3M Anisotropic Conductive Film (ACF)
Interconnect Solutions



Get Connected

3M

Get Connected with 3M™ Anisotropic Conductive Film (ACF)

3M offers you a variety of high-performance anisotropic conductive adhesive products, used to mechanically and electrically connect flex circuits to a variety of substrates.

These reliable, production-proven technologies can replace soldering and mechanical fasteners in many applications, reducing assembly time and saving on space requirements.

Get the job done faster, easier and more economically with 3M™ Anisotropic Conductive Film (ACF) Interconnect Solutions

- Products for a variety of applications
  – Flex circuit to PCB – Flex circuit to flex circuit – Flex circuit to glass panels
- Good room temperature stability for long life on the factory floor
- Low temperature processing for lead free solutions
- Replaces connectors for cost savings, lower Z-axis standoff

Choose the 3M ACF Adhesive That's Right for Your Application

	Flex-On-Board			Flex-On-Glas
	3M ACF 5363	3M ACF 7303	3M ACF 7378	3M ACF 5552
Adhesive Thickness (micron)	40	75	40	19
Particle Diameter (micron)	10	43	10	6
Type of Particle	Au/Ni	Ag/Glass	Au/Ni	Au/Ni/Polymer
Bonding Temperature (°C)	195 to 210	135 to 150	160 to 180	170 to 190
Bonding Time (seconds)	10 to 20	25	5 to 9	20 to 30
Bonding Pressure (MPa)	3 to 5	2	3 to 4	2 to 4
Minimum Pitch (micron)	200	500	200	<100
Minimum Pad Area (mm^2)	0.15	0.75	0.2	0.015
Connection Resistance	<100 mOhms	<200 mOhms	<100 mOhms	<20 Ohms
90° Peel Adhesion (g/cm)	>700	>500	>1000	>800
Temp/Humidity Aging (°C/%r.h.)	85/85	70/90	85/85	85/85
Temp Cycling (°C)	-40 to 100	-40 to 80	-40 to 85	-40 to 100
Flex Type				
Silver Ink on Polyester		X		
Gold/Copper on Polyester		X	X	
Gold/Copper on Polyimide	X	X	X	X
Connection Type				
Flex to Glass		X[1]		X
Flex to Plastic Device		X[2]		
Flex to PC Board	X	X	X	
Flex to Flex	X	X	X	X

[1]Tested only for silver frit; not suitable for ITO traces. [2]Suitable for silver ink traces only; not suitable for ITO traces.



Adhesive Technologies

3M™ Anisotropic Conductive Film (ACF) Adhesives

Heat-bondable 3M™ ACF films, consisting of thermoplastic and thermoset adhesives randomly loaded with conductive particles. These particles allow interconnection of circuit lines through the adhesive thickness, but are spaced far enough apart for the product to be electrically insulating along the plane of the adhesive.

ss	Flex-On-PET/Glass	Flex-On-PET	Camera Module	Camera Module Flex-On-PET
R	3M ACF 7371	3M ACF 7393	3M ACF 7376-10	3M ACF 7376-20
	25	25	40	35
	10	10	10	20
	Au/Ni/Polymer	Au/Ni/Polymer	Au/Ni/Polymer	Au/Ni/Polymer
	140 to 170	150 to 170	140 to 160	140 to 160
	10 to 15	10 to 20	7 to 15	7 to 15
	1 to 2	1 to 2	1 to 2	1 to 2
	200	200	200	500
	0.2	0.2	0.2	0.5
	<100 mOhms	<100 mOhms	<100 mOhms	<100 mOhms
	>700	>700	>700	>700
	85/85	70/90	85/85	85/85
	-40 to 85	-20 to 60	-40 to 85	-40 to 85
	X	X	X	X
	X	X	X	X
	X	X	X	X
	X	X		
	X	X		X
			X	X
	X	X	X	X

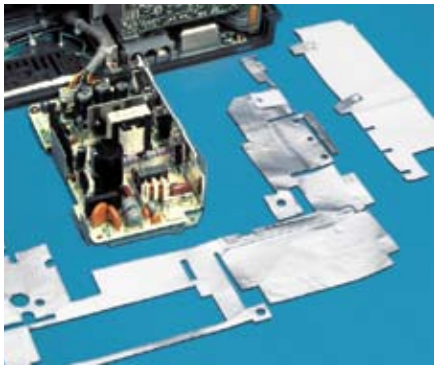


3M™ Electrically Conductive Adhesive Transfer Tape (ECATT)



An easy-to-use, pressure sensitive tape designed for connecting, bonding and grounding flex circuits, PCBs and EMI/RFI shields and gaskets. Applied at room temperature – no thermal bonding required! Not recommended for extreme high or low temperatures.

	3M ECATT 9703	3M ECATT 9705
Adhesive Thickness (micron)	50	50
Type of Particle	Ag/Ni	Ag/Ni
Pitch (micron)	800	800
Application Notes	Good adhesion; reworkable. For connecting/bonding/grounding flex circuits, printed circuits boards, EMI/RFI shields & gaskets, PSA attachments at room temp. Not recommended for extreme high/low temps.	



Contact 3M

3M provides applications development support. For more information, contact 3M at 800-251-8634. Or visit us on the web: www.3M.com/electronics.

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Issued: 5/09 © 3M 2009.
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60-5002-0057-5

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