

Die Attachment using Silver Epoxy

INTRODUCTION

This is a description on how to attach die using silver epoxy.

Description

1. Clean headers ultrasonically in acetone for 15 min. It is important to note that the ultrasonic tub is filled with water and then the acetone and headers are put in a beaker which is then put in the tub. Ensure that the water level is approximately one inch from the top. Do not put any other fluid but water in the ultrasonic tub.
2. Place a small amount of silver epoxy on the header using a sharp tip
3. Position the die on the header. Press the die down using Teflon tweezers and move the die around to ensure no air pockets are trapped. Be careful not to touch epoxy with tweezers.
4. In the vacuum oven, cure the epoxy for 2 hours at 150°C (Power at #7-oven setting)
5. Allow the oven to cool under vacuum. Avoid exposure to air while hot to avoid oxidation of the metal. Overnight cooling is recommended.

DATA ON CHEMICALS

OHMEX-Ag thermosetting silver for Ohmic bonding to semiconductors (Transence Co. Inc.):

- Electrical resistivity: 1E-4 Ohm-cm
- Thermal conductivity: 300 BTU/ft**2/hr/F/in.
- Bond shera strength: 1000psi
- Temperature stability range: -65~275°C