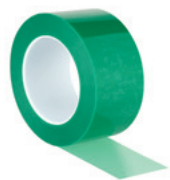
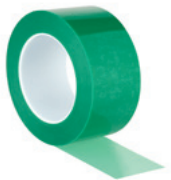


3M™ High-Temperature Tapes

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



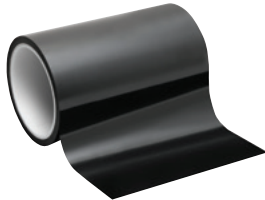
3M™ Water-Soluble Wave Solder Tape 5414, Transparent



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-resistive 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

Regulatory: For regulatory information about this product, contact your 3M representative.

Technical Information: The technical information, recommendations and other statements contained in this document are based upon tests or experience that 3M believes are reliable, but the accuracy or completeness of such information is not guaranteed.

Product Use: Many factors beyond 3M's control and uniquely within user's control can affect the use and performance of a 3M product in a particular application. Given the variety of factors that can affect the use and performance of a 3M product, user is solely responsible for evaluating the 3M product and determining whether it is fit for a particular purpose and suitable for user's method of application.

Warranty, Limited Remedy, and Disclaimer: Unless an additional warranty is specifically stated on the applicable 3M product packaging or product literature, 3M warrants that each 3M product meets the applicable 3M product specification at the time 3M ships the product. 3M MAKES NO OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY IMPLIED WARRANTY OR CONDITION ARISING OUT OF A COURSE OF DEALING, CUSTOM OR USAGE OR TRADE. If the 3M product does not conform to this warranty, then the sole and exclusive remedy is, at 3M's option, replacement of the 3M product or refund of the purchase price.

Limitation of Liability: Except where prohibited by law, 3M will not be liable for any loss or damage arising from the 3M product, whether direct, indirect, special, incidental or consequential, regardless of the legal theory asserted, including warranty, contract, negligence or strict liability.



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

3M is a trademark of 3M Company.
All other trademarks are property
of their respective owners.
© 3M 2019 All rights reserved.
60-5005-0092-5 Rev. B