

## Socket, Mini DIMM, 0.60mm Pitch, 244 CKTS, R/A

### 1. INTRODUCTION

This specification covers the requirements for application of Mini DIMM, 244 positions, Right Angled sockets with 0.60mm centerline spacing onto P.C. (printed circuit) boards. These surface mount sockets accept modules per JEDEC MO-244, and are available for module in either standard or reversed orientation.

The sockets may be placed on the P.C. board by hand or by automatic application tooling (typically vacuum pick and place). The sockets are supplied in hard tray form.

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

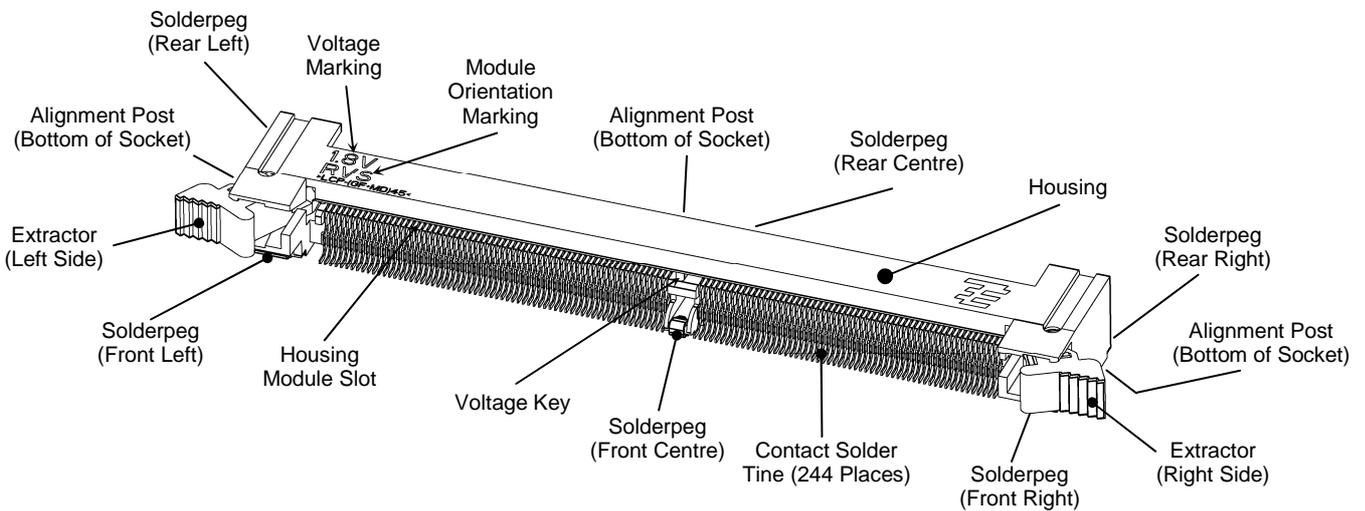


Figure 1

### 2. REFERENCE MATERIAL

#### 2.1. Customer Assistance

Product Drawing Number 1735438 and Product Code L268 are representative of TE Mini DIMM 244-position sockets. Use of these numbers will identify the product line and expedite your inquiries through a TE service network established to help you obtain product and tooling information. Such information can be obtained through a local TE Representative (Field Service Engineer, Field Applications Engineer, etc.) or, after purchase, by calling customer service at the numbers listed in our website ([www.te.com](http://www.te.com)).

## 2.2. Drawings

TE Customer Drawings for product part numbers are available from the service network. The information contained in Customer Drawings and this specification takes priority over any other document available through TE Incorporated. If there is a conflict with the information on the customer drawing and this specification, call customer service at the numbers listed in our website ([www.te.com](http://www.te.com)) for assistance.

## 2.3. Specifications

TE Product Specification 108-51091 provides product performance and test information.

## 2.4. Bulletins

TE Corporate Bulletin 402-40 is available upon request and can be used as a guide to soldering. This bulletin provides information on various flux types and characteristics with the commercial designation and flux removal procedures. A checklist is attached to the bulletin as a guide for information on soldering problems.

# 3. REQUIREMENTS

## 3.1. Material

The socket housing is made of high temperature thermoplastic. The contact is made of copper alloy plated with gold over nickel, and the solder tine is plated with either gold or matte tin over nickel. The solderpeg is made of copper alloy plated with matte tin over nickel.

## 3.2. Storage

The sockets should remain in the shipping containers until ready for use to prevent deformation to the contact solder tines or damage to the housings. The sockets should be used on a first in, first out basis to avoid storage contamination that could adversely affect signal transmissions.

## 3.3. Chemical Exposure

Do not store sockets near any chemical listed below as they may cause stress corrosion cracking in the contact solder tines.

Alkalies	Ammonia	Citrates	Phosphates	Citrates	Sulphur Compounds
Amines	Carbonates	Nitrites	Sulphur	Nitrites	Tartrates

## 3.4. P.C. Board

### A. Material and Thickness

Board material must be glass epoxy (FR-4, G-10, or equivalent). Board thickness must be a minimum of 1.57.

### B. Recommended Layout

Recommended solder circuit pad pattern and pad dimensions, as well as tolerances, are shown in the respective TE Customer Drawing.

**NOTE**

*The alignment post holes on the P.C. board require precise drilling dimensions and the location of the circuit pads to these holes is critical.*

### 3.5. Solder Paste Characteristics

- A. Pb-free solder alloy composition type shall be Sn95.5 Ag3.9 Cu0.6, allowing variation of the Ag content between 3.0-4.0 wt% and Cu content between 0.5-1.0 wt% with the balance being Sn.
- B. Flux incorporated in the paste shall be rosin, mildly active (RMA) type.
- C. Paste will be at least 80% solids by volume.

### 3.6. Solder Paste Thickness

Solder Paste thickness is recommended to be 0.15~0.18mm.

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. Generally, the thinner stencil will need a larger aperture to maintain the given volume of solder paste.

**CAUTION** *All traces must be covered by solder mask in the solder deposit area. Exposed traces could cause bridging and create a short, or wick solder away from the solder tines, producing a weak solder joint.*

### 3.7. Solder Mask

Solder mask is recommended between all pads. If a trace is run between adjacent pads on the solder side of the pc board, a solder mask **MUST** be applied over the trace to prevent bridging and wicking of solder away from the contact solder tines. Additionally, there should be solder mask covering any traces in the area of the solder foot deposit. Liquid photo image-able or dry film solder masks are recommended.

### 3.8. Polarization

The sockets are polarized to the P.C. board by differences in the distances between the three alignment posts.

The module is polarized to the socket by a keying feature (notch) and the corresponding voltage key in the socket. This prevents the module from being oriented incorrectly in the socket.

### 3.9. Socket Placement

#### A. Registration

The socket alignment posts must be placed over their intended P.C. board holes, and placed so that the socket is parallel with the pc board, then gently pressed downward on the socket housing. When handling the sockets, pick them up by the housing only.

#### B. Seating Forces

Because the socket alignment posts are for polarization only (clearance and fit), the force required to seat the socket is minimal. Apply only the force necessary to seat the contact solder tines and each solderpeg into the top surface of the solder paste.

3.10. Soldering

A. Process

The socket is compatible with both infrared reflow and forced convection soldering processes. Additional information on soldering and soldering variables can be found in Corporate Bulletin 402-40.

B. Temperature and Time

Refer to IPC/JEDEC J-STD-020 Table 5-2 and Figure 5-1.

**NOTE** Due to the many variables involved with reflow processes (component density, location, orientation, etc.), it is recommended that the user conduct trial runs under actual manufacturing conditions to ensure product/process compatibility.

**CAUTION** As reflow time increases, the extractor may become yellow, but the quality of the product will not be affected. Excessive temperatures may cause degradation of housing and extractor.

C. Cleaning

Fluxes, residues, and activators must be removed. Cleaning procedures depend on the type of flux used on the solder line. Listed in Figure 2 are cleaning compounds and chemicals that may be used on the sockets for up to five minutes without harmful effects.

Cleaner		Time (Minutes)	TEMPERATURES (Maximum)	
Name	Type		CELSIUS	FAHRENHEIT
Alpha 2110 ♠	Aqueous	1	132	270
Bioact EC-7 ♣	Solvent	5	100	212
Butyl Carbitol ♥	Solvent	1	Room Ambient	
Isopropyl Alcohol	Solvent	5	100	212
Kester 5778 ♦	Aqueous	5	100	212
Kester 5779 ♦	Aqueous	5	100	212
Loncoterge 520 ♥	Aqueous	5	100	212
Loncoterge 530 ♥	Aqueous	5	100	212
Terpene Solvent	Solvent	5	100	212

♠ Product of Fry's Metals, Inc.

♣ Product of Petrolerm, Inc.

♥ Product of Union Carbide Corp.

♦ Product of Litton Systems, Inc.

Figure 2

**DANGER** Consideration must be given to toxicity and safety requirements recommended on the Material Safety Data Sheet furnished by the solvent manufacturer.

D. Drying

When drying cleaned assemblies and P.C. boards, ensure that temperature limitations of -18.1 to +40.6°C are met. Temperature extremes outside this range may cause housing degradation.

### 3.11. Module Assembly and Removal

#### A. Mating Module with Socket

Refer to Figure 3, and proceed as follows:

Push against the steps of both Extractors to rotate outwards. Continue until they are hard stopped against the Housing.

The Socket is now in an opened state, ready to receive the Module.

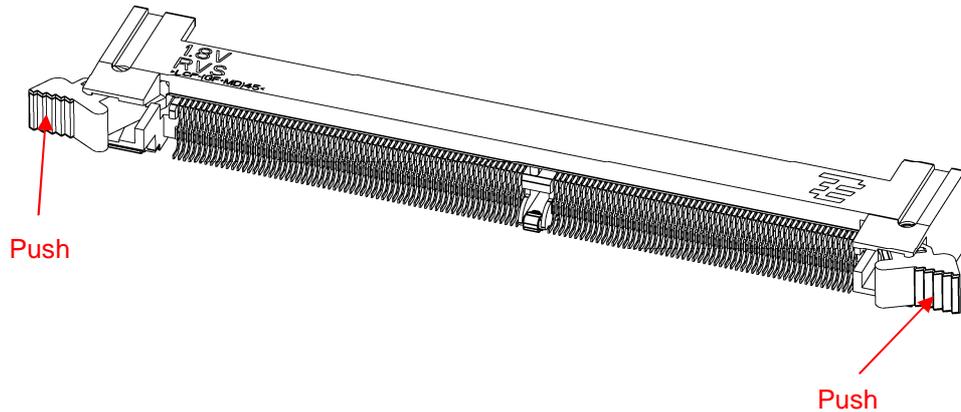


Figure 3

Refer to Figure 4, and proceed as follows:

Check that the Module is of MiniDIMM format per JEDEC MO-244.

Place the Module in front of the Housing and orientate it as indicated by the “Module Orientation Marking” on the Housing.

Make sure the Voltage Keys in the Housing and the Module are aligned.

Firmly hold the Module and insert it into the Housing's Module Slot.

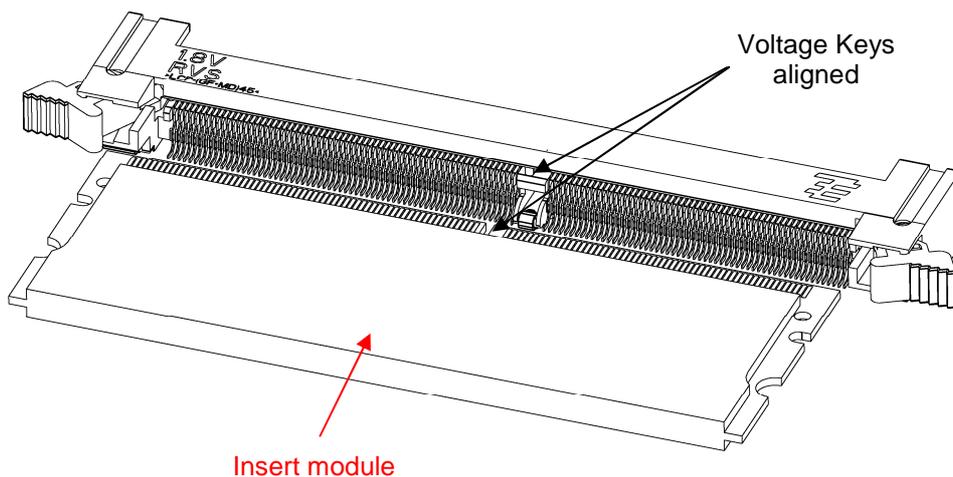


Figure 4

Refer to Figure 5, and proceed as follows:

Both Extractors should automatically rotate inwards during the insertion.

There should be a slight insertion force to engage the module into the contacts

The Module will reach a hard stop in the Housing. The protruding keys in the both Extractors will also fit in the slots by both sides of the Module, indicating that insertion is complete.

The Module is now fully inserted in the Socket.

And the Socket is now in a closed and engaged state.

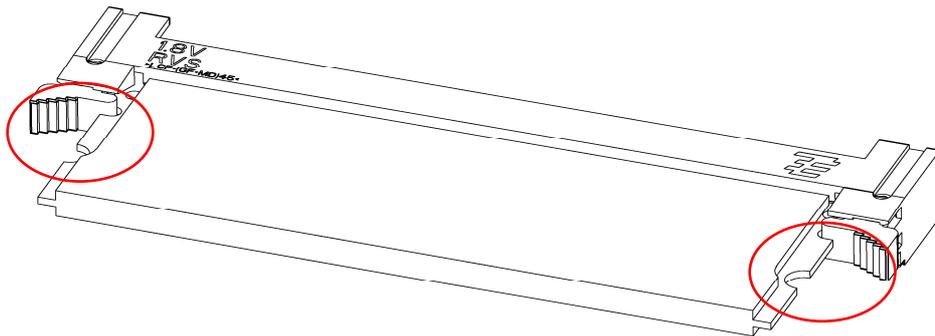


Figure 5

#### B. Module Removal

Refer to Figure 6, and proceed as follows:

Simultaneously push against the steps of both Extractors to rotate them outwards. Continue until they are hard stopped against the Housing.

The Socket is now in an opened state, with the Module disengaged. The Module's voltage key slot should be visibly outside the Housing's Module Slot.

The Module is ready to be removed away from the Socket.

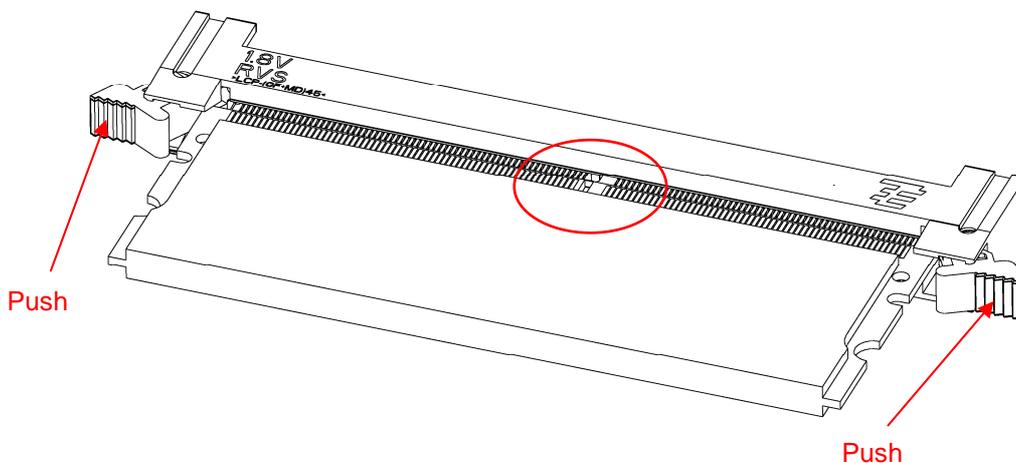


Figure 6

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3.12. Repair

The socket may be removed from the P.C. board by standard de-soldering methods and replaced with a new socket.

**4. QUALIFYING SUPPORT**

TE Mini DIMM 244-position sockets are listed by Underwriters Laboratories Inc. (UL) under File E28476 and have been UL listed to Canadian safety standards.