



Flexible Interconnects for Medical Devices



Innovative new processes and material combinations developed at 3M enable advanced rigid and flexible interconnect solutions for advanced medical devices. Let 3M work with you to create custom engineered solutions for your medical device needs.

Cardiac rhythm management

- High density rigid, flexible, and rigidized flexible substrates
- High via integrity
- More functionality into a smaller space
- Rigid substrates between 3 and 9 layers
- Flexible circuit construction enables foldability

CT Scanners

- High density circuits enable advanced imaging
- High dimensional accuracy and smaller circuit patterns
- Precision electrical structures

Hearing aids

- Flexible circuitry folds to reduce space requirements and eliminate the need for some connectors

Ultrasound probes

- Thin copper features down to 4 μm
- Custom 3-D features
- Very tight registration between vias and pad

X-ray

- High density flexible circuits provide interconnect for high resolution
- Adhesiveless construction provides outstanding dimensional stability

Capabilities

- Precision photolithography – 50 µm pitch, traces
- Vacuum deposition of noble metal
- Laser ablation
- Wide web processing
- High volume production capability
- Secure/ reliable supply chain
- (High) quality control systems and parts traceability
- Scalable for high volume production

Material options

- **Construction:** Rigid, flexible and rigidized flexible substrates with multiple conductor layers
- **Polymers and cover film:** Polyimide, liquid crystal polymer (LCP), epoxy, Gore™ G 410
- **Electrode construction:** Gold, nickel-gold, tin, copper
- Adhesiveless construction
- Lamination and adhesive options

Benefits of 3M custom interconnects

- Reliability
- Precision
- Miniaturization
- Increased integration
- Flexible and foldable

Dielectric Substrate

Material	Polyimide
Thickness	25 – 60 µm

Conductors

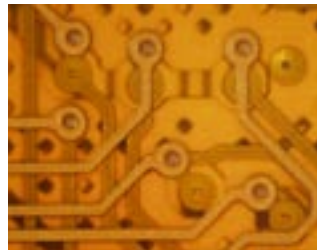
Lead Width (min.)	25 µm
Space (min.)	25 µm
Copper Thickness	2 – 37 µm

Covercoat/Soldermask

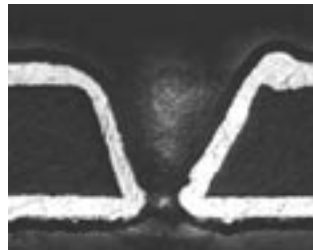
Material	Photoimageable
Registration	± 50 µm
Opening (min.)	50 µm
Feature (min.)	100 µm
Deliverable Formats	Tape on reel, strips, or sheets



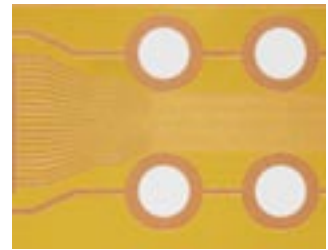
High density, high speed IC package



Multilayer construction



High density and high reliability vias



High density line and space conductors

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