

Micromax™ 0020L

Electronic Inks & Pastes

PRODUCT DESCRIPTION

00X0L Series Resistor Composition 100 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

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

PRODUCT INFORMATION

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

TECHNICAL DATA

Rheological Properties	Value	Unit
Viscosity ¹	150 to 240	Pa.s
Application Technique	Value	Unit
Mask mesh	250 to 325	
Mask emulsion	10 to 15	µm
Drying time	10 to 15	min
Drying temperature	150	°C
Recommended film thickness	14 to 16	µm
Leveling time	5 to 10	min
Electrical Properties	Value	Unit
Resistivity ²	70 to 100	Ohm per square
Hot Temperature Coefficient Resistance ³	-100 to 100	ppm/°C
Cold Temperature Coefficient Resistance ⁴	-100 to 100	ppm/°C
Electrostatic discharge ⁵	-0.1 to 0.1 (avgDeltaR)(%)	
Noise ⁶	≤-25	dB
Storage and Stability	Value	Unit
Shelf life ⁷	6	months

¹Brookfield HAT, SC4-14/6R, @10rpm

²Unless 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. Resistor geometry is 1.0mm x 1.0mm.

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

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

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

⁶Using Quan-Tech Model 315C meter, untrimmed 1.0mm x 1.0mm

⁷in unopened containers, from date of shipment, stable environment at room temperature between 5°C - 30°C

PROCESSING GUIDELINES

Processing 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 Micromax™ 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, 003XZ (1kΩ/sq.) are blendable with 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.

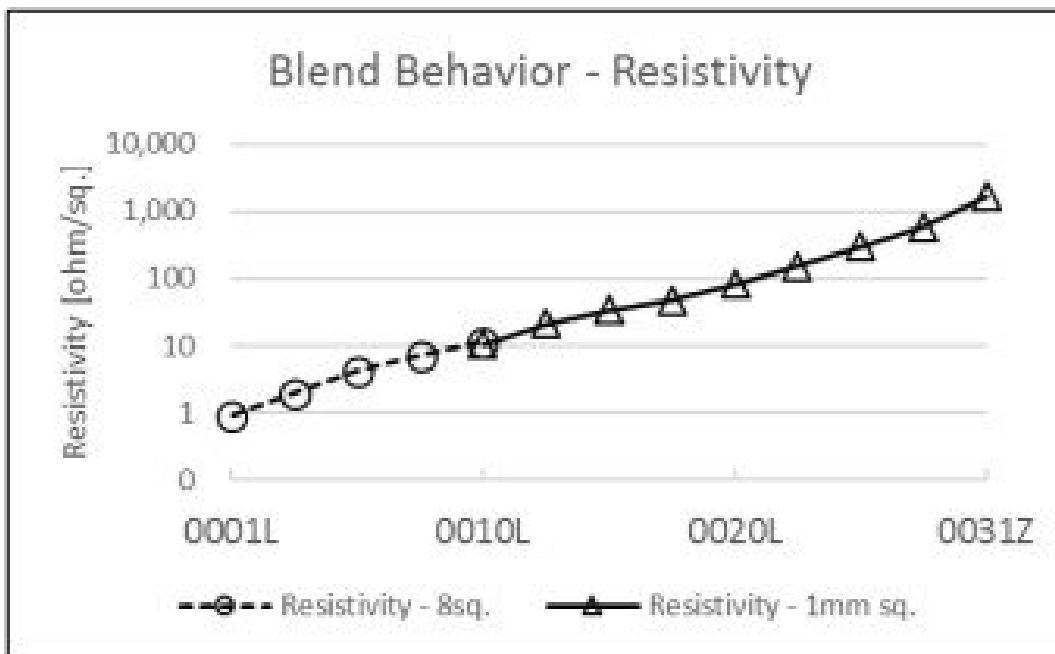
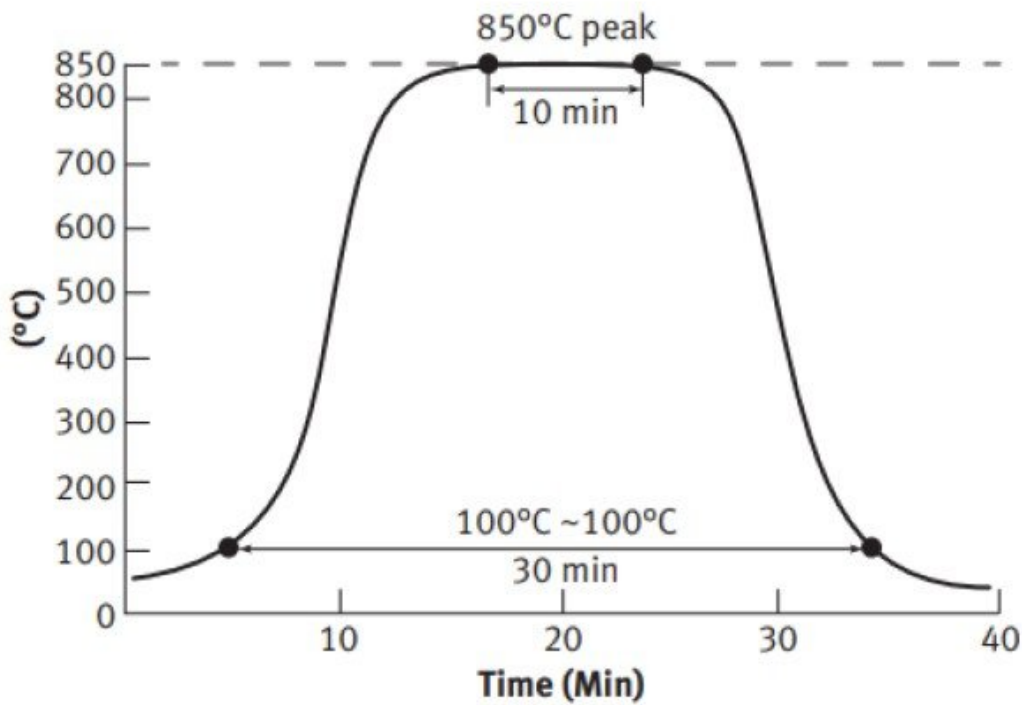
Drying

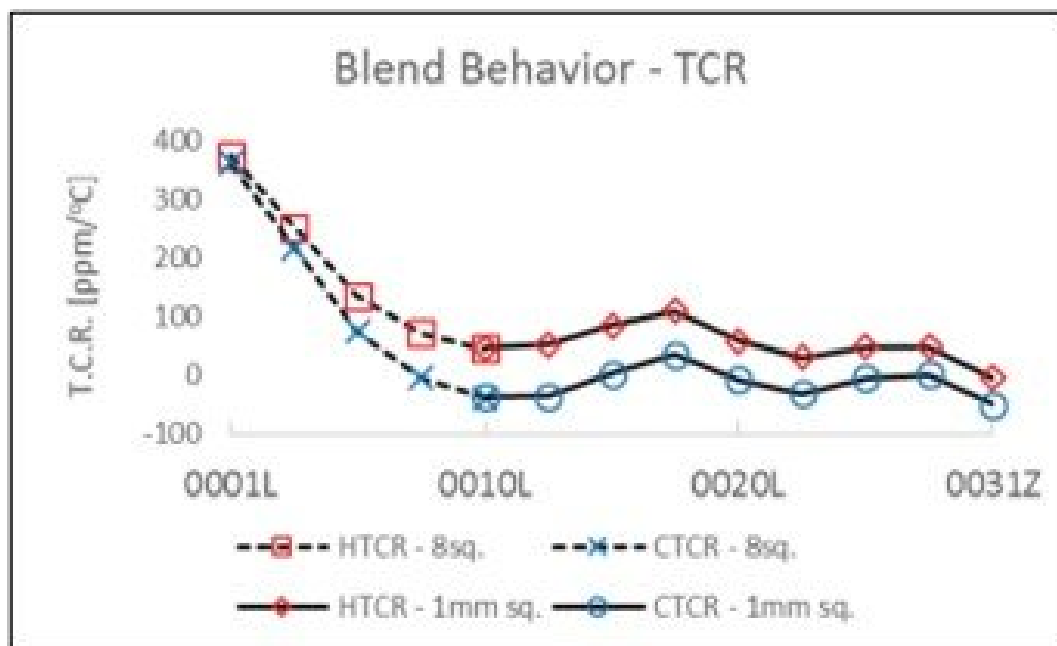
Parts should be allowed to level at room temperature and then dried.

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)





Properties

Typical Performance Properties

Test	Properties
STOL* ¹ ($\Delta R\%$)	$\leq \pm 0.1$

*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.

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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