



NOTE

All numerical values are in metric units. Dimensions are in millimeters. Unless otherwise specified, dimensions have a tolerance of ± 0.13 and angles have a tolerance of $\pm 2^\circ$. Figures and illustrations are for identification only and are not drawn to scale.

1. INTRODUCTION

Board level shielding is widely used for isolating electromagnetic interference, especially on the circuit board with intentional RF emission.

This specification covers the requirements for application of one piece standard board level shield. One-piece design is a close metal shell without sixth side, one-piece shields offer six sides of protection, with the sixth side being the board itself. One-piece designs offer economical shielding protection where access to covered components is not necessary.

Seven kinds of one-piece board level shields are available currently, different recommended footprint to PCB layout for each of them. Basic footprint dimensions are provided in Figure 2.

The one-piece board level shields are designed to be seated onto PC board via manual or robotic machine placement. All standard one-piece board level shields are packaged into emboss.

When corresponding with TE Connectivity Personnel, use the terminology provided in this specification to facilitate your inquiries for information. Basic terms and features of this product are provided in Figure 1.

one-piece Standard board level shield

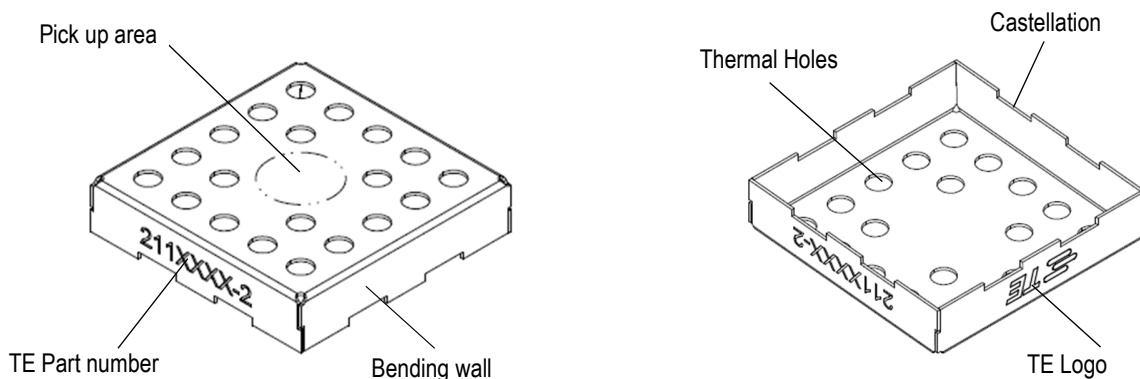


Figure 1

2. REFERENCE MATERIAL

2.1. Revision Summary

Revisions to this application specification include:

- Updated document to corporate requirements.

2.2. Customer Assistance

Reference example Product Base Part Numbers 2118707 and Product Code J650 are representative of these one-piece board level shielding. Use of these numbers will identify the product line and help you to obtain product information when visiting www.te.com or calling the number at the bottom of this page.

2.3. Customer Drawings

Customer drawings for product part numbers are available from www.te.com. Information contained in the customer drawing takes priority.

2.4. Specifications

Product Specification [108-115119](#) provides expected product performance and qualification report [501-115148](#) provides the test results.

3. REQUIREMENTS

3.1. Safety

Do not stack product shipping containers so high that the containers buckle or deform.

3.2. Operating Temperature

The connector is designed to operate in a temperature range of -45° to 85°C.

3.3. Material

The shield is made of made of CRS pre-plated matt tin or aluminum pre-plated matt tin.

3.4. Storage

The product should remain in the shipping containers until it's ready for use to prevent deformation to components. The product should be used on a first in, first out basis to avoid storage contamination that could adversely affect performance.

3.5. PC Board

A. Material and Thickness

The pc board material shall be glass epoxy. The PC board thickness shall be a minimum of 1.40.

B. Tolerance

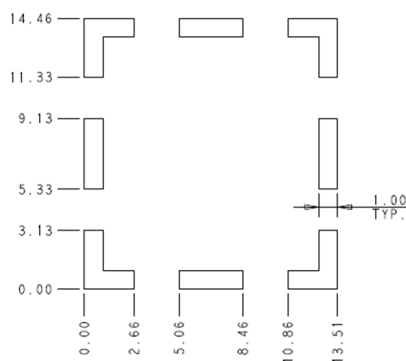
Maximum allowable bow of the board shall be 0.08 Max over the length of the Shield. The coplanarity of the pc board circuit pads must be 0.03.

C. Layout

The PC board pattern for the placement of these board level shields is provided in Figure 2. Datums and basic dimensions are established by the customer. A reference sample of the recommended pc board layout is given in

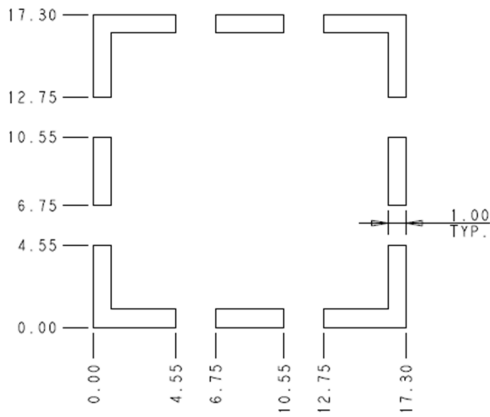
2.

**Recommended PC Board Layout
(One-piece Standard board level shield)**

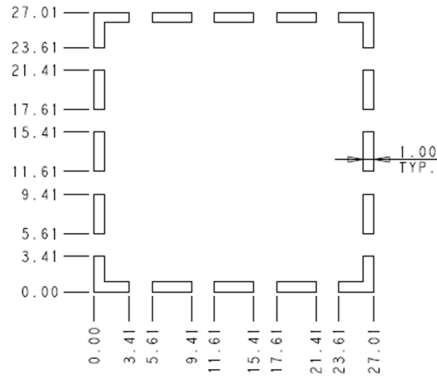


2118706 recommended PCB layouts

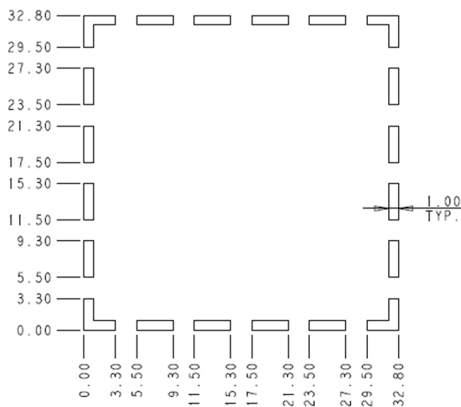
**Recommended PC Board Layout
(One-piece Standard board level shield)**



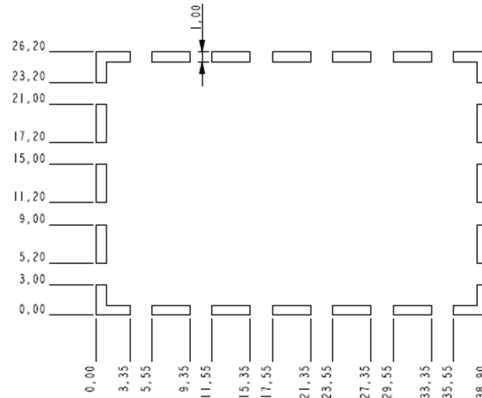
2118707 recommended PCB layouts



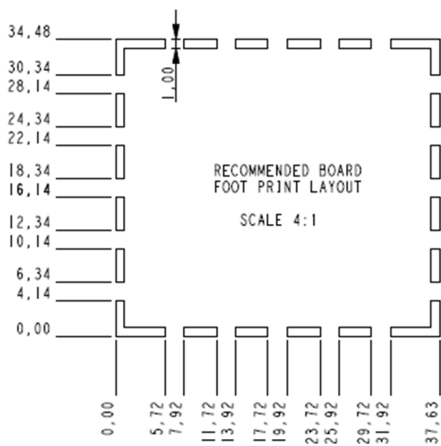
2118708 recommended PCB layouts



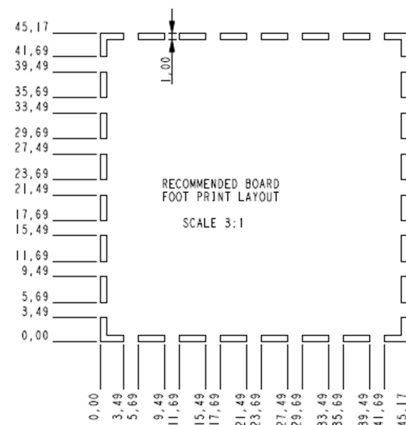
2118709 recommended PCB layouts



2118710 recommended PCB layouts



2118711 recommended PCB layouts



2118712 recommended PCB layouts

Figure 2

3.6. Soldering

A. Process

The shielding must be soldered using reflow or equivalent soldering technique. Reflow temperature and time may vary depending on the size of the PC board and placement of other components. This shielding can be subjected to the reflow temperature and approximate time specified in Figure 33.

B. Cleaning

After soldering, removal of fluxes, residues, and activators is necessary. Consult with the supplier of the solder and flux for recommended cleaning solvents Solder Volume.



DANGER

Consideration must be given to toxicity and other safety requirements recommended by the solvent manufacturer. Refer to the manufacturer's material safety data sheet (MSDS) for characteristics and handling of cleaners. Trichloroethylene and methylene chloride is not recommended because of harmful occupational and environmental effects

C. Drying

Air drying of cleaned connectors is recommended; however, temperature for the connectors should be within -45 and 85°C.

D. Solder Paste Thickness

Solder paste thickness for the connector contact solder tines must be at least 0.125.

E. Stencil

The stencil aperture is determined by the circuit pad size and stencil thickness. It may be any shape as long as it prevents solder bridging from one pad to another. The stencil should be 0.125 thick.

It is recommended that component temperatures not exceed the temperatures and times given in Figure 3.



CAUTION

Excessive temperatures may cause shielding plating deterioration.

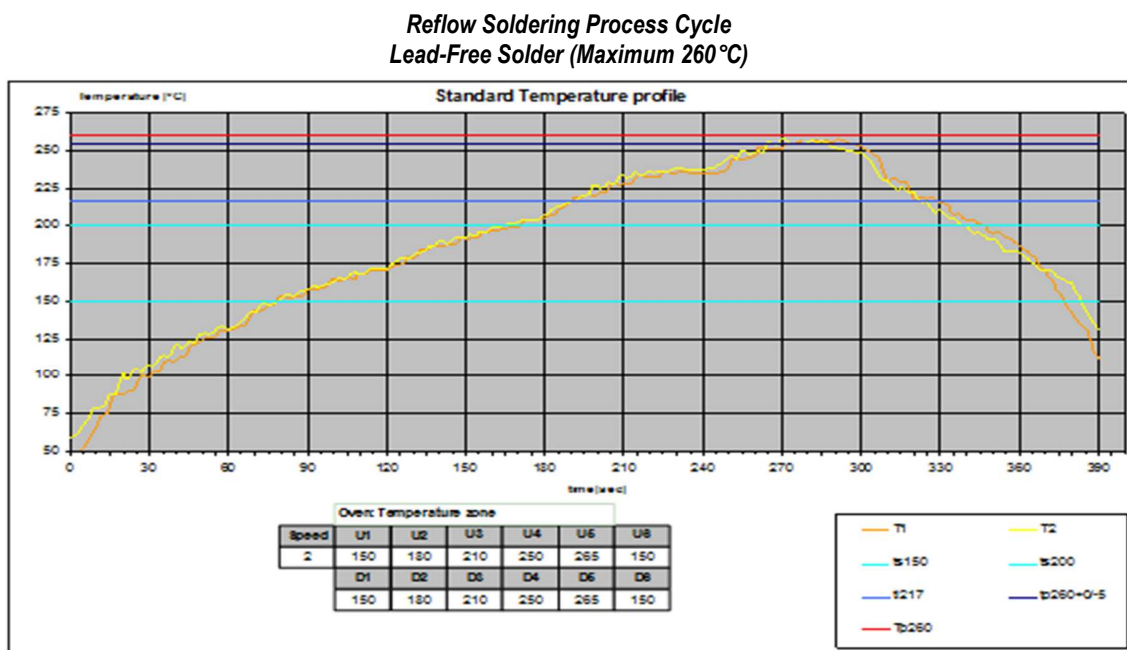


Figure 3 (Cont'd)

3.7. BLS Placement

Each BLS solder tine must be seated on its pc board circuit pad. Optimally, the tines should be centered on the pc board circuit pads; however, slight misalignment is permissible.

3.8. Checking Installed BLS

All solder tines must have 95% minimum coverage over the circuit pad. Solder should attach each stabilizer to the pc board.

3.9. Removal and Repair

Standard de-soldering methods must be used to remove the BLS from the pc board. The BLS must not be re-used after removal. The BLS is not repairable. Defective or damaged product must not be used.

4. TOOLING

For automatic machine placement, the robotic equipment must have a true position accuracy tolerance sufficient to properly locate the BLS.

5. VISUAL AID

The illustration below shows a typical application of one piece standard BLS. This illustration should be used by production personnel to ensure a correctly applied product. Applications which do not appear correct should be inspected using the information in the preceding pages of this specification.

STANDARD ONE PIECE BLS

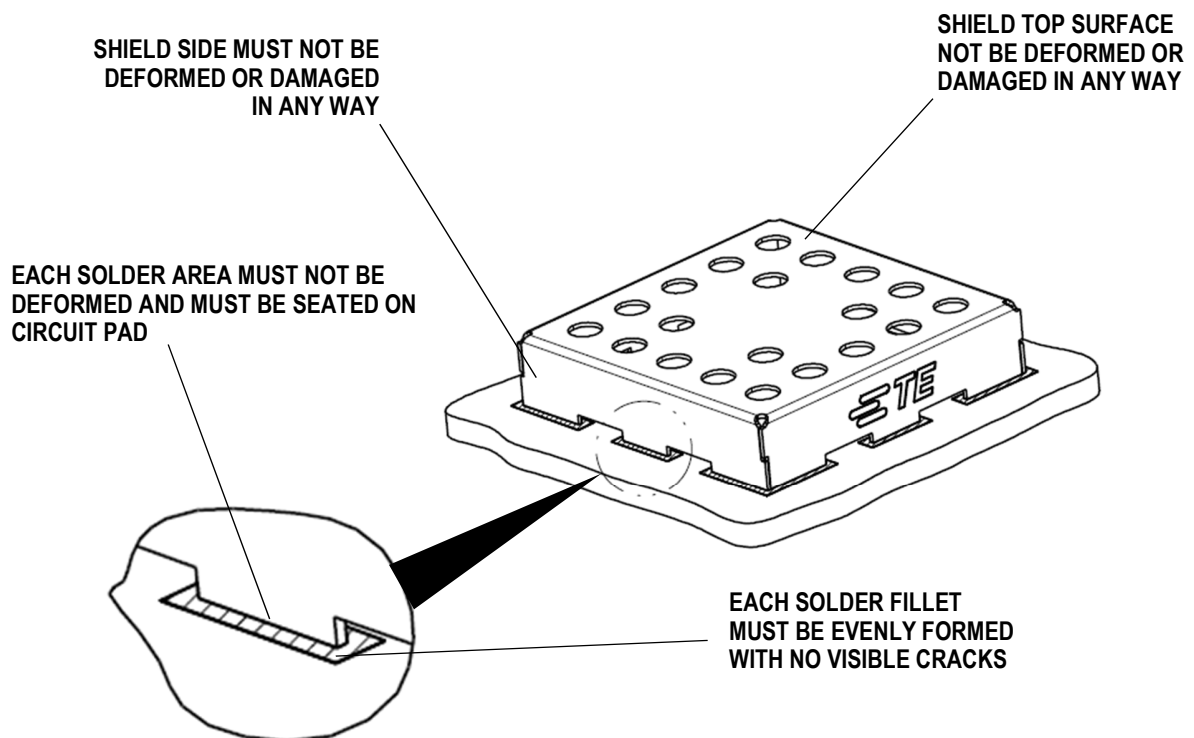


FIGURE 4. VISUAL A