FCI

MEG-ARRAY® MEZZANINE CONNECTOR SYSTEM

High density, BGA design excels at high speed performance and reliability

OVERVIEW

The MEG-Array® Mezzanine Connector system provides the high density and high speed benefits of a large array supported by the reliability and low costs of standard surface mount PCB assembly.

1.27mm x 1.27mm array of discrete circuit contacts allows flexible ground distribution to optimize high speed signal integrity at speeds exceeding 10Gb/s. MEG-Array is offered in a variety of PCB mezzanine stack heights.

FCI's advanced manufacturing supports a patented BGA interconnect design. Multiple in-process vision systems monitor BGA contact integrity including solder sphere size, location and co-planarity plus other critical-to-function attributes.

FEATURES & BENEFITS

- High density, high speed, discrete contact, array connector
  - Flexible ground distribution optimizes high speed signal integrity
  - 10Gb/s differential pair performance with under 1% cross-talk
  - 28Gb/s high speed performance documented for 4mm and 6mm stack height
  - Online s-parameter files and signal integrity performance reports improve design accuracy and time-to-market
  - 1.27mm x 1.27mm grid provides 71 contacts per cm^2 density to save space
  - Dual-point, long wipe contacts

- Wide range of sizes and PCB stack heights increase mechanical design flexibility
  - 6 PCB Stack heights: 4mm to 14mm
  - 8 sizes: 81 to 528 positions

- Revolutionary, trusted BGA interconnect platform
  - High density standard BGA attachment lower assembly costs by using standard SMT processes
  - BGA natural surface tension provides self-alignmen and self-leveling for multiple connector usage
  - Patented BGA contact attachment preserves solder ball positioning
  - Optimized PCB routing enhances electrical performance ball positioning

- Quality and Reliability
  - Time-tested reliability record includes Telcordia GR-1217-CORE and NPS-25298-2 options
  - 22+ year old solder joint reliabiltity per IPC-SM-785
  - 17 Billion + lines shipped to customer satisfaction
  - Precious metal plating options satisfying varying customer needs for environmental resistance

TARGET MARKETS/APPLICATIONS

- Communications
  - Transmission
  - Access
  - Switching
  - Optics
  - Networking

- Data
  - Servers
  - Storage

- I&I
  - Industrial controls & equipment
  - Analytical & diagnostic
  - Medical

MEG–ARRAY® MEZZANINE CONNECTOR SYSTEM

TECHNICAL INFORMATION

MATERIALS

- Housing: Liquid crystal polymer

- Contact: Copper alloy

- SnPb – Solderballs: 63Sn/37Pb Ø 0.76mm

- Pb–Free – Solderballs: 95.5Sn/4Ag/0.5Cu

ELECTRICAL PERFORMANCE

- Current rating:
  · 0.45A / Contact $\leq$ 30°C Δ T (100% Energized)
  · 2.0A < 30°C Δ T (Single contact energized)

- Low level contact resistance: See product specification GS–12–100 for performance results of specific stack heights

- Dielectric withstanding voltage: 2000V AC max.

- Insulation resistance: 1000mΩ min.

- Differential impedance (Z0), Propagation Delay, Near–End Cross–Talk, S21 (insertion loss) and S11 (return loss): For performance of various stack heights, please refer to www.fci.com/megarray

MECHANICAL PERFORMANCE

- Durability: 50, 100, or 200 cycles
  Telcordia GR–1217–CORE, NPS–25298–2 Documents

- Contact Wipe: 0.80mm Nominal

- IPC–SM–785 Solder Joint Reliability: 22.1 year product end–of–life

SPECIFICATIONS

- Product specifications: GS–12–100

- Application specification: GS–20–033

- Meets requirements of Telcordia GR–1217–CORE issue I

- Meets requirements of NPS–25298–2 (25 year life expectancy) (supporting test reports can be obtained at: www.fciconnect.com/highspeed)
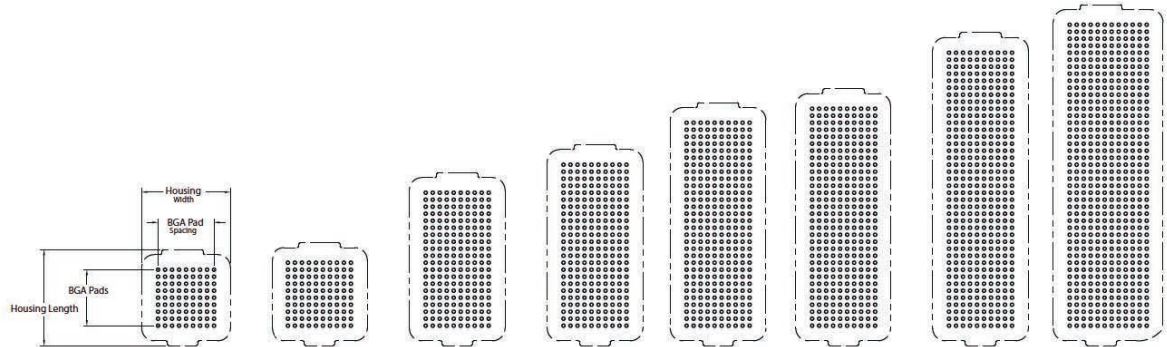
PACKAGING

- Tape and Reel

MORE DATA

- S–Parameter, IGES and ProE files, signal integrity reports and additional information available at: www.fci.com/megarray

- Standard MEG–Array® plugs and receptacles shipped with a cap for product protection and for use by automated pick–and–place equipment

MEG–ARRAY® CONNECTOR SIZES

Feature Description	81 Position (9x9)	100 Position (10x10)	200 Position (10x20)	240 Position (8x30)	300 Position (10x30)	320 Position (10x32)	400 Position (10x40)	528 Position (12x44)
Housing Length	17.43	18.7	31.4	42.3	44.1	46.64	56.8	61.88
Housing Width	16.07	17.34	17.43	14.8	17.34	17.34	17.34	19.88
BGA/Pad Length	10.16	11.43	24.13	36.83	36.83	39.37	49.53	54.61
BGA/Pad Width	10.16	11.43	11.43	8.89	11.43	11.43	11.43	13.97

All dimensions in mm.

MEG–ARRAY® MEZZANINE CONNECTOR SYSTEM

MEG–ARRAY® MATED HEIGHTS – BASE PART NUMBER SELECTOR
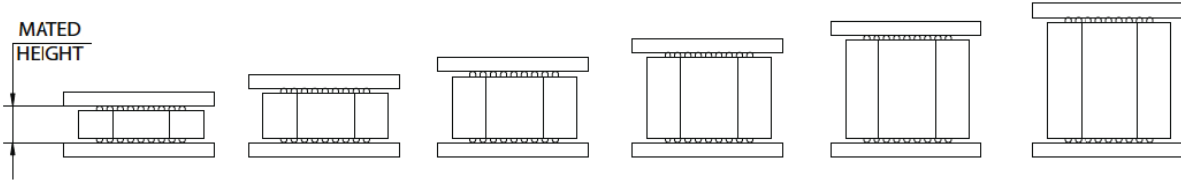
Size	Type	4.0mm	5.5mm	6.0mm	8.0mm	10.0mm	11.5mm	12.0mm	14.0mm
81 Position (9X9)	Plug	55714 0mm							
	Receptacle	55715 4mm							
100 Position (10X10)	Plug	84512 0mm							
	Receptacle	84513 4mm							
200 Position (10X20)	Plug	84516 0mm		84516 0mm	84516 0mm	84530 6mm		84530 6mm	84530 6mm
	Receptacle	84517 4mm		55724 6mm	84535 8mm	84517 4mm		55724 6mm	84535 8mm
240 Position (8X30)	Plug	74213 0mm		74213 0mm					
	Receptacle	74217 4mm		55755 6mm					
300 Position (10X30)	Plug	84500 0mm	84500 0mm		84500 0mm	84578 6mm	84578 6mm		84578 6mm
	Receptacle	84501 4mm	84502 5.5mm		84553 8mm	84501 4mm	84502 5.5mm		84553 8mm
320 Position (10X32)	Plug	10123981 0mm							
	Receptacle	10123982 4mm							
400 Position (10X40)	Plug	84740 0mm		84740 0mm	84740 0mm	84520 6mm		84520 6mm	84520 6mm
	Receptacle	74221 4mm		74388 6mm	74390 8mm	74221 4mm		74388 6mm	74390 8mm
528 Position (12X44)	Plug			10022671 0mm					
	Receptacle			10026846 6mm					

MEG–ARRAY® MEZZANINE CONNECTOR SYSTEM

MEG–ARRAY® INTERCONNECT PART NUMBERS – PLUGS

# Of Positions	Description	Contact Area Finish (In Microinches)	Part Numbers SnPb BGA	RoHS Compliant Pb–Free BGA
81	0mm	15 Au 30 Au 50 Au (Telcordia)	55714–002 55714–102 55714–202	55714–002LF 55714–102LF 55714–202LF
100	0mm	15 Au 30 Au 50 Au (Telcordia)	84512–002 84512–102 84512–202	84512–002LF 84512–102LF 84512–202LF
200	0mm	15 Au 30 Au 50 Au (Telcordia)	84516–002 84516–102 84516–202	84516–002LF 84516–102LF 84516–202LF
	6mm	15 Au 30 Au 50 Au (Telcordia)	84530–002 84530–102 84530–202	84530–002LF 84530–102LF 84530–202LF
240	0mm	15 Au 30 Au 50 Au (Telcordia)	74213–002 74213–102 74213–202	74213–002LF 74213–102LF 74213–202LF
300	0mm	15 Au 30 Au 50 Au (Telcordia)	84500–002 84500–102 84500–202	84500–002LF 84500–102LF 84500–202LF
	6mm	15 Au 30 Au 50 Au (Telcordia)	84578–002 84578–102 84578–202	84578–002LF 84578–102LF 84578–202LF
320	0mm	15 Au 30 Au 50 Au (Telcordia)	10123981–002 10123981–102 10123981–202	10123981–002LF 10123981–102LF 10123981–202LF
400	0mm	15 Au 30 Au 50 Au (Telcordia)	84740–002 84740–102 84740–202	84740–002LF 84740–102LF 84740–202LF
	6mm	15 Au 30 Au 50 Au (Telcordia)	84520–002 84520–102 84520–202	84520–002LF 84520–102LF 84520–202LF
528	0mm	15 Au 30 Au 50 Au (Telcordia)	10022671–002 10022671–102 10022671–202	10022671–002LF 10022671–102LF 10022671–202LF
81	0mm	15 GXT 30 GXT 50 GXT (Telcordia)	55714–092 55714–192 55714–292	55714–092LF 55714–192LF 55714–292LF
100	0mm	15 GXT 30 GXT 50 GXT (Telcordia)	84512–092 84512–192 84512–292	84512–092LF 84512–192LF 84512–292LF

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Please note that the above information is subject to change without notice.

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MEG–ARRAY® INTERCONNECT PART NUMBERS – PLUGS

# Of Positions	Description	Contact Area Finish (In Microinches)	Part Numbers SnPb BGA	RoHS Compliant Pb–Free BGA
200	0mm	15 GXT 30 GXT 50 GXT (Telcordia)	84516–092 84516–192 84516–292	84516–092LF 84516–192LF 84516–292LF
	6mm	15 GXT 30 GXT 50 GXT (Telcordia)	84530–092 84530–192 84530–292	84530–092LF 84530–192LF 84530–292LF
240	0mm	15 GXT 30 GXT 50 GXT (Telcordia)	74213–092 74213–192 74213–292	74213–092LF 74213–192LF 74213–292LF
300	0mm	15 GXT 30 GXT 50 GXT (Telcordia)	84500–092 84500–192 84500–292	84500–092LF 84500–192LF 84500–292LF
	6mm	15 GXT 30 GXT 50 GXT (Telcordia)	84578–092 84578–192 84578–292	84578–092LF 84578–192LF 84578–292LF
320	0mm	15 GXT 30 GXT 50 GXT (Telcordia)	10123981–092 10123981–192 10123981–292	10123981–092LF 10123981–192LF 10123981–292LF
400	0mm	15 GXT 30 GXT 50 GXT (Telcordia)	84740–092 84740–192 84740–292	84740–092LF 84740–192LF 84740–292LF
	6mm	15 GXT 30 GXT 50 GXT (Telcordia)	84520–092 84520–192 84520–292	84520–092LF 84520–192LF 84520–292LF
528	0mm	15 GXT 30 GXT 50 GXT (Telcordia)	10022671–092 10022671–192 10022671–292	10022671–092LF 10022671–192LF 10022671–292LF

MEG–ARRAY® INTERCONNECT PART NUMBERS – AU RECEPTACLES

# Of Positions	Description	Contact Area Finish (In Microinches)	Part Numbers SnPb BGA	RoHS Compliant Pb–Free BGA
81	4mm	15 Au 30 Au 50 Au (Telcordia)	55715–001 55715–101 55715–201	55715–001LF 55715–101LF 55715–201LF
100	4mm	15 Au 30 Au 50 Au (Telcordia)	84513–001 84513–101 84513–201	84513–001LF 84513–101LF 84513–201LF
200	4mm	15 Au 30 Au 50 Au (Telcordia)	84517–001 84517–101 84517–201	84517–001LF 84517–101LF 84517–201LF
	6mm	15 Au 30 Au 50 Au (Telcordia)	55724–001 55724–101 55724–201	55724–001LF 55724–101LF 55724–201LF
	8mm	15 Au 30 Au 50 Au (Telcordia)	84535–001 84535–101 84535–201	84535–001LF 84535–101LF 84535–201LF
240	4mm	15 Au 30 Au 50 Au (Telcordia)	74217–001 74217–101 74217–201	74217–001LF 74217–101LF 74217–201LF
	6mm	15 Au 30 Au 50 Au (Telcordia)	55755–001 55755–101 55755–201	55755–001LF 55755–101LF 55755–201LF
300	4mm	15 Au 30 Au 50 Au (Telcordia)	84501–001 84501–101 84501–201	84501–001LF 84501–101LF 84501–201LF
	5.5mm	15 Au 30 Au 50 Au (Telcordia)	84502–001 84502–101 84502–201	84502–001LF 84502–101LF 84502–201LF
	8mm	15 Au 30 Au 50 Au (Telcordia)	84553–001 84553–101 84553–201	84553–001LF 84553–101LF 84553–201LF
320	4mm	15 Au 30 Au 50 Au (Telcordia)	10123982–001 10123982–101 10123982–201	10123982–001LF 10123982–101LF 10123982–201LF

For more information,
please contact: Communications@fci.com
or visit us at **www.fci.com**

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MEG–ARRAY® INTERCONNECT PART NUMBERS – AU RECEPTACLES

# Of Positions	Description	Contact Area Finish (In Microinches)	Part Numbers SnPb BGA	RoHS Compliant Pb–Free BGA
400	4mm	15 Au 30 Au 50 Au (Telcordia)	74221–001 74221–101 74221–201	74221–001LF 74221–101LF 74221–201LF
	6mm	15 Au 30 Au 50 Au (Telcordia)	74388–001 74388–101 74388–201	74388–001LF 74388–101LF 74388–201LF
	8mm	15 Au 30 Au 50 Au (Telcordia)	74390–001 74390–101 74390–201	74390–001LF 74390–101LF 74390–201LF
528	6mm	15 Au 30 Au 50 Au (Telcordia)	10026846–001 10026846–101 10026846–201	10026846–001LF 10026846–101LF 10026846–201LF

All connectors are supplied with a pre–installed pickup cap.

MEG–ARRAY® INTERCONNECT PART NUMBERS – GXT RECEPTACLES

# Of Positions	Description	Contact Area Finish (In Microinches)	Part Numbers SnPb BGA	RoHS Compliant Pb–Free BGA
81	4mm	15 GXT 30 GXT 50 GXT (Telcordia)	55715–091 55715–191 55715–291	55715–091LF 55715–191LF 55715–291LF
100	4mm	15 GXT 30 GXT 50 GXT (Telcordia)	84513–091 84513–191 84513–291	84513–091LF 84513–191LF 84513–291LF
200	4mm	15 GXT 30 GXT 50 GXT (Telcordia)	84517–091 84517–191 84517–291	84517–091LF 84517–191LF 84517–291LF
	6mm	15 GXT 30 GXT 50 GXT (Telcordia)	55724–091 55724–191 55724–291	55724–091LF 55724–191LF 55724–291LF
	8mm	15 GXT 30 GXT 50 GXT (Telcordia)	84535–001 84535–101 84535–201	84535–091LF 84535–191LF 84535–291LF

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MEG–ARRAY® INTERCONNECT PART NUMBERS – GXT RECEPTACLES

# Of Positions	Description	Contact Area Finish (In Microinches)	Part Numbers SnPb BGA	RoHS Compliant Pb–Free BGA
240	4mm	15 GXT 30 GXT 50 GXT (Telcordia)	74217–091 74217–191 74217–291	74217–091LF 74217–191LF 74217–291LF
	6mm	15 GXT 30 GXT 50 GXT (Telcordia)	55755–091 55755–191 55755–291	55755–091LF 55755–191LF 55755–291LF
300	4mm	15 GXT 30 GXT 50 GXT (Telcordia)	84501–091 84501–191 84501–291	84501–091LF 84501–191LF 84501–291LF
	5.5mm	15 GXT 30 GXT 50 GXT (Telcordia)	84502–091 84502–191 84502–291	84502–091LF 84502–191LF 84502–291LF
	8mm	15 GXT 30 GXT 50 GXT (Telcordia)	84553–091 84553–191 84553–291	84553–091LF 84553–191LF 84553–291LF
320	4mm	15 GXT 30 GXT 50 GXT (Telcordia)	10123982–091 10123982–191 10123982–291	10123982–091LF 10123982–191LF 10123982–291LF
400	4mm	15 GXT 30 GXT 50 GXT (Telcordia)	74221–091 74221–191 74221–291	74221–091LF 74221–191LF 74221–291LF
	6mm	15 GXT 30 GXT 50 GXT (Telcordia)	74388–091 74388–191 74388–291	74388–091LF 74388–191LF 74388–291LF
	8mm	15 GXT 30 GXT 50 GXT (Telcordia)	74390–091 74390–191 74390–291	74390–091LF 74390–191LF 74390–291LF
400	6mm	15 GXT 30 GXT 50 GXT (Telcordia)	10026846–091 10026846–191 10026846–291	10026846–091LF 10026846–191LF 10026846–291LF

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