masking |
| Color | Hazy Transparent | Gold | Amber | Black | Amber | Amber | Amber | Amber |
| Adhesive | Water soluble synthetic | Silicone | Silicone | Acrylic | Acrylic | Silicone | Silicone | Silicone |
| Backing | Poly-Vinyl Alcohol film (PVA) | Polyimide | Polyimide | Polyimide | Polyimide | Polyimide | Polyimide | Polyimide |
| Primary Liner | Kraft Paper | None | Polyester (PET) | Polyester (PET) | None | None | Polyester (PET) | None |
| Standard Roll Size | 36 Linear Yards | 36 Linear Yards | 36 Linear Yards | 109 Linear Yards | 36 Linear Yards | 36 Linear Yards | 36 Linear Yards | 36 Linear Yards |
| Standard Roll Size (metric) | 33 Meters | 33 Meters | 33 Meters | 100 Meters | 33 Meters | 33 Meters | 33 Meters | 33 Meters |
| Temp Range (°Celsius) | -40°C to 240°C | -73°C to 260°C | -73°C to 260°C | -40°C to 155°C | -40°C to 155°C | -73°C to 260°C | -73°C to 260°C | -40°C to 155°C |
| Temp Range (°Fahrenheit) | -40°F to 464°F | -100°F to 500°F | -100°F to 500°F | -40°F to 311°F | -40°F to 311°F | -100°F to 500°F | -100°F to 500°F | -40°F to 311°F |
| Adhesion to Stainless (oz/in) | 4 oz/in | 20 oz/in | 20 oz/in | 45 oz/in | 30 oz/in | 25 oz/in | 20 oz/in | 6 oz/in |
| Adhesion to Stainless (metric) | 0.5 N/cm 0.11 kg/ 25.4 mm | 0.6 kg/25.4 mm 2.2 N/cm | 0.6 kg/25.4 mm 2.2 N/cm | 1.3 kg/25.4 mm 4.9 N/cm | 0.9 kg/25.4 mm 3.3 N/cm | 0.73 kg/25.4mm 2.8 N/cm | 0.06 kg/25.4mm 2.2 N/cm | 0.6 kg/25.4 mm 2.2 N/cm |
| Tensile Strength at Break | 6 lb/in | 33 lb/in | 33 lb/in | 38 lb/in | 25 lb/in | 25 lb/in | 30 lb/in | 30 lb/in |
| Tensile Strength at Break (metric) | 109 N/100 mm | 599 N/100 mm | 599 N/100 mm | 680 N/100 mm | 460 N/100 mm | 460 N/100 mm | 525 N/100 mm | 525 N/100 mm |
| Total Tape Thickness without Liner | 2.1 mil | 2.7 mil | 2.7 mil | 3.2 mil | 1.6 mil | 2.6 mil | 2.4 mil | 2.4 mil |
| Total Tape Thickness without Liner (metric) | 0.053 mm | 0.07 mm | 0.07 mm | 0.08 mm | 0.04 mm | 0.065 mm | 0.061 mm | 0.061 mm |
| Total Thickness | 2.1 mil | 2.7 mil | 2.7 mil | 3.2 mil | 1.6 mil | 2.6 mil | 2.4 mil | 2.4 mil |
| Total Thickness (metric) | 0.053 mm | 0.07 mm | 0.07 mm | 0.08 mm | 0.04 mm | 0.065 mm | 0.061 mm | 0.061 mm |



3M™ Non-Silicone, Acrylic High-Temperature Masking Tape 7414, Amber



3M™ High-Temperature Masking Tape 7414-5



3M™ High-Temperature Masking Tape 7414L-5



3M™ High-Temperature Masking Tape 7416A



3M™ Low-Static Polyimide Film Tape 7419, Amber



3M™ Lined Low-Static Polyimide Film Tape 7419L, Amber



3M™ High-Temperature Masking Tape 7437P

| | | | | | | | |
|--|--|---|---|---|---|--|--|
| Performance Features | Self-Lubricating Characteristics, Abrasion Resistant | Low adhesion, Less PSA residue | Low adhesion, Less PSA residue, Non-silicone liner, Abrasion resistant | Heat cross linkable PSA. High initial adhesion, Low build up | Chemical Resistant, No Adhesive Residue | Chemical Resistant, No Adhesive Residue, Lined | 3 µm PSA layer. Adhesion goes down by heat process. |
| Description | 3M™ Non-Silicone, Acrylic High-Temperature Tape 7414 is a single-coated tape with 0.025 mm polyimide film backing and acrylic adhesive for high-temperature applications. Amber. | 3M™ High-Temperature Masking Tape 7414-5 with polyimide film and acrylic adhesive is designed for masking or protecting surfaces exposed to high temperatures where easy, residue-free removals are required. This tape is specifically designed for use in the reflow soldering process. | 3M™ High-Temperature Masking Tape 7414-5 with polyimide film and acrylic adhesive is designed for masking or protecting surfaces exposed to high temperatures where easy, residue-free removals are required. This tape is specifically designed for use in the reflow soldering process. | 3M™ High-Temperature Masking Tape 7416A is heat-resistant polyimide process tape designed for use in the reflow soldering process. It has a heat-cross-linkable acrylic co-polymer PSA, which can prevent adhesion build-up in high temperatures. | 3M™ Low-Static, Non-Silicone Polyimide Film Tape 7419 with DuPont™ Kapton® polyimide film and acrylic adhesive is used for PCB solder masking and other high-temperature applications. Amber, 1.81 mil thick. | 3M™ Lined Low-Static, Non-Silicone Polyimide Film Tape 7419 with DuPont™ Kapton® polyimide film and acrylic adhesive used for PCB solder masking and other high-temperature applications. Amber, 1.81 mil thick. This is the lined version of 3M™ 7419 Tape. | 3M™ High-Temperature Tape 7437P is designed for masking of lead frames. This is a thinner PSA version of 7416Y that allows for less PSA residue. |
| Product Part Number | 7414 | 7414-5 | 7414L-5 | 7416A | 7419 | 7419L | 7437P |
| Product Form | Roll | Roll | Roll | Roll | Roll | Roll | Roll |
| Typical Application | Solder Masking | Solder Masking | Solder Masking | Solder Masking | Solder Masking | Solder Masking | Lead flame masking (WB & Mold) |
| Color | Amber | Amber | Amber | Amber | Amber | Amber | Amber |
| Adhesive | Acrylic | Acrylic | Acrylic | Acrylic | Acrylic | Acrylic | Acrylic |
| Backing | Polyimide | Polyimide | Polyimide | Polyimide | Polyimide | Polyimide | Polyimide |
| Primary Liner | None | None | Polyester (Non-Silicone PET) | Polyester (Silicone PET) | None | Polyester (PET) | Polyester (Silicone PET) |
| Standard Roll Size | 36 Linear Yards | 36 Linear Yards | 36 Linear Yards | 36 Linear Yards | 36 Linear Yards | 36 Linear Yards | 55 Linear Yards |
| Standard Roll Size (metric) | 33 Meters | 33 Meters | 33 Meters | 33 Meters | 33 Meters | 33 Meters | 50 Meters |
| Temp Range (°Celsius) | -40°C to 260°C | -40°C to 260°C | -40°C to 260°C | -40°C to 260°C | -40°C to 260°C | -40°C to 260°C | -40°C to 260°C |
| Temp Range (°Fahrenheit) | -40°F to 500°F | -40°F to 500°F | -40°F to 500°F | -40°F to 500°F | -40°F to 500°F | -40°F to 500°F | -40°F to 500°F |
| Adhesion to Stainless (oz/in) | 6 oz/in | 3 oz/in | 3 oz/in | 8 oz/in | 4 oz/in | 4 oz/in | 2 oz/in |
| Adhesion to Stainless (metric) | 0.18 kg/25.4 mm 0.69N/cm | 0.08 kg/25.4 mm 0.3 N/cm | 0.08 kg/25.4 mm 0.3 N/cm | 0.23 kg/25.4 mm 0.9 N/cm | 0.11 kg/25.4 mm 0.5 N/cm | 0.11 kg/25.4 mm 0.5 N/cm | 0.06 kg/25.4 mm 0.24 N/cm |
| Tensile Strength at Break | 130 N/1 in | 130 N/1 in | 130 N/1 in | 130 N/1 in | 33 lb/in | 33 lb/in | 130 N/1 in |
| Tensile Strength at Break (metric) | 51 N/100 mm | 51 N/100 mm | 51 N/100 mm | 51 N/100 mm | 599 N/100 mm | 599 N/100 mm | 51 N/100 mm |
| Total Tape Thickness without Liner | 1.85 mil | 1.18 mil | 1.18 mil | 1.65 mil | 1.81 mil | 1.81 mil | 1.10 mil |
| Total Tape Thickness without Liner (metric) | 0.047 mm | 0.03 mm | 0.03 mm | 0.042 mm | 0.046 mm | 0.046 mm | 0.028 mm |
| Total Thickness | 1.85 mil | 1.18 mil | 1.18 mil | 1.65 mil | 1.81 mil | 1.81 mil | 2.6 mil |
| Total Thickness (metric) | 0.047 mm | 0.03 mm | 0.080 mm | 0.080 mm | 0.046 mm | 0.046 mm | 0.066 mm |

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Electronics Materials Solutions Division

3M Center, Building 224-3N-11
St. Paul, MN 55144-1000
Phone: 1-800-251-8634
Fax: 651-778-4244
Web: www.3M.com/electronics

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