

BergStak[®] 0.80mm Shielded Board to Board Connector

Product Presentation

Amphenol Information Communications
and Commercial Products

 ***FCi Basics***

Amphenol ICC

- Value Proposition
- Product Overview
- Product Specifications
- Features & Benefits
- Part Numbers
- Market Applications
- Collaterals

BergStak[®] 0.80mm Shielded

Value Proposition



- BergStak[®] family is a flexible solution designed for **high speed and high density**, parallel board-to-board applications
- BergStak[®] 0.80mm shielded connector provides superior **EMI / EMC performance**
- The connector is currently offered in **64 positions and 20mm stack height**. Stack heights of 9mm to 20mm with 40 to 140 pos are available upon request
- The guide corner features on receptacle shell offered better **self-alignment** performance for easier mate
- The unique Scoop-proof housing feature of BergStak[®] 0.80mm prevents **reverse mating** preventing terminal damage
- BergStak[®] Shielded 0.80mm is ideal for applications in the **Datacom, Communication, Industry, and Medical**.

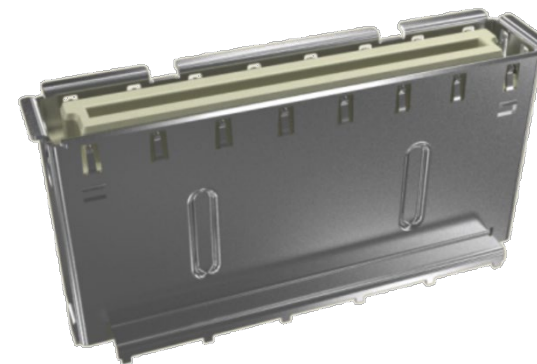
BergStak[®] 0.80mm Shielded

Product Overview

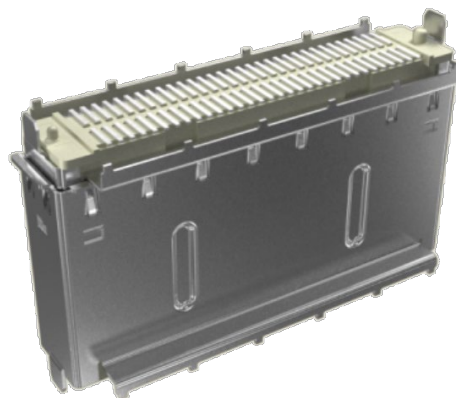
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Header



Receptacle



Combo

BergStak[®] 0.80mm Shielded

Product Specification



Performance Characteristics

- Data rate : 2.5Gb/s (PCIe Gen1) - 9mm to 20mm
8 Gb/s (PCIe Gen3) - 9mm to 12mm
10Gbps (10G Base KR) - 9mm to 12mm
- Durability: 100 cycles
- Mating Force: 0.9N max . per contact
- Un-mating Force: 0.1N min. per contact
- Contact Retention Force: 1N min. per contact
- Current Rating: 0.8A per contact
- Voltage Rating: 100VAC
- Low-level Contact Resistance LLCR : 50mΩ max.
- Insulation Resistance: 1000 MΩ min.
- PCB termination : SMT
- Vertical mating configuration

Materials

- Shell: Stainless steel
- Housing: Glass filled LCP (UL94V-0)
- Terminal base metal
 - Receptacles: Copper Alloy
 - Headers: Copper Alloy

Environmental

- Operating temperature: -40°C ~ 125°C
- High temperature life: 125°C for 96 hours
- Humidity: 90-95% relative for 240 hours
- Mixed Flow Gas: Duration 7 days

Technical Documents

- Product Spec.: GS-12-1599

BergStak[®] 0.80mm Shielded

Features & Benefits

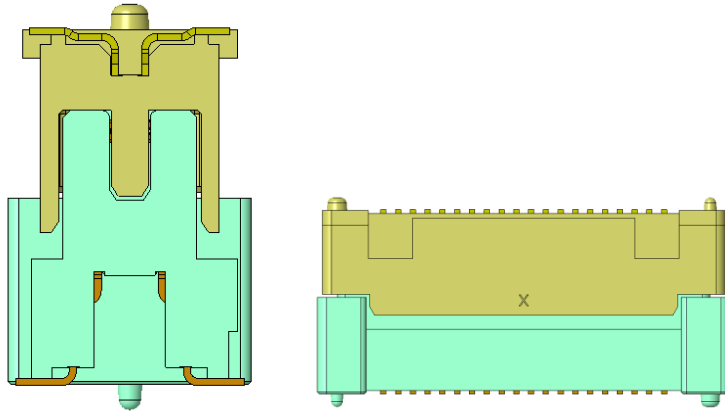


Features	Benefits
EMC shielding feature	Significantly reduced coupling inductance leading to excellent electromagnetic compatibility
64 positions, with 40 to 140 contacts options 20mm stack height, with 9mm to 20mm options	Supports a wide range of applications
Data rate: 2.5Gb/s up to 10Gb/s	Meets PCIe Gen 1 to Gen3 and 10G Base KR standard
Vertical mating configuration	Suitable for parallel board stacker applications
Self-alignment feature	Prevents misalignment delivers consistent reliability and high performance
Scoop-proof housings	Prevents terminal mating damage
UL94V-0 high temperature LCP material	High flammability rating
Locating pegs option available	Enables easy manual assembly
Lead-Free and RoHs compliant	Meets environmental, health and safety requirements

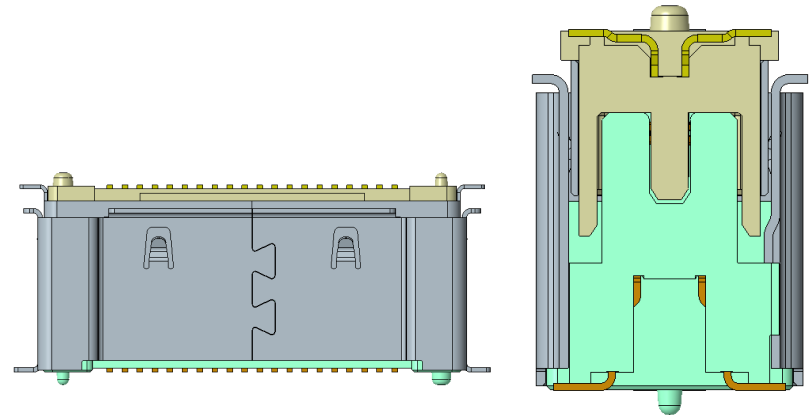
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Design Feature

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V.S



Bergstak[®]

Open Pin fill design structure to support PCIe Gen 3 or below performance.

Width 6.0mm for P1/P2/P3/P4/R1 or
width 6.4mm for R2/R3/R4
Length $0.8 \times \text{positions} / 2 + 5.8\text{mm}$

Bergstak[®] Shielded

Open Pin fill design structure to support PCIe Gen 3 or below performance.

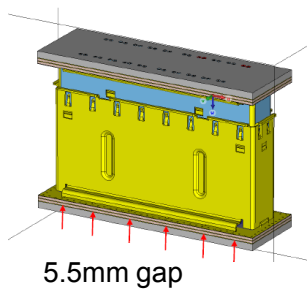
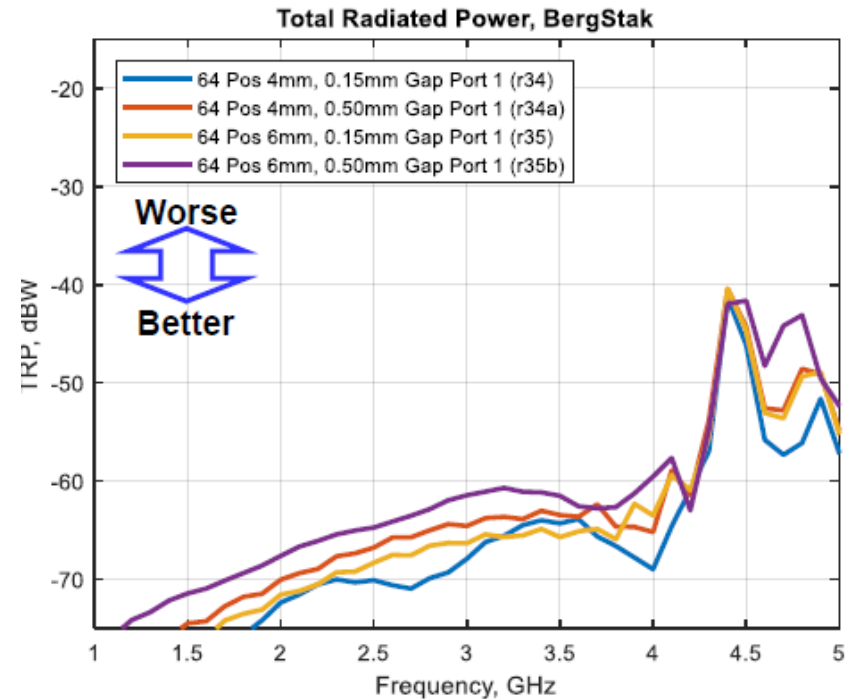
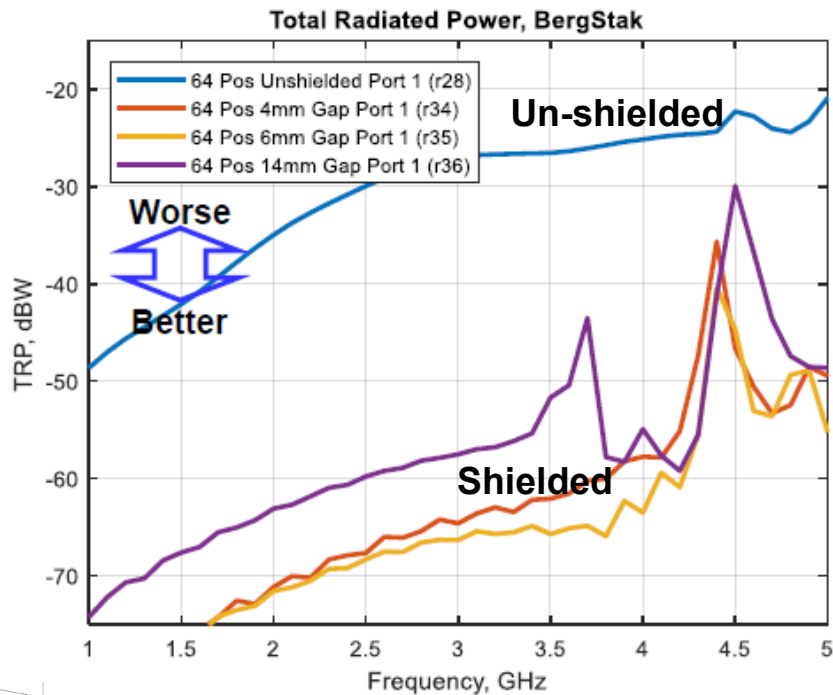
Width 10.435mm for P1/P2/P3/P4
Width 10.45mm for R2/R3/R4
Length $0.8 \times \text{positions} / 2 + 9.4\text{mm}$

Superior EMI protection

BergStak[®] 0.80mm Shielded

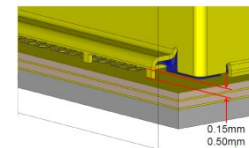
Solution Overview

Compare shielded and un-shielded product



Conclusions:

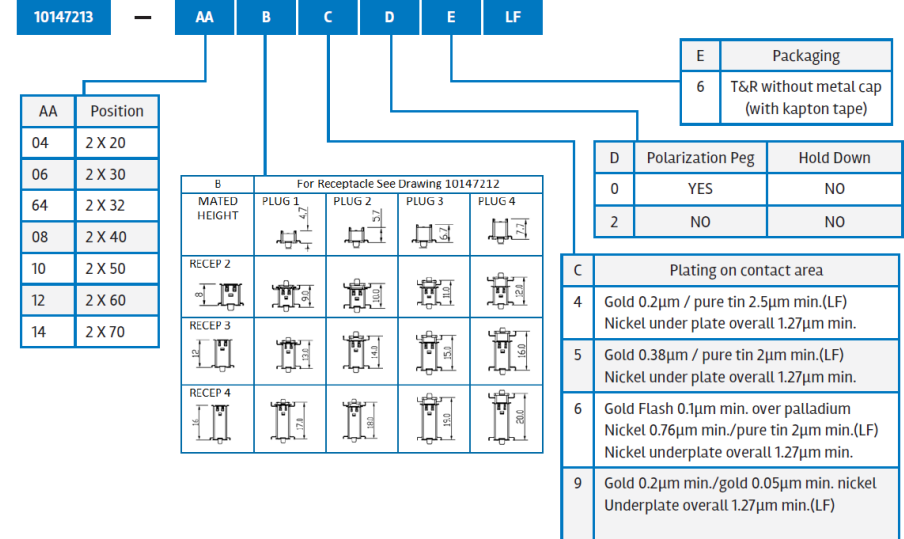
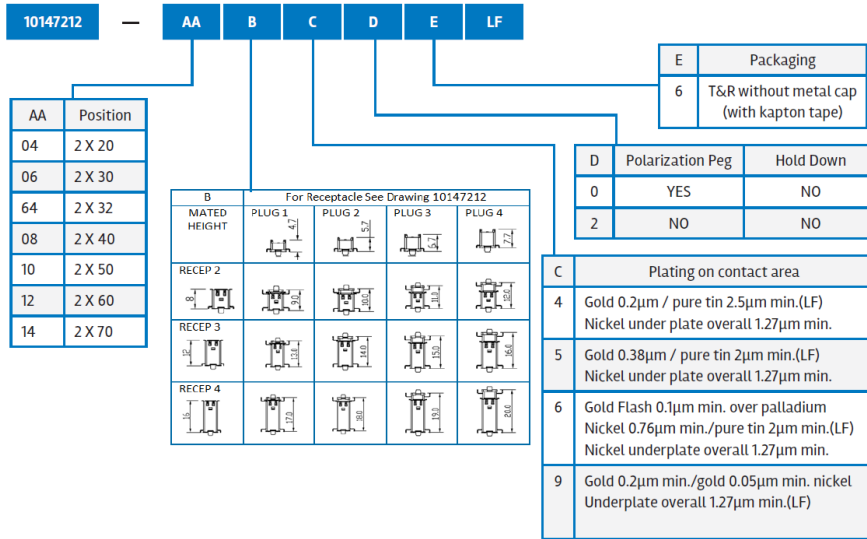
1. The addition of the proposed shield reduces radiated emissions at most frequencies from 20 to 30dB
2. For usage at frequencies below 5GHz, the shield gap between contacts should be kept to 6mm or less for better trace
3. Increasing opening gap above PCB from 0.15mm to 0.5mm to improve airflow and SMT reflow results in 6 to 10dB additional radiation



BergStak® 0.80mm Shielded

Part Number

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Description	Part Numbers
Bergstak® Shielded 0.8mm, Vertical Receptacle , SMT , 64 Positions	10147212-644406LF
Bergstak® Shielded 0.8mm, Vertical Header , SMT , 64 Positions	10147213-644406LF

Remark: More options can be extended according to the market needs

BergStak[®] 0.80mm Shielded

Markets and Applications

FCi Basics

Datacom/Telecom

- Server
- Storage



Communication

- Datacenter
- Fiber Gateway
- 5G CPE



Medical Devices

- MRI Machines
- High Definition Scopes



Industrial & Instrumentation

- Embedded Computer
- Test and Measurement Equipment



- Samples available

- Available on website
 - Drawings
 - 3D Models
 - Datasheet
 - Product specifications
 - Product presentation

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Thank you!