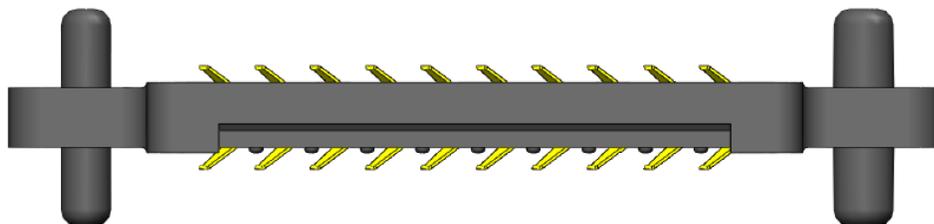
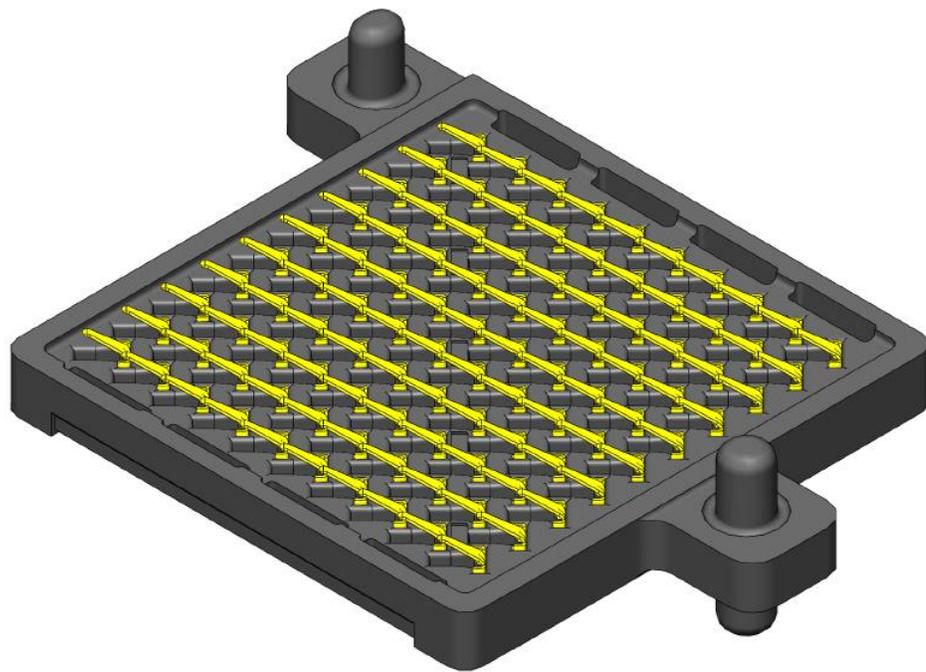


Series: GMI 1.00 mm Low Profile One-Piece Array

**GMI Dual Compression**



See [www.samtec.com](http://www.samtec.com) for more information.

Series: **GMI** 1.00 mm Low Profile One-Piece Array

## 1.0 SCOPE

1.1 This specification covers performance, testing and quality requirements for Samtec's GMI Series 1.00 mm Low Profile One-Piece connectors. All information contained in this specification is for a 1.27 mm mated height, vertical configuration unless otherwise noted.

## 2.0 DETAILED INFORMATION

2.1 Product prints, footprints, catalog pages, test reports and other specific, detailed information can be found at <https://www.samtec.com/products/gmi>.

## 3.0 TESTING

3.1 **Current Rating:** 0.9A (Ten Pos. Powered)

3.2 **Voltage Rating:** 200 VAC

3.3 **Operating Temperature Range:** -55°C to +125°C

3.4 **Operating Humidity Range:** Up to 95% (Per EIA-364-31)

3.5 **Electrical:**

| ITEM                      | TEST CONDITION                                     | REQUIREMENT                                 | STATUS |
|---------------------------|--|---|--------|
| Withstanding Voltage      | EIA-364-20 (No Flashover, Sparkover, or Breakdown) | 600 VAC                                     | Pass   |
| Insulation Resistance     | EIA-364-21 (5000 MΩ minimum)                       | 5,000 MΩ                                    | Pass   |
| Contact Resistance (LLCR) | EIA-364-23   | Δ 15 mΩ maximum (Samtec defined)/ No damage | Pass   |

3.6 **Mechanical:**

| ITEM             | TEST CONDITION  | REQUIREMENT   | STATUS |
|------------------|---|---|--------|
| Durability       | EIA-364-09C   | 100 cycles  | Pass   |
| Random Vibration | EIA-364-28 Condition V, Letter B 7.56 G 'RMS', 50 to 2000 Hz, 2 hours per axis, 3 axis total, PSD 0.04  | Visual Inspection: No Damage<br>LLCR: Δ 15 mΩ maximum | Pass   |
| Mechanical Shock | EIA-364-27 100 G, 6 milliseconds, sawtooth wave, 11.3 fps, 3 shocks/direction, 3 axis (18 total shocks) | Visual Inspection: No Damage<br>LLCR: Δ 15 mΩ maximum | Pass   |
| Normal Force     | EIA-364-04  | 30 grams minimum for gold interface                   | Pass   |

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**3.7 Environmental:**

| ITEM                      | TEST CONDITION  | REQUIREMENT  | STATUS |
|---------------------------|---|--|--------|
| Thermal Shock             | EIA-364-32<br>Thermal Cycles: 100 (30 minute dwell)<br>Hot Temp: 85°C<br>Cold Temp: -55°C<br>Hot/Cold Transition: Immediate                 | Visual Inspection: No Damage<br>LLCR: $\Delta$ 15 m $\Omega$<br>DWV: 600 VAC<br>IR: >45,000 M $\Omega$ | Pass   |
| Thermal Aging (Temp Life) | EIA-364-17<br>Test Condition 4 @ 105°C Condition B for 250 hours  | Visual Inspection: No Damage<br>LLCR: $\Delta$ 15 m $\Omega$<br>DWV: 600 VAC<br>IR: >45,000 M $\Omega$ | Pass   |
| Cyclic Humidity           | EIA-364-31<br>Test Temp: 25°C to 65°C<br>Relative Humidity: 90 to 95%<br>Test Duration: 240 hours   | Visual Inspection: No Damage<br>LLCR: $\Delta$ 15 m $\Omega$<br>DWV: 600 VAC<br>IR: >45,000 M $\Omega$ | Pass   |
| Gas Tight                 | EIA-364-36<br>Gas Exposure: Nitric Acid Vapor<br>Duration: 60 min.<br>Drying Temp.: 50°C +/- 3°C<br>Measurements: Within 1 hour of Exposure | LLCR: $\Delta$ 15 m $\Omega$   | Pass   |

**4.0 HIGH SPEED PERFORMANCE**

**4.1 Channel Simulation – Channel Performance Metric (CPM)**



**Note:** CPM is a channel simulation based approach to understanding connector performance. For further information on CPM, please visit [Introducing Channel Performance](#).

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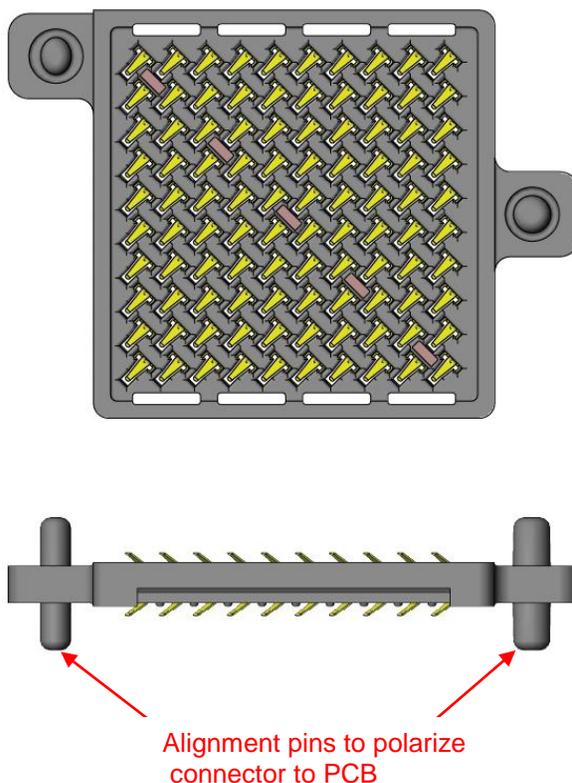
4.2 Empirical Testing - Based on a 3dB insertion loss

| Stack Height | Single-Ended Signaling |         | Differential Pair Signaling |                    |                  |
|--------------|------------------------|---------|-----------------------------|--------------------|------------------|
|              | 1.27mm                 | 1:1 S/G | 2:1 S/G                     | Optimal Horizontal | Optimal Vertical |
| 20 GHz       |                        | 12 GHz  | 20 GHz                      | 20 GHz             | 16.5 GHz         |

4.3 System Impedance: 50 ohm for single-ended and 100 ohm for differential pair

5.0 ALIGNMENT AND HARDWARE

5.1 GMI DUAL COMPRESSION WITH ALIGNMENT HARDWARE



5.2 FOR HARDWARE INFORMATION SEE GMI MATED DOCUMENT

<http://suddendocs.samtec.com/prints/gmi%20mated%20document.pdf>

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## 6.0 Handling:

- 6.1 These connectors are typically packaged in trays which protect the contact beams from damage. They should be handled like any other BGA or IC device.
- 6.2 Avoid resting the connector on the contact beams except during final placement onto the board. Do not touch the contacts and handle only by the edges.
- 6.3 Avoid touching the contact field.
- 6.4 When a partially used tray needs to be stored, use the flat cover from the original shipment or an empty tray to cover connectors. Band trays using flex wrap or rubber bands.
- 6.5 Cleaning the connector and pads with canned air before placement is recommended.

## 7.0 ADDITIONAL RESOURCES

- 7.1 For additional mechanical testing or product information, contact our Customer Engineering Support Group at [CES@samtec.com](mailto:CES@samtec.com)
- 7.2 For additional information on high speed performance testing, contact our Signal Integrity Group at [SIG@samtec.com](mailto:SIG@samtec.com)
- 7.3 For additional processing information, contact our Interconnect Processing Group at [IPG@samtec.com](mailto:IPG@samtec.com).
- 7.4 For RoHS, REACH or other environmental compliance information, contact our Product Environmental Compliance Group at [PEC@samtec.com](mailto:PEC@samtec.com)

### **USE OF PRODUCT SPECIFICATION SHEET**

This Product Specification Sheet (“PSS”) is a brief summary of information related to the Product identified. As a summary, it should only be used for the limited purpose of considering the purchase/use of Product. For specific, detailed information, including but not limited to testing and Product footprint, refer to Section 2.0 of this document and the links there provided to test reports and prints. This PSS is the property of Samtec, Inc. (“Samtec”) and contains proprietary information of Samtec, our various licensors, or both. Samtec does not grant express or implied rights or license under any patent, copyright, trademark or other proprietary rights and the use of the PSS for building, reverse engineering or replication is strictly prohibited. By using the PSS, the user agrees to not infringe, directly or indirectly, upon any intellectual property rights of Samtec and acknowledges that Samtec, our various licensors, or both own all intellectual property therein. The PSS is presented “AS IS”. While Samtec makes every effort to present excellent information, the PSS is only provided as a guideline and does not, therefore, warrant it is without error or defect or that the PSS contains all necessary and/or relevant information about the Product. The user agrees that all access and use of the PSS is at its own risk. **NO WARRANTIES EXPRESSED OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY KIND WHATSOEVER ARE PROVIDED.**



**Series:** GMI 1.00 mm Low Profile One-Piece Array

**Revision:** A

**Date:**

**Revision Notes:** Release Approval

**Approvers**

**Hub Manager/Date:** Joe Smallwood 8/16/18

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