

Micromax™ 0001L

Electronic Inks & Pastes

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Product Information

00X0L Series Resistor Composition 1 Ω /sq

Designed to give high productivity and high quality, Micromax™ 00X0L low ohm resistor series has been specifically developed for Chip Resistor Applications. It meets the market needs for low cost 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 and chip size
- Linear blend behavior
- Compatible with Micromax™ 5426, 5421E, 5418 Ag/Pd terminations and 5463 Ag termination

Product information	Value	Unit
Application	Chip resistor	
Solvent or thinner	Micromax™ 8250(T)	
Blend member or series	00X0L Series	

Rheological properties	Value	Unit
Viscosity	150 - 240 ^[1]	Pa.s

Application technique	Value	Unit
Mask mesh	250 - 325	
Mask emulsion	10 - 15	μ m
Drying time	10 - 15	min
Drying temperature	150	°C
Recommended film thickness, dried	14 - 16	μ m
Leveling time	5 - 10	min

Electrical properties	Value	Unit
Resistivity	0.7 - 1 ^[2]	Ohm per square
Hot Temperature Coefficient Resistance	≤400 ^[3]	ppm/°C
Cold Temperature Coefficient Resistance	≤400 ^[4]	ppm/°C
Electrostatic discharge, 5kV	-0.1 - 0.1 ^[5]	(avgDeltaR)(%)

Storage and stability	Value	Unit
Shelf life	6 ^[6]	months

1: Brookfield HAT, SC4-14/6R, @10rpm

2: Micromax™ 0001L resistor uses 8sq resistor geometry to measure the resistivity and TCR. Unless otherwise noted, Micromax™ 00X0L resistors are printed on Micromax™ 5426 terminations at 14-16µm dried thickness, then fired in 30 minutes cycle with 850°C peak for 10 minutes.

3: Temperature Coefficient of Resistance from +25 to +125°C for Hot TCR. Micromax™ 0001L resistor uses 8sq resistor geometry to measure the resistivity and TCR.

4: Temperature Coefficient of Resistance from +25 to -55°C for Cold TCR. Micromax™ 0001L resistor uses 8sq resistor geometry to measure the resistivity and TCR.

5: Electrostatic discharge HBM using 150pF/1000Ω R/C network. Untrimmed resistors, 1.0mm x 1.0mm.

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

How to use

• Terminations

- Micromax™ 00X0L resistor series was designed for use with high silver-containing terminations like Micromax™ 5421E Ag/Pd conductor. Reported properties were obtained using 5426 Ag/Pd termination. Use of different terminations may cause a shift of resistance and TCR values.

• Blendability

- Adjacent members among Micromax™ 00X0L series are totally blendable. As blend members of Micromax™ 00X0L series, Micromax™ 003XZ (1kΩ/sq.) are blendable with Micromax™ 0020L, and 00L1L (100mΩ/sq.) is blendable with 0001L.

• 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™ 00X0L series are based on resistors printed to 14~16µm dried thickness with resistor geometry 1.0mmsq (10 and 100Ω) and 8sq (1Ω). 250~325 mesh screen with 10~15µm emulsion is recommended.

• Thinning

- Micromax™ 00X0L 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 losses.

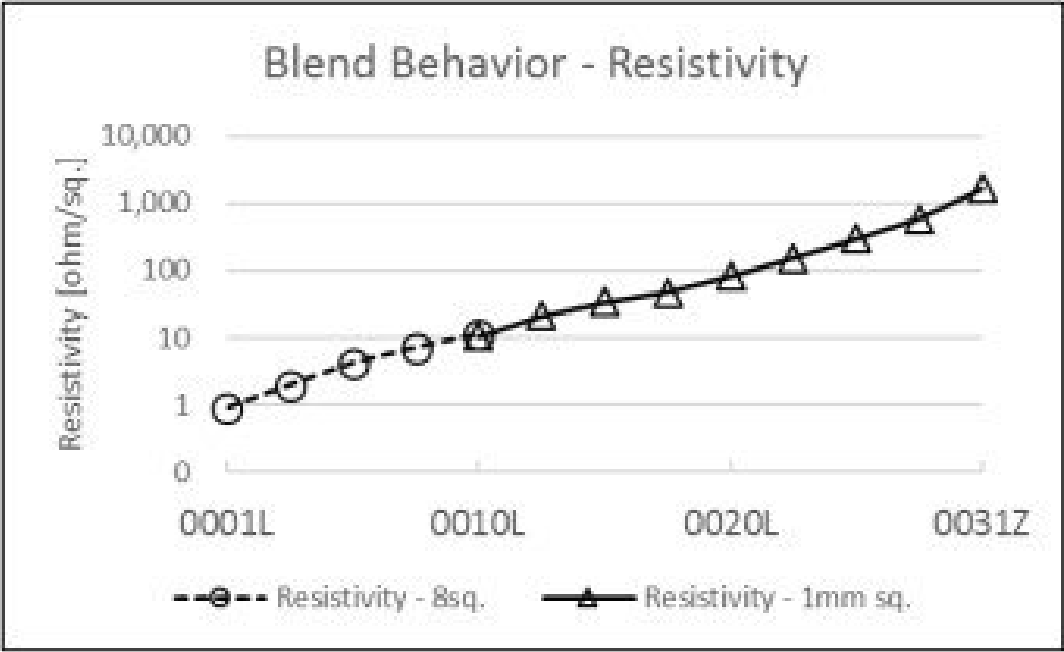
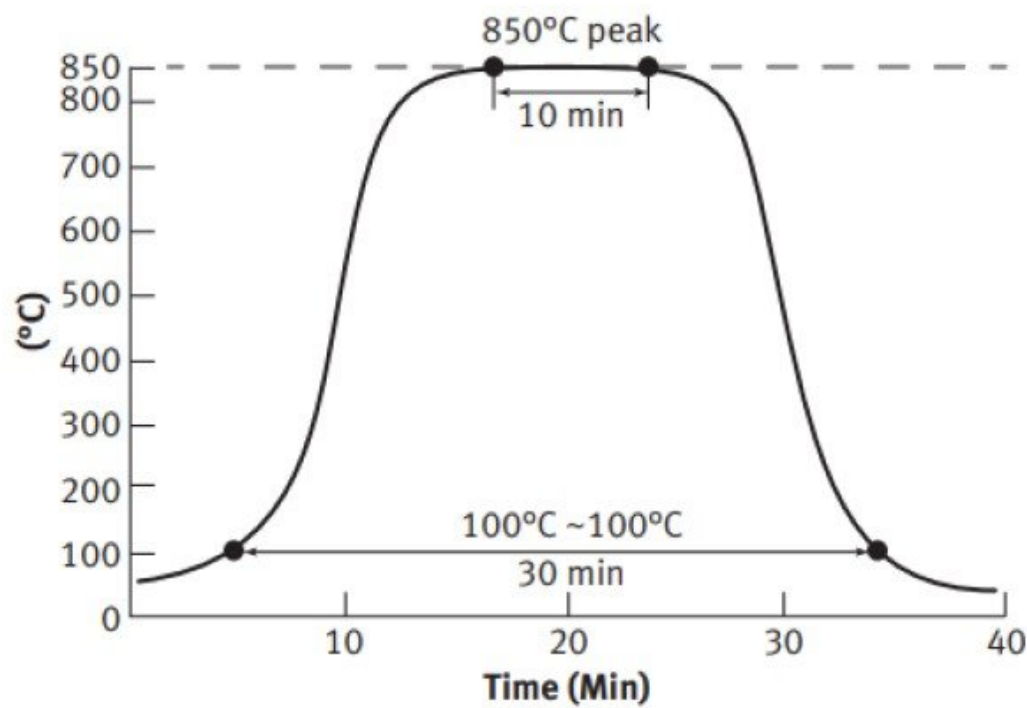
• Drying

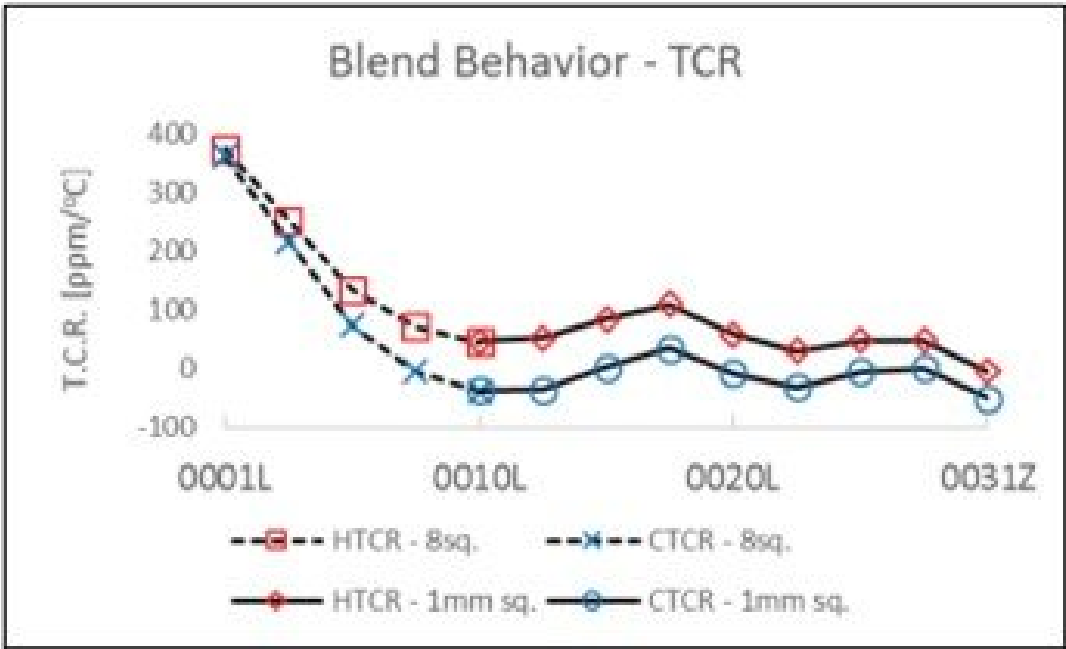
- Parts should be allowed to level at room temperature and then dried.

• 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)





Typical Performance Properties

Test	Properties
STOL*1 (ΔR%)	≤ ± 0.1

*1 Short time overload with loaded voltage of 2.5 times the rated power with 400V maximum. 1.0mm x 1.0mm after trimming.

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.

Disclaimer

NOTICE TO USERS: Values shown are based on testing of laboratory test specimens and represent data that fall within the standard range of properties for natural material. These values alone do not represent a sufficient basis for any part design and are not intended for use in establishing maximum, minimum, or ranges of values for specification purposes. Colourants or other additives may cause significant variations in data values. Properties of moulded parts can be influenced by a wide variety of factors including, but not limited to, material selection, additives, part design, processing conditions and environmental exposure. Other than those products expressly identified as medical grade (including by MT® product designation or otherwise), Micromax's products are not intended for use in medical or dental implants. Regardless of any such product designation, any determination of the suitability of a particular material and part design for any use contemplated by the users and the manner of such use is the sole responsibility of the users, who must assure themselves that the material as subsequently processed meets the needs of their particular product or use. To the best of our knowledge, the information contained in this publication is accurate; however, we do not assume any liability whatsoever for the accuracy and completeness of such information. The information contained in this publication should not be construed as a promise or guarantee of specific properties of our products. It is the sole responsibility of the users to investigate whether any existing patents are infringed by the use of the materials mentioned in this publication. Moreover, there is a need to reduce human exposure to many materials to the lowest practical limits in view of possible adverse effects. To the extent that any hazards may have been mentioned in this publication, we neither suggest nor guarantee that such hazards are the only ones that exist. We recommend that persons intending to rely on any recommendation or to use any equipment, processing technique or material mentioned in this publication should satisfy themselves that they can meet all applicable safety and health standards. We strongly recommend that users seek and adhere to the manufacturer's current instructions for handling each material they use, and entrust the handling of such material to adequately trained personnel only. Please call the telephone numbers listed for additional technical information. Call Customer Services for the appropriate Materials Safety Data Sheets (MSDS) before attempting to process our products. Copyright © 2025 Micromax or its affiliates. All rights reserved. Micromax™, and all other trademarks identified herein with ®, ™, SM, unless otherwise noted, are trademarks of Micromax or its affiliates.

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