

Skipped measuring pads after wave soldering

Case

Often one finds after wave soldering that some measuring pads on the solder side of the board were not soldered, while all the joints are soldered well. Although there seems no lack of solderability, due to the good wetting of the surrounding joints, one wonders why these pads seems "unwetttable".

Explanation

The explanation for this can often be found in the shape of the solderresist that surrounds the measuring pad.

If the resist layer have "sharp" edges, the flux, which is normally partly skimmed off from the board surface by the solder wave, will be encapsulated in the solderresist aperture. This flux start to evaporate while the wave comes close to that spot.

This vapour can only escape from the surface of the board, because the measuring pad has no hole or other escape for the flux vapour. During the escape of this flux vapour the wave is covering the pad area, but is unable to reach the measuring pad surface, due to this flux vapour pressure. Also the sharp edges of the resist aperture have a tendency to keep the solder away from the small measuring pad area. This again will not assist the wetting of the measuring pad by the standard main wave.

Solution

To enable the flux vapour to escape more easy, the use of a chip wave is recommended. Due to its turbulences the vapour will be not "closed in" so easy. Also due to the dynamic behavior of the chip wave the wave itself has more wetting power on those areas.

So in case the wetting of such measuring pads is absolutely demanded, it is advised in such cases to use the chip wave to assist for a better escape of the encapsulated flux vapours and so for better wetting.

DISCLAIMER

All content is subject to periodic review and may be changed without notice.
Vitronics Soltec BV assumes no obligation for content contained herein.

COPYRIGHT VITRONICS SOLTEC BV

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of Vitronics Soltec BV. This publication remains the property of Vitronics Soltec BV and may not be passed, loaned or given to any third party.

Vitronics Soltec BV reserves the right to make changes in design and specifications without notice.