

# Micromax™ QS482

## Electronic Inks and Pastes

### Crossover Dielectric

Micromax™ QS482 crossover dielectric is a screen printed, air fired dielectric material used as an insulating layer to prevent shorting between two crossing conductor lines.

### Product information

|                    |                |
|--------------------|----------------|
| Colour             | Blue           |
| Solvent or thinner | Micromax™ 9450 |

### Rheological properties

|           |                               |
|-----------|-------------------------------|
| Viscosity | 200 - 300 <sup>[1]</sup> Pa.s |
|-----------|-------------------------------|

[1]: Brookfield 2xHAT, UC&S, #14, 10 rpm, 25°C

### Application technique

|                                   |                                           |
|-----------------------------------|-------------------------------------------|
| Mask mesh                         | 200 - 325                                 |
| Drying time                       | 10 - 15 min                               |
| Drying temperature                | 150 °C                                    |
| Theoretical coverage              | 70 - 75 <sup>[2]</sup> cm <sup>2</sup> /g |
| Recommended film thickness, fired | 40 <sup>[3]</sup> µm                      |
| Leveling time                     | 5 - 10 min                                |

[2]: Based on 30µm fired thickness using 2 points with a 325 mesh stainless steel screen. In the case of based on 40µm fired thickness using 2 points with a 200 mesh stainless steel screen, 55-60cm<sup>2</sup>/g.

[3]: 2 fired layers, 200 or 325 mesh screen, between metal layers

### Electrical properties

|                             |                          |
|-----------------------------|--------------------------|
| Dielectric Constant         | 9 - 14                   |
| Dissipation Factor          | ≤0.5 %                   |
| Insulation Resistance, DC   | ≥1E12 <sup>[4]</sup> Ohm |
| Insulation Resistance, HBT  | ≥1E11 <sup>[5]</sup> Ohm |
| Insulation Resistance, HHBT | ≥1E11 <sup>[6]</sup> Ohm |
| Surface Leakage Current     | ≤10 µA/cm <sup>2</sup>   |
| Breakdown Voltage           | ≥800 <sup>[7]</sup> V    |

[4]: Measured at 100 VDC

[5]: HBT 150°C/200 VDC/1000 hr.

[6]: HHBT 85°C/85%RH/5VDC/1000 hr.

[7]: VDC at 25µm

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### Storage and stability

Shelf life

6<sup>[8]</sup> months

[8]: in unopened containers, from date of shipment, at temperature <25 °C

### Additional information

How to use

### Processing

- **Substrates**
  - Properties are based on tests on 96% alumina substrates. Substrates of other compositions and from various manufacturers may result in variations in performance properties.
- **Printing**
  - Print two dielectric layers with a 200 or 325 mesh stainless steel screen. The combined thickness of the fired dielectric should be at least 30µm (1.2mil). Printing speeds up to 25 cm/s (10 in/s) can be used for crossover areas as large as 25 cm<sup>2</sup>.
- **Drying**
  - Allow prints to level for 5-10 minutes at room temperature. Dry 10-15 minutes at 150 °C in air.
- **Firing**
  - Each dielectric print should be fired in a belt furnace. Use a 30 minute cycle with a peak temperature of 850 °C for 10 minutes.

### Properties

- Information in this datasheet shows anticipated typical physical properties for Micromax™ QS482 based on specific controlled experiments in our labs and are not intended to represent the product specifications, details of which are available upon request.

### Other system components

- Micromax™ 5081R silver/platinum conductor
- Micromax™ QS175 silver conductor
- Micromax™ QS87 series resistors

### 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 to use.

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## Safety and handling

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

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