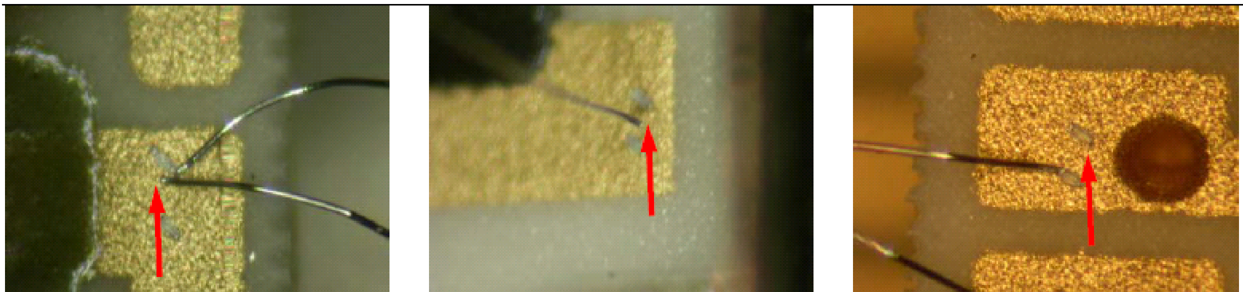
VI VECTRON INTERNATIONAL
A DOVER COMPANY
267 Lowell Road, Hudson, NH 03051 www.vectron.com Tel: 603-598-0070 Fax: 603-5980075

Advisory for the Use of Ultrasonic Cleaning for Vectron Hybrid Product

To Vectron's Customers:

Vectron International receives occasional inquiries from customers regarding the use of ultrasonic cleaning of assembled boards where hybrid microelectronics components may be present. The intent of cleaning is to clean the boards of solder flux residue following the component assembly, e.g. a post-reflow board cleaning. Ultrasonic cleaning requires immersion of the assembled boards in a cleaning solvent in commercially available cleaning equipment where the board is subjected to an ultrasonic power source. Hybrid components, such as those manufactured by Vectron, are typically hermetically sealed in metal or ceramic packaging enclosures and internally utilize substrates with discrete bare IC devices assembled with die & wirebond technique.

Ultrasonic excitation such as during cleaning can potentially excite the wirebonds to their resonant frequencies and result in fatigue damage to the integrity of interconnects. Additionally ultrasonics can also be deleterious causing detachment or mechanical damage to the internal assembly. An example of typical wirebond damage in a hybrid product known to have been subjected to ultrasonic cleaning is shown below.



Examples of missing and detached wirebonds in a hybrid product subjected to ultrasonic cleaning

Vectron does not utilize any type of ultrasonic cleaning during manufacture of hybrid product. Through this advisory Vectron is cautioning users that subjecting Vectron's products to any type of ultrasonic cleaning can result in damage to the product (catastrophic or latent) and the use of this technique, should customers choose to do so, will not be covered by Vectron's warranty provisions in its Terms & Conditions of Sale.

R. Arvikar
Dir. Global Quality & Compliance
Vectron International

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