

# Technical Data Sheet

## Low Temperature Co-fired Ceramic Systems A6M-E LTCC Mixed Metal Conductor System

### Application

Ferro's co-fireable mixed-metal conductors are engineered to provide high reliability performance with A6M-E LTCC packaging system.

Ferro's LTCC mixed metal conductors are formulated and processed to be RoHS and REACH compliant.

### Typical Formulation Properties

**Line Resolution:** 5 mil (125µm) lines and spaces

**Storage and Shelf-life:** These products should be stored in tightly sealed containers at 10-25°C, in a dry place away from direct sunlight. Shelf life of a factory seal container is minimum 6 months from date of shipment when properly stored.

### Typical Process Parameters

**Thinning:** These pastes are formulated at the appropriate viscosity for the intended application. Contact Technical Service for recommended thinner to replace solvent loss.

**Printing:** A 280-325 mesh stainless steel screen with 12 to 25 µm emulsion thickness.

**Leveling:** 5 minutes at room temperature.

**Drying:** 10 minutes at 70°C with forced air flow and exhaust.

**Firing:** 850°C for 15minutes at Peak Temperature.

Refer to Ferro's LTCC Design Guide for specific ramp rates, air exchange information, cooling rates provided and other processing parameters.

### Typical Performance Properties

Product		CN33-398	CN33-407	CN39-005	CN30-080M	CN36-020
Composition Family		Ag	Ag	AuPtAg	Au	AuPtPd
Application		Internal Conductor	Via	Transition Via	Surface Wirebondable	Surface Solderable
Viscosity <sup>1</sup>	Pa.s	80 ± 35	110 ± 50	115 ± 25	130 ± 20	190 ± 40
Metal Content	%	72	89.5	90	70	72
Fired Thickness	µm	14-18	14-18	14-18	14-18	14-18
Resistivity <sup>2</sup>	mΩ/sq	< 2.0	-	-	< 2.2	< 50
Wirebond Strength <sup>3</sup>	grams	-	-	-	> 35	-
Solderability <sup>4</sup>	%	-	-	-	-	> 95
Leach <sup>4</sup>	%	-	-	-	-	< 10
Initial Adhesion <sup>5</sup>	N	-	-	-	-	> 13

<sup>1</sup> Brookfield HBT viscometer typically with an SC4-14 spindle

<sup>2</sup> Per sq. @25 µm

<sup>3</sup> CN30-025JH tested w/ 1 mil wire CN30-080M tested w/2 mil

<sup>4</sup> 230 ± 5°C; 60Sn-40Pb-2Ag; 185 flux;

<sup>5</sup> Peel on 80 x 80 mil pads



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