

# DuPont™ 00X1Z Series

Resistor Composition 10Ω/SQ. ~ 100KΩ/SQ. Resistors

## Product Description

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

## Processing Features

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

## 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 DuPont™ 00X1 resistor members through 70mΩ to 10MΩ
- Low noise (MIL-STD-202)

## Typical Physical & Electrical Properties

	Product Name	Resistivity Ω/sq <sup>1</sup>	HTCR ppm/°C <sup>2</sup>	CTCR ppm/°C <sup>2</sup>	Viscosity Pa.s <sup>3</sup>
Blend Member	00L2C <sup>5</sup>	0.07 (0.05 ~ 0.09)	-20 ~ 50	-100 ~ 100	100 ~ 200
Blend Member	0001 <sup>5</sup>	1 (0.85 ~ 1.15)	-100 ~ 100	-100 ~ 100	80 ~ 180
Standard Version	0011Z	10 (11.9 ~ 16.1)	-70 ~ 70	-70 ~ 70	110 ~ 180
Positive TCR position <sup>4</sup>	0012Z		-10 ~ 100	-10 ~ 100	110 ~ 180
Standard Version	0021Z	100 (107 ~ 145)	-50 ~ 80	-50 ~ 80	110 ~ 180
Positive TCR position <sup>4</sup>	0022Z		0 ~ 110	0 ~ 110	110 ~ 180
Standard Version	0031Z	1K (1.4K ~ 2.2K)	-70 ~ 30	-70 ~ 30	110 ~ 200
Negative TCR position <sup>4</sup>	0032Z		-110 ~ -10	-110 ~ -10	110 ~ 200
Negative TCR position <sup>4</sup>	0033Z		-140 ~ -90	-230 ~ -180	110 ~ 200
Negative TCR position <sup>4</sup>	0034Z		-100 ~ -20	-170 ~ -90	110 ~ 200
Standard Version	0041Z	10K (18K ~ 23.4K)	-70 ~ 50	-70 ~ 50	110 ~ 200
Negative TCR position <sup>4</sup>	0042Z		-50 ~ 0	-120 ~ -60	110 ~ 200
	0051Z	100K (93K ~ 126K)	-70 ~ 50	-70 ~ 50	110 ~ 200
Blend Member	0061 <sup>6</sup>	1M (0.85M ~ 1.15M)	10 ~ 50	-70 ~ 0	110 ~ 170
Blend Member	0071 <sup>6</sup>	10M (8 ~ 12M)	-10 ~ 50	-70 ~ 0	110 ~ 180

<sup>1</sup>Unless otherwise noted, 00X1Z resistors were printed on DuPont 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.

<sup>2</sup>Temperature Coefficient of Resistance from +25 to +125°C for Hot TCR and +25 to -55°C for Cold TCR.

<sup>3</sup>Brookfield HAT, SC4-14/6R, @10rpm

<sup>4</sup>Options with different TCR positions are available for 10Ω, 100Ω, 1KΩ, 10KΩ

<sup>5</sup>00L2C and 0001 resistors were printed at 18-22µm dried thickness on DuPont™ 5426 terminations. Resistor geometry is 500sq.

<sup>6</sup>0061 and 0071 resistors were printed at 13-15µm dried thickness on DuPont™ 5426 terminations. Resistor geometry is 0.8mm x 0.8mm.

## Recommended Processing Conditions

### Substrates

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

### Termination

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

### Printing

Properties of 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.

### Thinner

00X1Z 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 evaporative losses.

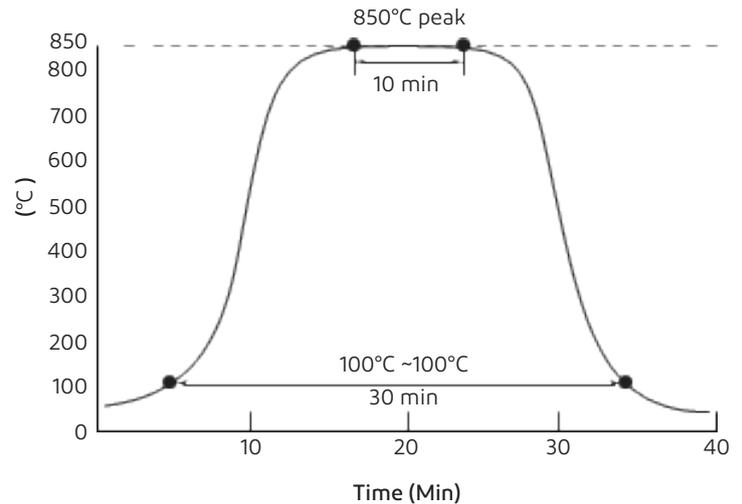
### Drying

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

### 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 (MSDS)



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For more information on DuPont™ 00X1Z Series or other DuPont products, please visit our website.

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