



DUPONT™ 00X0L SERIES

RESISTOR COMPOSITION

PRODUCT DESCRIPTION

Designed to give high productivity and high quality, DuPont™ 00X0L low ohm resistor series has been specifically developed for Chip Resistor Applications. It meets the market needs for low cost manufacturing.

PROCESSING FEATURES

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

PRODUCT BENEFITS

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

*Phthalate free as used herein means that phthalate is not an intentional ingredient in and is not intentionally added to the referenced product. Trace amounts however may be present.

Typical Performance Properties

Product Name	Resistivity Ω/sq^1		HTCR $\text{ppm}/^\circ\text{C}^2$	CTCR $\text{ppm}/^\circ\text{C}^2$	ESD (5kV) ³ $\Delta\text{R}\%$	STOL ⁴ $\Delta\text{R}\%$	Quan-Tech Noise ⁵ (dB)	Viscosity ⁶ Pa.s
0001L ⁷	1	0.7 - 1.0	$\leq +400$	$\leq +400$	$\leq +/- 0.1\%$	$\leq +/- 0.1\%$	-	150 - 240
0010L	10	7.0 - 10.0	$+/- 100$	$+/- 100$	$\leq +/- 0.1\%$	$\leq +/- 0.1\%$	≤ -25	150 - 240
0020L	100	70.0 - 100.0	$+/- 100$	$+/- 100$	$\leq +/- 0.1\%$	$\leq +/- 0.1\%$	≤ -25	150 - 240

¹ Unless otherwise noted, 00X0L resistors are printed on DuPont™ 5426 terminations at 14-16 μm dried thickness, then fired in 30 minutes cycle with 850°C peak for 10 minutes. Resistor geometry is 1.0mm x 1.0mm.

² Temperature Coefficient of Resistance from +25 to +125°C for Hot TCR and +25 to -55°C for Cold TCR

³ Electrostatic discharge HBM using 150pF/1000 Ω R/C network. Untrimmed resistors, 1.0mm x 1.0mm@5kV

⁴ Short time overload with loaded voltage of 2.5 times the rated power with 400V maximum. 1.0mm x 1.0mm after trimming.

⁵ Using Quan-Tech Model 315C meter, untrimmed 1.0mm x 1.0mm

⁶ Brookfield HAT, SC4-14/6R, @10rpm

⁷ 0001L resistor uses 8sq resistor geometry to measure the resistivity and TCR

RECOMMENDED PROCESSING CONDITIONS

Substrates

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

Termination

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

Blending

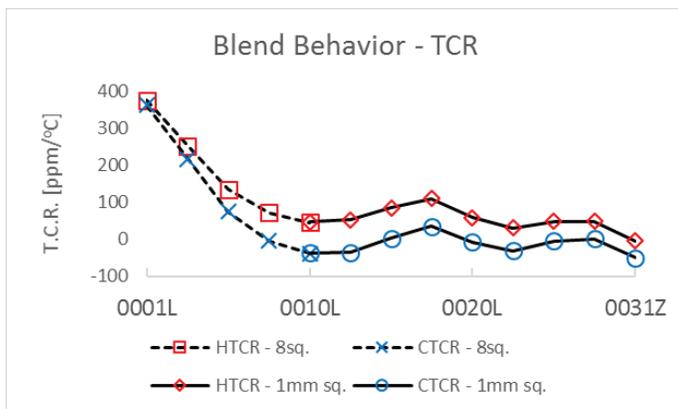
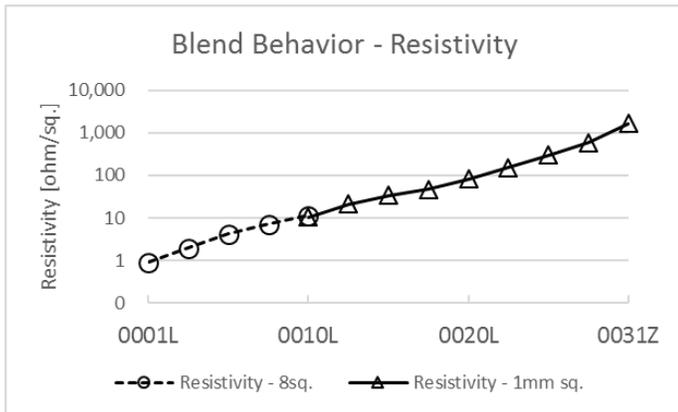
Adjacent members among 00X0L series are totally blendable. As blend members of 00x0L series, 003XZ (1k Ω/sq .) are blendable with 0020L, and 00L1L (100m Ω/sq .) is blendable with 0001L.

Printing

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



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Thinner

00X0L resistors have been optimized for screen printing and thinning is not normally required or recommended. DuPont™ 8250 thinner may be added sparingly to compensate for losses.

Drying

Parts should be allowed to level at room temperature for 5-10minutes and then dried for 10-15minutes at 150°C.

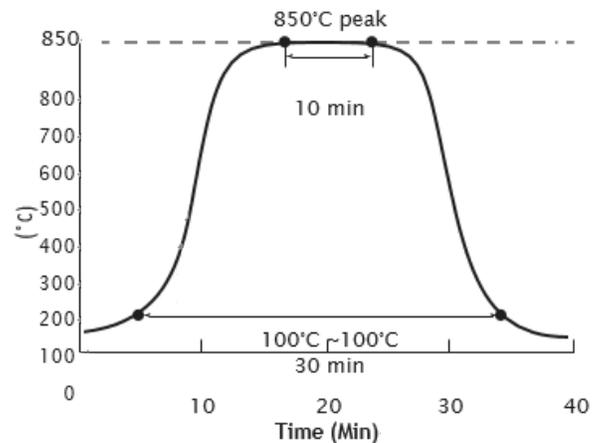
FOR MORE INFORMATION ON DUPONT™ 00X0L SERIES OR OTHER DUPONT ADVANCED MATERIALS PRODUCTS, PLEASE CONTACT YOUR LOCAL REPRESENTATIVE:

advancedmaterials.dupont.com

Firing

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

DuPont 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. 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 the material Safety Data Sheet (SDS).

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CAUTION: Do not use in medical applications involving permanent implantation in the human body. For other medical applications, see "DuPont Medical Caution Statement," H-50102-4.

00x0L (8/20)