

Micromax™ 0031Z

Electronic Inks & Pastes

PRODUCT DESCRIPTION

00X1Z Series Resistor Composition Standard Version 1KΩ/sq

Designed to give an ideal balance of properties, Micromax™ 00X1Z series has been specifically developed for Chip Resistor Applications. It meets the market needs for smaller sized resistors and lower cost of manufacturing.

Product benefits

- Excellent power handling stability
- Exceptional ESD stability
- Excellent performance with thinner thickness and smaller chip size
- High speed laser trimmable
- Good blendability with lower and higher ohm Micromax™ 00X1 resistor members through 70mΩ to 10MΩ
- Low noise (MIL-STD-202)

Processing features

- Fast firing - 850°C/30min profile
- Insensitive to firing profile / chip size
- Linear blend behavior
- Compatible with 5421E Ag/Pd 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	00X1Zsrs

TECHNICAL DATA

Rheological Properties	Value	Unit
Viscosity ¹	110 to 200	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	1.4 to 2.2	kOhm per square
Hot Temperature Coefficient Resistance ³	-70 to 30	ppm/°C
Cold Temperature Coefficient Resistance ⁴	-70 to 30	ppm/°C
Storage and Stability	Value	Unit
Shelf life ⁵	6	months

¹Brookfield HAT, SC4-14/6R, @10rpm

²Unless otherwise noted, Micromax™ 00X1Z resistors were 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 0.5mm x 0.5mm.

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™ 00X1Z 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 of Micromax™ 00X1Z series are totally blendable. It is also blendable with lower and higher ohm Micromax™ 00X1 resistor members like 0001(1Ω/sq) and 0061(1MΩ/sq) in good linearity through 70mΩ/sq (00L2C) and 10MΩ/sq (0071).

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™ 00X1Z series are based on resistors printed to 14~16µm dried thickness and 0.5mmsq. (10Ω ~ 100KΩ) 250 - 325 mesh screens with 10-15µm emulsion is recommended.

Thinning

Micromax™ 00X1Z 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.

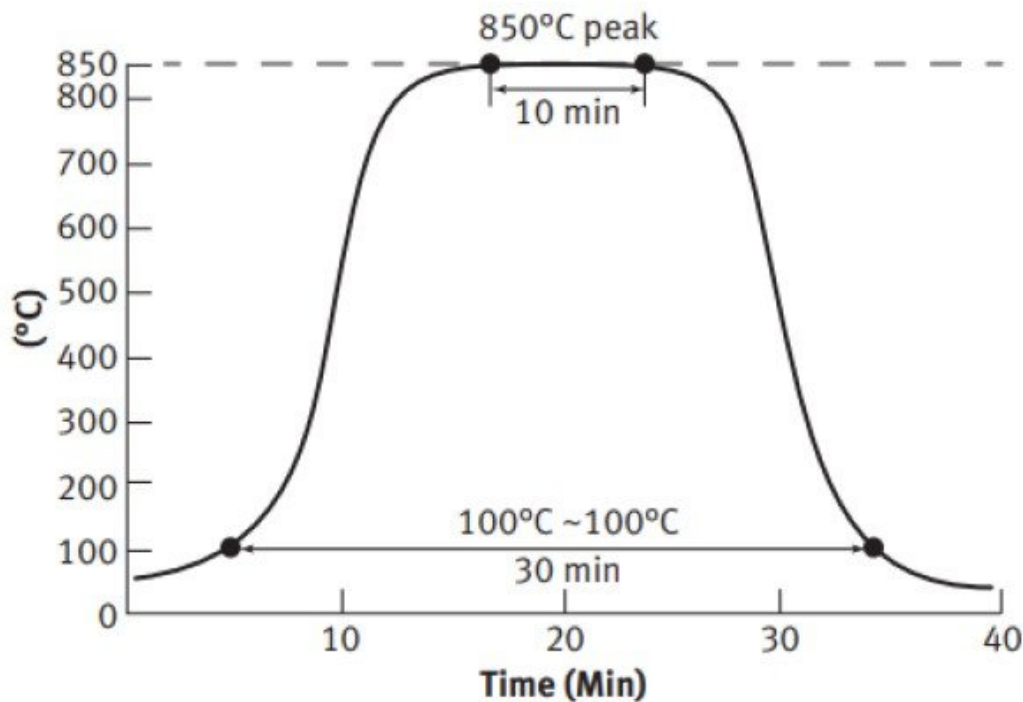
Drying

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 & 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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