Micromax™ 0F39A

Electronic Inks and Pastes

Lead Free Resistor Composition

Designed to give an ideal balance of properties, Micromax™ 0FXXA series has been specifically developed for Chip Resistor Applications. It meets the market needs for smaller sized resistors and greener products.

Product benefits

- Lead free* and Cadmium free*
- Excellent performance for smaller chip sizes with thinner printed thickness
- Good power handling stability
- Excellent ESD stability
- High speed laser trimmable
- Narrow TCR gap

*Lead and cadmium 'free' as used herein means that these are not intentionally added to the referenced products. Trace amounts, however, may be present.

Product information

Solvent or thinner	Micromax™ 8250
Blend member or series	0FXXAsrs[1]

[1]: Blending Group Higher-ohm

Rheological properties

Viscosity	150 - 240[2]	Pa.s

[2]: Brookfield HAT, SC4-14/6R, @10 rpm

Application technique

Mask mesh	250 - 325	
Mask emulsion	5 - 25	µm
Drying time	10 - 15	min
Drying temperature	150	°C
Recommended film thickness, dried	11 - 13	µm
Leveling time	5 - 10	min

Electrical properties

Surface resistivity	1.05E6 - 1.75E6[3]	mOhm per square
Hot Temperature Coefficient Resistance	-100 - 100[4]	ppm/K
Cold Temperature Coefficient Resistance	-100 - 100[5]	ppm/K

[3]: Shipping specifications : Resistors are printed with dried thickness 11-13µm. Printed on Micromax™ 5421E termination (12-14µm dried thickness). Fired in Micromax™ standard QA firing profile with 850°C peak for 10 minutes. Resistor geometry is 0.5mm x 0.5mm except Micromax™ 0F01A (8sq).

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[4]: Temperature Coefficient of Resistance from +25 to +125°C for Hot TCR.

[5]: Temperature Coefficient of Resistance from -55 to +25°C for Cold TCR.

Storage and stability

Shelf life	6[6] months

[6]: in unopened containers, from date of shipment, at temperature 5-30°C

Additional information

How to use

Processing

- Terminations
  - Micromax™ 0FXXA resistors were designed for use with high silver-containing terminations like Micromax™ 5421E Ag/Pd conductor. Reported properties were obtained using Micromax™ 5421E Ag/Pd termination. Use of different terminations may cause a shift of resistance and TCR values.
- Blendability
  - Adjacent members of each blending group are blendable. It is also blendable with Micromax™ 00LXX lead free lower ohm resistor members in good linearity.
- Substrates
  - Reported properties are based on tests with 96% alumina substrates. Substrates of other composition may yield variation in performance properties.
- Printing
  - Properties of Micromax™ 0FXXA series are based on resistors printed to 11-13µm dried thickness. 250~325 mesh screen with 5-25µm emulsion is recommended.
- Thinning
  - Micromax™ 0FXXA resistors have been optimized for screen printing and thinning is not normally required or recommended. Micromax™ 8250 thinner may be added sparingly to compensate for evaporative losses.
- Drying
  - Parts should be allowed to level at room temperature for 5-10 minutes and then dried for 10-15 minutes at 150°C.
- Firing
  - Properties are based on a 30-minute firing cycle (100°C - 100°C) with 10 minutes at a peak temperature of 850°C standard profile.

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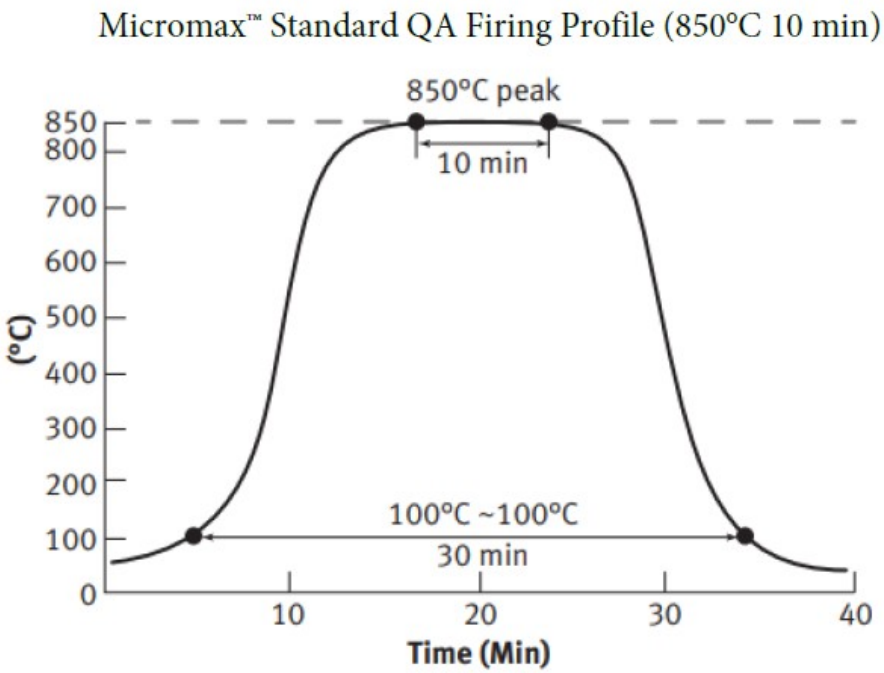

Storage and shelf life

Containers should be stored, tightly sealed, in a clean, stable environment at room temperature between 5°C - 30°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.

Safety and handling

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