POLYIMIDE DIE ATTACH ADHESIVES PDA CM257AG And PDA CM258AGCU

Screenable silver polyimide preparations for developing high quality electrical and mechanical contacts - used in die attach applications and bonding semiconductors and other devices in hybrid microelectronic circuits.

PDA CM257AG
Standard screenable conductive polyimide

PDA CM258AGCU
Screenable silver coated copper filled polyimide

FEATURES

- **One components systems**
- **Excellent screening or spin-on characteristics**
- **Develops good bond strength**
- **Low contact resistance**
- **Very low thermal stress**
- **Low thermal impedance**
- **Temperature up to 350 ^oC**

Transene Co. Inc. 10 Electronics Ave, Danvers, MA 01923 Tel: 978-777-7860 Fax: 978-739-5640
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POLYIMIDE DIE ATTACH

DESCRIPTION

Polyimide Die Attach adhesives are one component systems designed as a conductive thermosetting silver preparations for dispensing, screen printing, or spin-on applications. Their composition provides high electrical and thermal conductivity with excellent bond strength after appropriate cure. Polyimide Die Attach adhesives are used to advantage where high heat and chemical resistance is required and epoxies are not adequate.
PDA adhesives form ohmic bonds with semiconductors if the surface of the semiconductor is metallized, or if the surface is highly "doped" and lapped. The product finds extensive use in bonding semiconductor chips, integrated monolithic circuits, diodes, transistors and die attach in thin film and thick film hybrid microelectronic circuits. It bonds to glass, mica, plastic, graphite, quartz and other materials as well.

PROPERTIES

POLYIMIDE DIE ATTACH ADHESIVES

System	One-Part
Composition	Silver or silver coated copper filled polyimide
Rheology	Thixotropic paste
Viscosity	90,000 cps.± 5%
Thinner	Butyl carbitol acetate
Cure Temp.	300 ºC
Electrical Resistivity, nominal	1 x 10^{-4} ohm-cm
Thermal Conductivity	100 BTU/ft^2/hr./ºF./in.
Tensile Strength	110-120 MPa
Elongation	25-30%
Glass Transition Temp (T_g)	310 ºC
CTE	40 ppm/ºC
Moisture Uptake	2-3%
Stress	3.6x108
Dissipation Factor	0.001@1kHz
Shelf Life	6 months @ 40 ºF
Decomposition Temperature	560 ºC
Weight Loss (500 oC in air/2hr)	0.5-0.7%
Solids	79-81%

APPLICATION

Dispense, screen print, or spin-on applications are possible; thinning may be required for spin-on coating. Avoid entrapping air. Once coating has been applied, bake at 120 oc for 30 seconds followed by 150 oC for 30 seconds on a hot plate to dry the film.
Curing is accomplished in a nitrogen atmosphere:

Ramp from room temperature to 250 ºC at 4 ºC/minute
Hold at 250 ºC for 30 minutes
Ramp to 300 ºC at 2.5 ºC/minute
Hold at 300 ºC for 60 minutes
Gradually cool to room temperature

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