Bondline
Electronic Adhesives, Inc.

BONDLINE 2948

ELECTRICALLY CONDUCTIVE ADHESIVE

Bondline 2948 is a silver filled, die attach adhesive. Excellent adhesion to silver and gold surfaces. Bondline thickness is controlled with .002 in. diameter spacers.

ADHESIVE PROPERTIES

Color	Silver
Viscosity*	23,000 cps
Work Life @ 25°C	8 hours
Hardness (Shore D)	90
Cure Options	30 minutes @ 150°C
Service Temperature Range	-55°C to 150°C
Lap Shear Strength @ 25°C (Al to A1)	2500 psi
@ 25°C (Au to Au)	2500 psi
Tensile Modulus	1.1×10^6 psi
Thermal Conductivity	2.57 W/mK
Volume Resistivity**	.00025 ohm cm
Thixotropic Index	3
Specific Gravity	4.0
Die Shear Strength***	4500 psi
Mobile Ion Concentration:	
Chloride	<10 ppm
Sodium	<10 ppm
Potassium	Nil
Flouride	Nil
Glass Transition Temperature (Tg)**	130°C
Weight Loss (TGA) @ 300°C	0.43%
Coefficient of Thermal Expansion**	
Above Tg	200×10^{-6} in/in/°C
Below Tg	72×10^{-6} in/in/°C
Shelf Life	1 year @ -40°C or Colder
Availability	Net volume 1cc to 10cc, available in 3cc, 5 cc, & 10 cc syringes

Adhesive properties are not intended to be used as specification limits.
* Brookfield DV II+, CP 51 Spindle, 10 rpm, 25°C
** Cured 1 hour @ 150°C
*** Paladium plated chip capacitor on a gld plated substrate

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GENERAL INSTRUCTIONS FOR ADHESIVE STORAGE/ USE

FROZEN STORAGE

This adhesive must be stored at (minus) -40°C (°F) or colder at all times. Storing this adhesive at temperatures warmer than (minus) -40°C (°F) will shorten its work life.
DO NOT RE-FREEZE adhesive that has already been thawed!

THAWING PROCESS

Remove frozen syringe from freezer. Place in vertical position with lure lock end pointed down during thaw. Adhesive must reach room temperature before use. See chart below based on syringe size.

SYRINGE SIZE	THAW TIME
1cc	5 minutes
3cc	10 minutes
5cc	15 minutes
10cc	20 minutes

SURFACE PREPARATION

Make sure that all surface areas to be bonded are free of any contamination. If parts have been solvent cleaned make sure solvent is dried before applying adhesive

APPLICATION

Check the work life of the adhesive, on the technical data sheet. Adhesives must be used within its work life .The adhesives' properties will change if it is used past the allowable work life. Apply adhesive using dispensing equipment of choice. Contact Bondline Technical Service with questions about dispensing adhesives.

CURE

Choose a Cure Option (time & temperature) from the Bondline technical data sheet. Preheat the oven to the temperature of the selected cure option. For optimum cure, do not deviate from the selected cure option. Be sure to allow additional time for holding fixtures to reach cure temperature. Avoid opening oven doors during cure. Large fixtures and/or multiple fixtures may require extended cure time.

SAFETY

Review the adhesive Safety Data Sheet (SDS) before using. Refer to the SDS in case of emergency. Always wear protective gloves and goggles while handling adhesives. Only work with adhesives in well-ventilated areas, with curing ovens vented outside. For industrial use only.

TECHNICAL SERVICE CONTACT

For recommendations and help with any aspect of adhesive applications please contact the Bondline Technical Service Department (408) 830-9200, or via email: info@bondline.net or visit our website, www.bondline.net

CAUTION: For industrial use only. People with sensitive skin may have a reaction to this adhesive. Avoid skin contact. Wash all areas with soap and water immediately if contact does occur. It is important to refer to Safety Data Sheet (SDS) OSHA for more details.

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