

Micromax™ 00L3L

Electronic Inks & Pastes

PRODUCT DESCRIPTION

00LXL Series Resistor Composition 20mΩ/SQ. Resistors

Designed to give high productivity and high quality, Micromax™ 00LXL low ohm resistor series has been specifically developed for Chip Resistor Applications. It meets the market needs for low cost of manufacturing.

Product benefits

- Balanced cost vs. TCR performance
- Tight distribution of resistances
- High productivity and manufacturing yields
- Cadmium, Nickel and Phthalate free*

*Cadmium, Nickel and Phthalate 'free' as used herein means that cadmium, nickel and phthalate are not intentional ingredients in and are not intentionally added to the referenced product. Trace amount however may be present.

Processing features

- Excellent printability
- Insensitive to firing profile / chip size
- Linear blend behavior
- Compatible with Micromax™ 5426, 5421E, 5418 Ag/Pd terminations and 5463 Ag termination.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

PRODUCT INFORMATION

Application	Chip resistor
Solvent or thinner	Micromax™ 8250(T)
Blend member or series	00LXLsrs

TECHNICAL DATA

Rheological Properties	Value	Unit
Viscosity ¹	120 to 240	Pa.s
Application Technique	Value	Unit
Drying time	5 to 10	min
Drying temperature	150	°C
Leveling time	5 to 10	min
Electrical Properties	Value	Unit
Resistivity ²	15 to 25	mOhm per square
Hot Temperature Coefficient Resistance ³	≤600	ppm/°C
Cold Temperature Coefficient Resistance ⁴	≤600	ppm/°C
Storage and Stability	Value	Unit
Shelf life ⁵	6	months

¹Brookfield HAT, UC&S; , @10rpm

²Unless otherwise noted, Micromax™ 00LXL resistors were printed on Micromax™ 5426 terminations at 18–22μm dried thickness, then fired in 30 minutes cycle with 850°C peak for 10 minutes. Resistor geometry is 500sq.

³Temperature Coefficient of Resistance from +25 to +125°C for Hot TCR.

⁴Temperature Coefficient of Resistance from +25 to -55°C for Cold TCR.

⁵in unopened containers, from date of shipment, stable environment at room temperature between 5°C - 30°C

PROCESSING GUIDELINES
Terminations

Micromax™ 00LXL resistors were designed for use with high silver-containing terminations like Micromax™ 5421E Ag/Pd conductor. Reported properties were obtained using Micromax™ 5426 Ag/Pd termination. Use of different terminations may cause a shift of resistance and TCR values.

Blendability

Adjacent members among Micromax™ 00LXL series are totally blendable. As blend members of Micromax™ 00LXL series, 0001L(1Ω/sq.) is blendable with Micromax™ 00L1L.

Substrates

Reported properties are based on tests with 96% alumina substrates. Substrates of other composition may yield variation in performance properties.

Printing

The composition should be thoroughly mixed before use. This is best achieved by slow, gently, hand stirring with a clean burr-free spatula (flexible plastic or stainless steel) for 1-2 minutes. Care must be taken to avoid air entrapment. Printing should be performed in a clean and well ventilated area.

Note: optimum printing characteristics are generally achieved in the room temperature range of 20°C - 23°C. It is therefore important that the material, in its container, is at this temperature prior to commencement of printing.

Thinning

Micromax™ 00LXL 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.

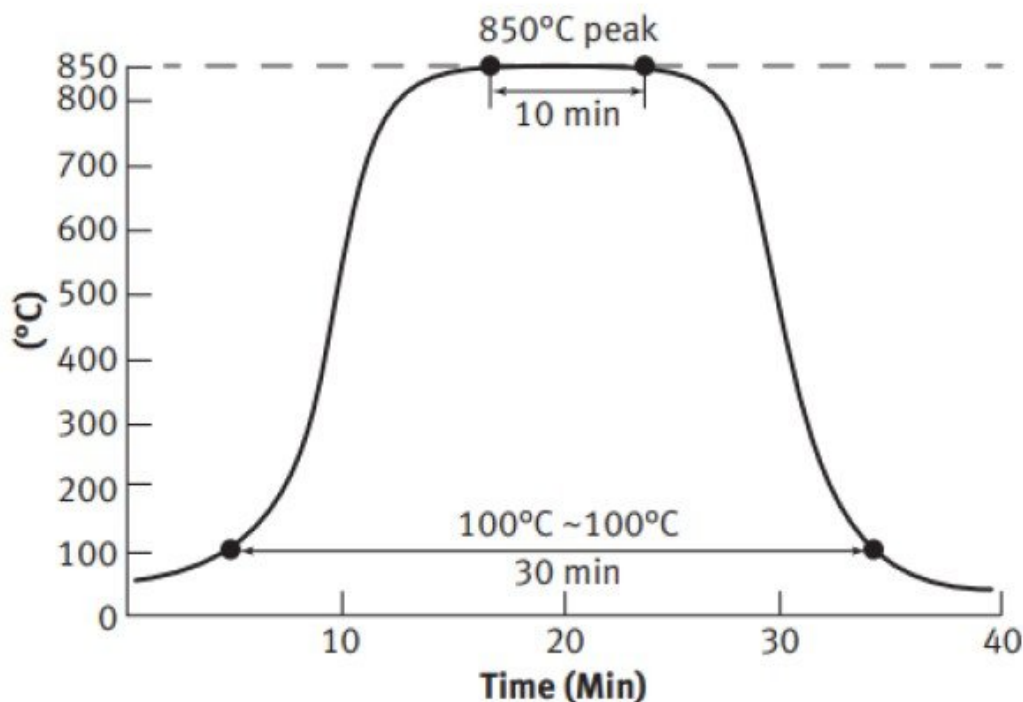
Drying

Parts should be allowed to level at room temperature and then dried.

Firing

Properties are based on a 30 minutes firing cycle (100°C - 100°C) with 10 minutes at a peak temperature of 850 °C Micromax™ standard profile.

Micromax™ Standard QA Firing Profile (850°C 10 min)



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 6 months from date of shipment. Some settling of solids may occur and compositions should be thoroughly mixed prior to use.

Storage conditions on the product data sheets are intended to represent long-term material storage recommendations and not a shipping or temperature-at-receipt requirement.

Transportation: Under normal shipping conditions, without temperature control, Micromax™ products are not expected to exhibit a change in quality or fitness for use. Should extraordinary events result in extended transportation periods, Micromax™ recommends customers confirm products remain suitable for the intended application.

Safety and handling

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

SAFETY & WARNING

It is recommended that the company/operator read and review the Safety Data Sheets for the appropriate health and safety warnings before use.

Safety Data Sheets are available.

WASTE TREATMENT

Prior to using any recommendations or suggestions for waste treatment, the user is required to know the appropriate local/state/federal regulations for on-site or off-site treatment which may require permits. If there is any conflict regarding our recommendations, local/state/federal regulations take precedence.

CONTACT INFORMATION

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Also read carefully warning and safety information on the Safety Data Sheet. This data sheet contains technical information required for safe and economical operation of this product. READ IT THOROUGHLY PRIOR TO PRODUCT USE. Emergency safety directory assistance: US 1 202 464 2554, Europe + 44 1235 239 670, Asia + 65 3158 1074, Brazil 0800 707 7022 and 0800 172 020, Mexico 01800 002 1400 and (55) 5559 1588

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