CERMET GOLD CONDUCTOR

ESL 8836 and 8836-A mixed bonded thick film gold pastes are specially designed for thin printing. They produce a very smooth, dense film of 6 to 9 micrometers fired thickness. ESL 8836 is particularly well suited for automatic thermosonic wirebonding. While they have a wide firing range, a peak firing temperature of 850°C gives the best properties. ESL 8836-A is an alloyed version of 8836. Its properties are similar to 8836, but it is designed for ultrasonic wire bonding using 25 micrometers diameter aluminum wire.

PASTE DATA

RHEOLOGY: Thixotropic, screen printable paste
VISCOSITY:
(Brookfield RVT, ABZ Spindle, 10 rpm, 25.5°C±0.5°C) 250±25 Pa-s
BONDING MECHANISM: Mixed
SHELF LIFE: (25°C) 6 months

PROCESSING

SCREEN MESH/EMULSION: 325/25 µm
LEVELING TIME: (25°C) 5-10 minutes
DRYING AT 125°C: 10-15 minutes
FIRING TEMPERATURE RANGE: 850°C-930°C
OPTIMUM: 850°C
TIME AT PEAK: 10-12 minutes
RATE OF ASCENT/DESCENT: 60°C-100°C/minute
SUBSTRATE OF CALIBRATION: 96% alumina
THINNER: ESL 413

8836/A 9711-E
TYPICAL PROPERTIES

FIRED THICKNESS: 6-9 µm

RESISTIVITY: 8836 ≤ 6 mΩ/square

PRINTING RESOLUTION:
(Line/Space) 8836-A ≤ 10 mΩ/square

RESISTIVITY:
8836 8836-A

APPROXIMATE COVERAGE: 125 µm x 125 µm

ADHESION: (90° pull, 2.0 mm x 2.0 mm pads, 80 Au/20 Sn solder)

Initial pull strength: 30-40 N

Aged 48 hours at 150°C: ≥ 20 N

THERMOSONIC WIRE BONDING:
(125°C bonding temperature)

(25 µm Au) 8836 6-9 grams

8836-A 5-8 grams

(50 µm Au) 8836 20-26 grams

8836-A 19-25 grams

ULTRASONIC Al WIRE BOND:
(25 µm, 1% Si, Al wire)

Initial pull strength: 8836 7-9 grams

8836-A 6-10 grams

Aged 48 hours at 150°C: 8836 4-7 grams

8836-A 5-6 grams

Aged 200 hours at 150°C: 8836 3-4 grams

CONTACT RESISTANCE:
(Change in contact resistance of Al bonds, 1000 hours at 150°C)

8836-A Insignificant

EUTECTIC DIE BONDING:
Excellent

COMPATIBILITY:
ESL 3900, 3980, R-300-A and D-R-300-B

ESL 4905-C, 4905-CH, 4911

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