Micromax™ QR150

Microcircuit and Component Materials

Gold Conductor

Micromax™ QR150 is a very high density gold conductor composition developed for fine feature screen printing and ultra fine line etching. For applications requiring high frequency or very fine conductor features, Micromax™ QR150 offers thin film performance at much lower cost.

Product benefits

- Extremely high conductivity
- Very dense fired film
- Fine line printing capability
- Excellent edge acuity when etched
- Phthalate free*

*Phthalate 'free' as used herein means that phthalate is not an intentional ingredient in and is not intentionally added to the referenced product. Trace amounts however may be present.

Product information

Solvent or thinner	Micromax™ 9450

Rheological properties

Viscosity	300 - 400[1]	Pa.s

[1]: Brookfield 2xHAT, SC4-14/6R, 10rpm, 25°C

Application technique

Mask mesh	400	
Drying time	15	min
Drying temperature	150	°C
Theoretical coverage	70 - 90[2]	cm^2/g
Recommended film thickness, fired	5	µm
Print resolution, lines	75[3]	µm
Print resolution, spaces	75[3]	µm
Leveling time	10 - 15	min

[2]: based on fired thickness 3.5-5 µm

[3]: Line Resolution Etched

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Electrical properties

Surface resistivity	≤5[4]	mOhm per square

[4]: @10 µm fired

Storage and stability

Shelf life	6[5]	months

[5]: in unopened containers, from date of shipment, at room temperature (<25°C)

Additional information

How to use

Processing

- Substrates
  - Micromax™ QR150 has been successfully used on a variety of substrates including 96%, 99%, 99.6% polished alumina and thick film dielectrics including Micromax™ QM44. The properties described in this data sheet are based on test using 96% alumina substrates. Substrates of other compositions and from various manufacturers may result in variations in performance properties.
- Printing
  - A 400-mesh stainless steel screen. Printing speeds up to 15 cm/s (6in/s) can be used.
- Drying
  - Allow wet prints to level at room temperature, then dried.
- Firing
  - Dried Micromax™ QR150 should be fired in a belt furnace. Use a 30 minute cycle with 850°C peak for 10 minutes.
- Etching
  - Micromax™ QR150 may be etched in typical thin film process. Micromax™ QR150 may also be etched to achieve 3.5-5 µm fired thickness with 2 prints, 15-20% by weight of Micromax™ 9450 is required.

Properties

Typical Physical Properties

Test	Properties
Line Resolution Screen Print (µm) [lines/spaces] Etched (µm) [lines/spaces]	75/75
Gold Wire Bonding*[1] (g)	>7

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*1 with 25 µm (1 mil) wire on 96% alumina and 99.6% alumina polished

Information in this datasheet shows anticipated typical physical properties for Micromax™ QR150 based on specific controlled experiments in our labs and are not intended to represent the product specifications, details of which are available upon request.

Storage and shelf life

Containers should be stored, tightly sealed, in a clean, stable environment at room temperature (<25°C). Shelf life of material in unopened containers is six months from date of shipment. Some settling of solids may occur and compositions should be thoroughly mixed prior use.

Safety and handling

For safety and handling information pertaining to this product, read Safety Data Sheet (SDS).

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