



1. Introduction

This application note provides guidelines for wave soldering of SOT89 packages.

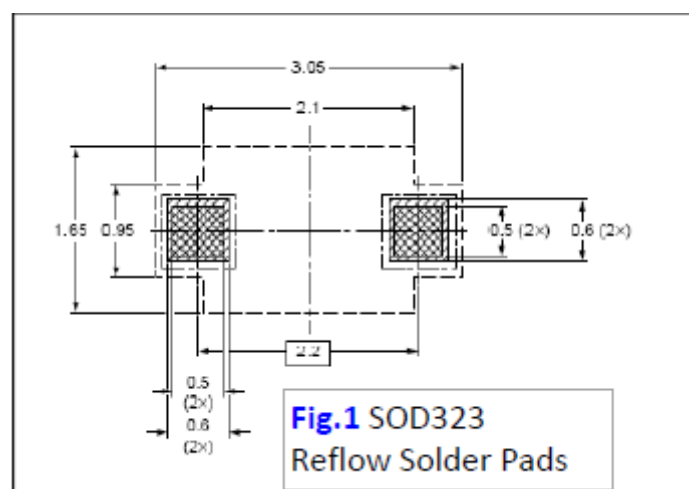
2. General rules

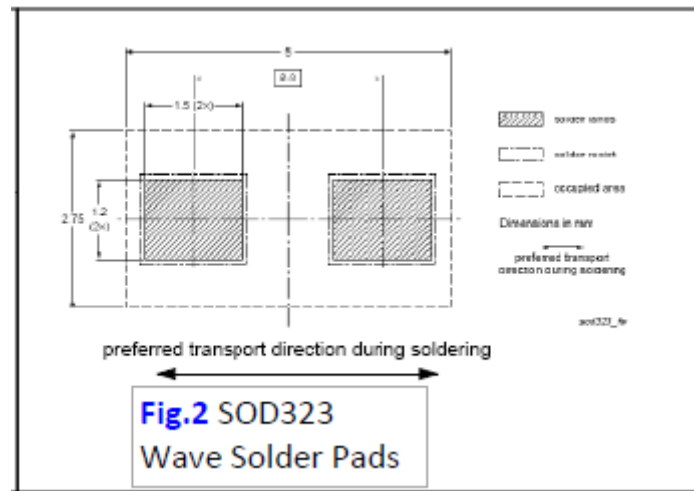
- Wave soldering is usually recommended for gullwing packages.
- Stand-off height of gullwing packages facilitates gluing prior to soldering.
- Flatpack packages have no such space between PCB and plastic which usually means glue can be squeezed out causing inadequate and poor solder quality.
- The smaller the flatpack package the greater the risk of poor solder quality but for the larger SOT89 flatpack, wave soldering - whilst not ideal - is possible.

3. Wave soldering of flatpack packages

3.1 Solder pad dimensions

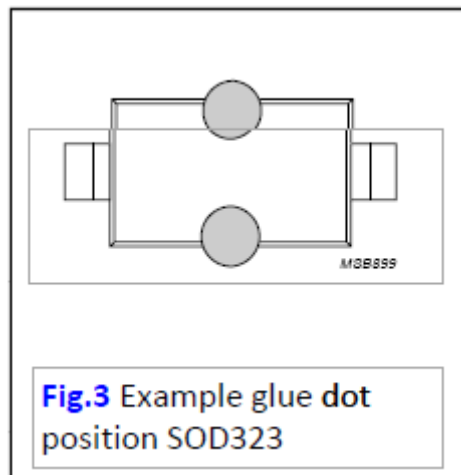
For wave soldering the solder pads must be larger than for reflow soldering. This is because they have to act as solder catchers. The wetting with solder needs to begin from the solder pads and the component leads are wetted from the pads. As an example, the solder land layout recommendations for SOD323 are shown in Fig1 and Fig 2.





3.2 Glue dots

Glue volume should be reduced to a minimum. Two small glue dots should be applied instead of a large dot in the centre of the device. The spacing "P" is 4.4mm.



3.3 PCB design features

To give the glue some room under the plastic body of a flatpack package dummy tracks for the PCB can be designed under this plastic body of the component. The copper track should be etched away and there should be an opening in the solder resist to generate a trench underneath the plastic body. A similar effect can be achieved with non-solder mask-defined (NSMD) tracks. This is a known method to balance surface topography differences of the PCB by designing either normal or dummy tracks underneath a component.

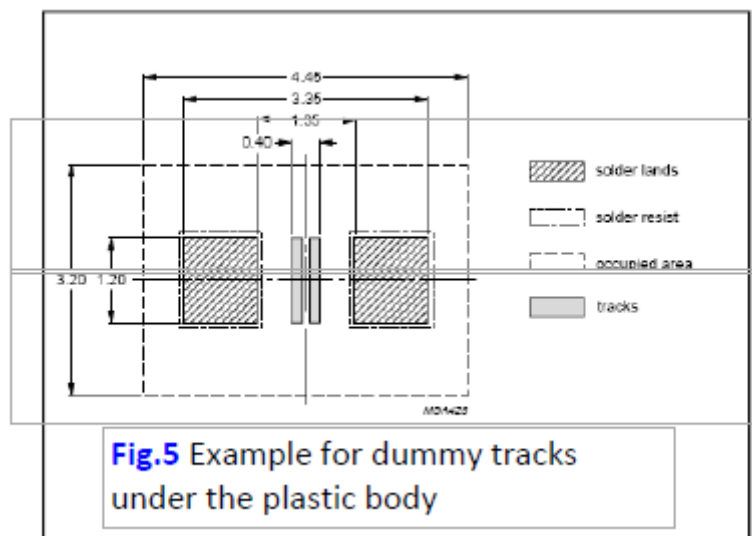
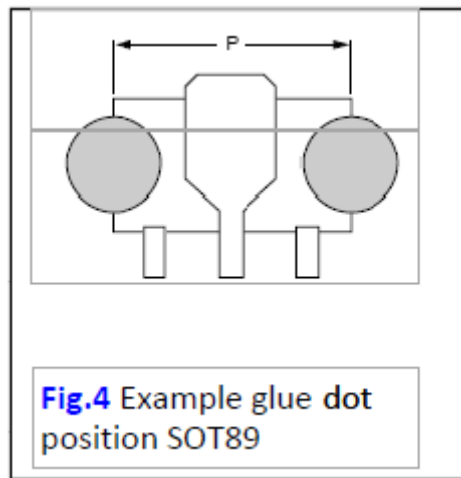


Fig.5 Example for dummy tracks under the plastic body

3.4 Wave soldering for SOT89: solder land and glue dot layout

SOT89

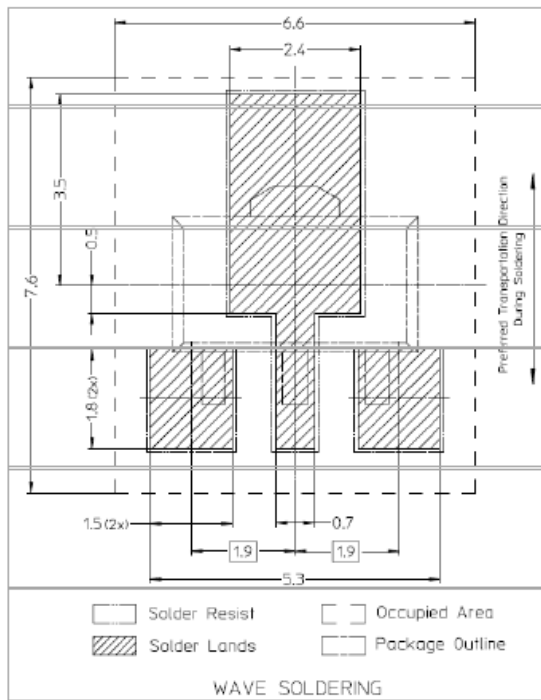


Fig.6 Solder land layout

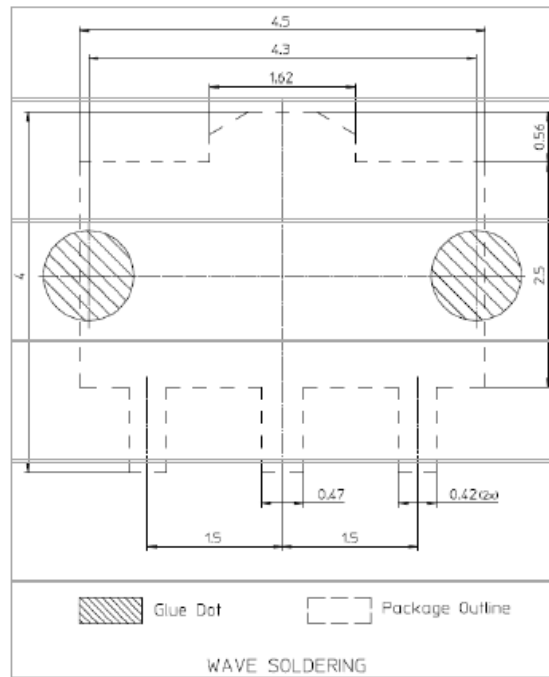


Fig.7 Glue dot layout

Revision history

| Rev | Date | Description |
|-----|----------|--------------------|
| v.1 | 20100801 | initial version |
| v.2 | 20190624 | new company update |
| v.3 | 20190806 | Format update |

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