

Live life untethered.

Smartwatches are our constant companions. They manage our media, track our vitals and keep us connected all day long. Walking, running, even swimming – smartwatches go wherever we go. They must balance functionality, durability and comfort, from the battery to the wristband and everything in between.

3M offers high-strength tapes to help manufacturers stabilize smartwatch components, chemical resistant adhesives to help bond metal to glass while helping seal out water, sweat, sunscreen and skin oils, and liquid adhesives to combine optimal viscosity, bonding strength and low-temperature curing to help manufacturers facilitate electronic assembly. 3M also offers EMI/EMC management solutions to shield and ground a wide variety of frequencies and sources to help keep the electronics performing at their full potential.

Smartwatch applications:

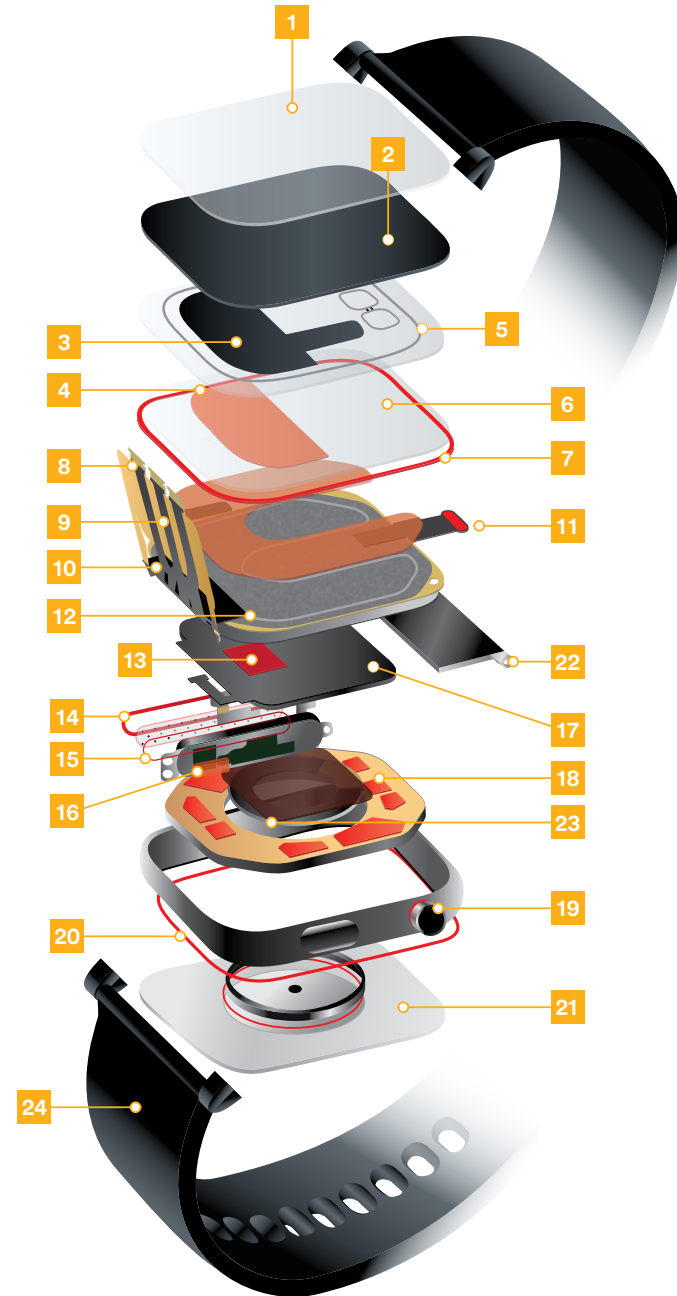
Guard sensitive components against impact, water, chemicals and more.

- **Lens bonding** solutions provide excellent chemical resistance
- **FPC bonding** tapes join hard-to-bond surfaces while offering good heat resistance
- **Battery bonding** solutions help absorb shock and vibration
- Conductive tapes provide low and stable electrical resistance over time for shielding and grounding
- Bonding solutions for **smartwatch dials** combine optimal viscosity, high bonding strength and low-temperature curing

Smartwatch Applications

No.	Application description	No.	Application description	No.	Application description
1	Bubble free tape	9	FPC bonding	17	FPC soldering pad shielding
2	Graphite bonding	10	FPC grounding	18	Foam bonding
3	FPC bonding	11	FPC noise absorbing	19	Knob bonding
4	Display FPC grounding	12	SiP/MLB shielding	20	Back cover bonding
5	Display COF shielding	13	Battery bonding	21	Sensor lens bonding
6	Display FPC bonding	14	Speaker bonding	22	Linear motor grounding
7	Front lens bonding	15	Mesh bonding	23	SiP PCB grounding
8	FPC stiffener grounding	16	Magnet bonding	24	Wristband bonding

Smartwatch Device Featured Products



3M™ Electronics Bonding and EMI Management Solutions for Smartwatch Device Manufacturing and Assembly

	Number	Application	Featured Products	Product Type	Color	Thickness (µm)	Features
Smartwatch	1	Bubble free tape	9077	Double Coated Tissue Tape	Clear	50	<ul style="list-style-type: none"> ● 260°C short-term heat resistance ● Releasable after lead-free solder reflow ● High adhesion and holding power
	2	Graphite bonding	UCT-xx	Double Coated PET Tape	Clear	10/20/30/50	<ul style="list-style-type: none"> ● Ultra clear ● High initial adhesion ● Produced in a clean room, easily converted
	3	FPC bonding	930xxLE	Double Coated PET Tape	Clear	50/100/150/200	<ul style="list-style-type: none"> ● Bonding to low surface energy substrates ● Adhesion to oily surface ● Dimensional stability, ease of die cutting ● Good resistance to industrial and consumer chemicals
	4	Display FPC grounding	9701H	Double Sided Non-woven Conductive Tape	Grey	50/100	<ul style="list-style-type: none"> ● XYZ-conductivity ● Good electrical contact to small area ● Nickel/copper-coated conductive non-woven fabric carrier
	5	Display COF shielding	1050TC	Single Sided Copper Foil Tape	Copper	15/18/20/25	<ul style="list-style-type: none"> ● XYZ-conductivity ● Conformable, quick bonding ● Copper foil backing
			1080TC	Single Sided Copper Foil Tape	Copper	20	<ul style="list-style-type: none"> ● XYZ-conductivity ● Conformable, quick bonding ● Copper foil backing
	6	Display FPC bonding	9077	Double Coated Tissue Tape	Clear	50	<ul style="list-style-type: none"> ● 260°C short-term heat resistance ● Releasable after lead-free solder reflow ● High adhesion and holding power
7	Front lens bonding	961xxCR	Adhesive Transfer Tape	Clear	25/50	<ul style="list-style-type: none"> ● Chemical resistance ● Produced in a clean room 	
		6101OW, 6102B	1K Epoxy	Off-white, Black	-	<ul style="list-style-type: none"> ● Excellent impact resistance ● Low temperature cure ● Flexible and toughened ● Plastic bonding 	

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3M™ Electronics Bonding and EMI Management Solutions for Smartwatch Device Manufacturing and Assembly

	Number	Application	Featured Products	Product Type	Color	Thickness (µm)	Features
Smartwatch	8	FPC stiffener grounding	MSG7000S	Conductive Gasket	Grey	300/650/1000/1500/2000/2500	<ul style="list-style-type: none"> • High compression for wide range gap filling • Excellent contact resistance and reliable adhesion • Low resistance even at a slight compression rate
			9711S	Double Sided Conductive Fabric Tape	Grey	30/50/80/100/120/130/150/170/200/210/220/250/300	<ul style="list-style-type: none"> • XYZ-conductivity • Excellent conformability, quick bonding • Nickel/copper-coated conductive fabric and conductive PSA
			5113DFT	Double Sided Conductive Fabric Tape	Metallic	50	<ul style="list-style-type: none"> • XYZ-axis conductivity through adhesive • Excellent electrical contact to small size areas • Resists moisture to help maintain the product's integrity enabling a 4-year shelf-life
	9	FPC bonding	467MP, 468MP	Adhesive Transfer Tape	Clear	60, 130	<ul style="list-style-type: none"> • Up to 204°C short-term heat resistance • Solvent resistance • High shear strength
	10	FPC grounding	9711S	Double Sided Conductive Fabric Tape	Grey	30/50/80/100/120/130/150/170/200/210/220/250/300	<ul style="list-style-type: none"> • XYZ-conductivity • Excellent conformability, quick bonding • Nickel/copper-coated conductive fabric and conductive PSA
			5113DFT	Double Sided Conductive Fabric Tape	Metallic	50	<ul style="list-style-type: none"> • XYZ-axis conductivity through adhesive • Excellent electrical contact to small size areas • Resists moisture to help maintain the product's integrity enabling a 4-year shelf-life
	11	FPC noise absorbing	EM25TP	Absorber	Black	25/35/50/150/200/250	<ul style="list-style-type: none"> • Targeted permeability for <5-10MHz FFDM performance • Excellent absorbing performance from 100MHz to 4 GHz • Black PET top film layer and PSA are optional
	12	SiP/MLB shielding	1050TC	Single Sided Copper Foil Tape	Copper	15/18/20/25	<ul style="list-style-type: none"> • XYZ-conductivity • Conformable, quick bonding • Copper foil backing
			1080TC	Single Sided Copper Foil Tape	Copper	20	<ul style="list-style-type: none"> • XYZ-conductivity • Conformable, quick bonding • Copper foil backing

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3M™ Electronics Bonding and EMI Management Solutions for Smartwatch Device Manufacturing and Assembly

	Number	Application	Featured Products	Product Type	Color	Thickness (µm)	Features
Smartwatch	13	Battery bonding	3M™ VHB™ 864xx	Acrylic Foam Tape	Black	150/200/250/300	<ul style="list-style-type: none"> • High bonding strength • Impact resistance • Conformable
			930xxLE	Double Coated PET Tape	Clear	50/100/150/200	<ul style="list-style-type: none"> • Bonding to low surface energy substrates • Adhesion to oily surface • Dimensional stability, ease of die cutting • Good resistance to industrial and consumer chemicals
	14	Speaker bonding	3M™ VHB™ 864xx	Acrylic Foam Tape	Black	150/200/250/300	<ul style="list-style-type: none"> • High bonding strength • Impact resistance • Conformable
	15	Mesh bonding	9628B, 9629B	Double Coated PET Tape	Black	50, 100	<ul style="list-style-type: none"> • Excellent adhesion to difficult to bond surfaces • Easily converted
	16	Magnet bonding	F9460PC, F9469PC, F9473PC	Adhesive Transfer Tape	Clear	60, 130, 250	<ul style="list-style-type: none"> • Up to 204°C short-term heat resistance • Up to 149°C operating temperature resistance • Solvent resistance
	17	FPC soldering pad shielding	1012NC	Single Sided Copper Foil Tape	Top side: Black Back side: Copper	25	<ul style="list-style-type: none"> • XY-Axis conductive • Non-Conductive Black Copper foil and next generation CPSA • High EMI Shielding
			5133BZ-S	Single Sided Copper Foil Tape	Matte Black	50	<ul style="list-style-type: none"> • XY-Axis conductive • Excellent conformability and edge conformance with very thin foil backing • Excellent EMI/ESD performance and electrical performance over time
	18	Foam bonding	UCT-xx	Single Sided Copper Foil Tape	Clear	10/20/30/50	<ul style="list-style-type: none"> • Ultra clear • High initial adhesion • Produced in a clean room, easily converted

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3M™ Electronics Bonding and EMI Management Solutions for Smartwatch Device Manufacturing and Assembly

	Number	Application	Featured Products	Product Type	Color	Thickness (µm)	Features
Smartwatch	19	Knob bonding	6101OW, 6102B	1K Epoxy	Off-white, Black	-	<ul style="list-style-type: none"> • Excellent impact resistance • Low temperature cure • Flexible and toughened • Plastic bonding
			6100LV	1K Epoxy	Off-white, Black	-	<ul style="list-style-type: none"> • Low viscosity for wicking into small spaces • Low temperature cure • Flexible, water resistant, jettable
	20	Back cover bonding	961xxCR	Adhesive Transfer Tape	Clear	25/50	<ul style="list-style-type: none"> • Chemical resistance • Produced in a clean room
	21	Sensor lens bonding	AF-42	Thermal Bonding Film	Translucent	80	<ul style="list-style-type: none"> • Tough, high peel strength • No tack, low flow • Cure at 177°C
	22	Linear motor grounding	MSG7000S	Conductive Gasket	Grey	300/650/1000/1500/2000/2500	<ul style="list-style-type: none"> • High compression for wide range gap filling • Excellent contact resistance and reliable adhesion • Low resistance even at a slight compression rate
	23	SiP PCB grounding	MSG7000S	Conductive Gasket	Grey	300/650/1000/1500/2000/2500	<ul style="list-style-type: none"> • High compression for wide range gap filling • Excellent contact resistance and reliable adhesion • Low resistance even at a slight compression rate
	24	Wristband bonding	961xxCR	Adhesive Transfer Tape	Clear	25/50	<ul style="list-style-type: none"> • Chemical resistance • Produced in a clean room
6101 OW			1K Epoxy	Off-white	-	<ul style="list-style-type: none"> • Excellent impact resistance • Low temperature cure • Flexible and toughened • Plastic bonding 	

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