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## 6388

### Thermal Via Fill Pd/Ag Conductor

6388 is a Pd/Ag conductor designed for filling or plugging through-holes in 96% alumina substrates. Its target applications include substrates for chip size package, power amplifier module, and high-density circuit.

### Major Features of 6388

- \* High thermal conductivity.
- \* No shrinkage away from side walls.
- \* Possible cost reduction compared with AlN substrate.
- \* Designed for small via.
- \* Prints easily with stencils (one shot).

### Composition Properties

Solids Weight (%) @1050°C

92.0-94.0%

Viscosity 200-400 Pa.s.

(Brookfield HBT, Utility Cup and Spindle,  
10rpm25°C)

Sheet Resistivity (on 96% alumina substrate)

< 15.0mΩ/□ /15μm

Thinner

6388 is optimized for screen printing and thinning is not recommended.

### Recommended Processing Procedures

Storage

6388 should be stored at room temperature (5-30°C) in a clean environment.

*Note: 6388 should be thoroughly mixed prior to use. Jar rolling is not recommended. It causes changes in the paste rheology.*

Shelf Life

6388 has a shelf life of six (6) months when sealed and stored at room temperature (5-30°C).

### Recommended Processing

The recommended processing involves:

1. Printing by stencil.
2. Drying.
3. Firing.
4. Refiring.
5. Planalization or grinding.
6. Top conductor.

Printing

6388 prints easily with stencils. The recommended stencil conditions are:

Stencil Thickness: 150μm

Formation: Low cost etching type

Via Size: > 100μm

*Note: Prior to use, 6388 should be thoroughly mixed with a clean spatula. Abrupt mixing should be avoided, as it causes excess of air trapped inside the paste. Printing should be carried out in a clean and well-ventilated room.*

*To obtain optimal printing results, 6388 should be stored at 20-23°C prior to printing.*

Drying

After leveling in a clean room for 5-10 minutes, the printed 6388 should be dried at 120°C for 10 minutes in a well-ventilated oven or belt dryer.

Firing

6388 is designed be fired for 30 minutes in total at 850°C peak temperature.

*Note: Firing should be carried out in a well-ventilated conveyor belt furnace. Be aware of possible inlet of organic solvent vapor from outside the furnace. Ensure that the inlet air used does not contain any dry*

*impurities. Due to the required balance of airflow, the environment inside the furnace becomes oxidized. Prevention of the exhaustion gas from entering into other rooms should be enforced.*

Number of refirings required

Three (3) to four (4) refirings are required.

Recommended Planalization Processing

1. Rough scrub with #320 sandpaper or buff roller or ceramic roller.
2. Fine scrub with #800-1000 sandpaper or buff roller or ceramic roller.

Expansion upon firing (%)

Percentage expansion upon firings is shown below:

Number for firings	Expansion (%)
0 (Dried)	100%
1	112%
2	108%
3	107%
4	105%

## Safety and Handling

This product contains organic solvent and materials. The following precautions should be exercised when handling 6388:

- \* Use with adequate ventilation.
- \* Avoid prolonged contact with skin
- \* Avoid prolonged breathing of vapor
- \* If contact with skin occurs, wash affected area immediately with soap and water.
- \* Dangerous if swallowed - do not consume.
- \* Ensure that no metal impurities and contaminants on the printing equipment.
- \* Refer to MSDS for more details.

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