



(0.50 mm) .0197"

QTH-060-07-F-D-A

QTH-030-01-L-D-A

QTH-090-01-C-D-A

QTH SERIES

# HIGH SPEED GROUND PLANE HEADER

## SPECIFICATIONS

For complete specifications and recommended PCB layouts see [www.samtec.com?QTH](http://www.samtec.com?QTH)

### Insulator Material:

Liquid Crystal Polymer

### Terminal Material:

Phosphor Bronze

Plating: Au or Sn over

50µ" (1.27 µm) Ni

### Current Rating:

Contact:

2 A per pin

(1 pin powered per row)

Ground Plane:

25 A per ground plane

(1 ground plane powered)

### Operating Temp Range:

-55°C to +125°C

### Voltage Rating:

125 VAC (5 mm Stack Height)

Max Cycles: 100

RoHS Compliant: Yes

## Processing:

Lead-Free Solderable: Yes

### SMT Lead Coplanarity:

(0.10 mm) .004" max (030-060)

(0.15 mm) .006" max (090)

### Board Stacking:

For applications requiring more than two connectors per board contact [ipg@samtec.com](mailto:ipg@samtec.com)

### Board Mates:

QSH

### Cable Mates:

HQCD, HQDP

(See Also Available note)

EXTENDED LIFE PRODUCT

10 year Mixed Flowing Gas with 50µ" Gold  
Call Samtec for maximum mated cycles

Integral metal plane for  
power or ground

Standard Stack Heights  
from 5 mm to 25 mm

**Protocols  
Supported**

100 GbE  
Hypertransport™  
XAUI  
PCI Express®  
SATA  
InfiniBand™

Download app notes at  
[www.samtec.com/appnote](http://www.samtec.com/appnote)  
Contact SIG @ samtec.com  
for questions on protocols

| QTH/QSH<br>5 mm Stack Height | Type | Rated @ 3dB Insertion Loss |                    |
|------------------------------|------|----------------------------|--------------------|
|                              |      | with PCB effects*          | w/o PCB effects**  |
| Single-Ended Signaling       | -D   | 9 GHz / 18 Gbps            | 9.5 GHz / 19 Gbps  |
| Differential Pair Signaling  | -D   | 8 GHz / 16 Gbps            | 10.5 GHz / 21 Gbps |
| Differential Pair Signaling  | -DP  | 9.5 GHz / 19 Gbps          | 16.5 GHz / 33 Gbps |

\*Performance data includes effects of a non-optimized PCB.

\*\*Test board losses de-embedded from performance data.

Performance data for other stack heights and complete test data  
available at [www.samtec.com?QTH](http://www.samtec.com?QTH) or contact [sig@samtec.com](mailto:sig@samtec.com)

**Finalinch**  
CERTIFIED

**28+**  
Gbps

## RECOGNITIONS

For complete scope of  
recognitions see  
[www.samtec.com/quality](http://www.samtec.com/quality)

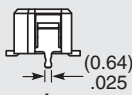
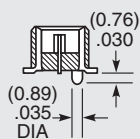
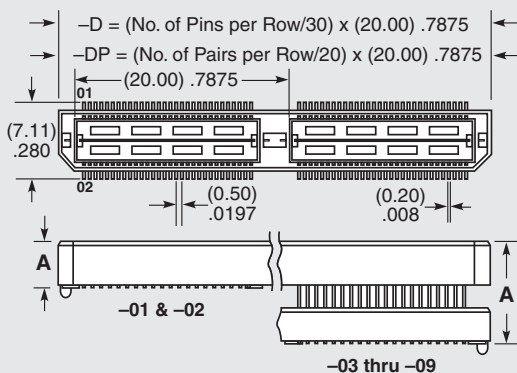


## ALSO AVAILABLE (MOQ Required)

- 15 mm, 22 mm and 30 mm stack height (Caution: Some automatic placement/inspection machines may have component height restrictions. Please consult machinery specifications.)
  - 30µ" (0.76 µm) Gold (Specify -H plating for Data Rate cable mating applications.)
  - Edge Mount & Guide Posts
  - 80 (-DP), 120, 150 positions per row
  - Retention Option
- Contact Samtec.

| QTH                  | PINS PER ROW<br>NO. OF PAIRS                      | LEAD<br>STYLE                             | PLATING<br>OPTION                                                                                                                                                                                                                                                                            | TYPE                                       | A | OTHER<br>OPTION                                                                                               |
|----------------------|---------------------------------------------------|-------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|---|---------------------------------------------------------------------------------------------------------------|
|                      | -030, -060, -090<br>(60 total pins per bank = -D) | Specify<br>LEAD<br>STYLE<br>from<br>chart | -F<br>= Gold Flash on<br>Signal Pins and<br>Ground Plane,<br>Matte Tin on tails                                                                                                                                                                                                              | -D<br>= Single-Ended                       |   | -K<br>= (7.00 mm)<br>.275" DIA<br>Polyimide<br>film Pick &<br>Place Pad<br>(N/A with -05 &<br>-07 lead style) |
|                      | -020, -040, -060<br>(20 pairs per bank = -D-DP)   |                                           | -L<br>= 10µ" (0.25 µm)<br>Gold on Signal Pins<br>and Ground Plane,<br>Matte Tin on tails                                                                                                                                                                                                     | -D-DP<br>= Differential Pair<br>(-01 only) |   | -TR<br>= Tape & Reel<br>(-090 positions<br>maximum)                                                           |
|                      |                                                   |                                           | -C*<br>= Electro-Polished<br>Selective<br>50µ" (1.27 µm) min Au<br>over 150µ" (3.81 µm)<br>Ni on Signal Pins in<br>contact area,<br>10µ" (0.25 µm) min Au<br>over 50µ" (1.27 µm)<br>Ni on Ground Plane<br>in contact area,<br>Matte Tin over 50µ"<br>(1.27 µm) min Ni<br>on all solder tails |                                            |   | -L<br>= Latching<br>Option<br>(-01 lead<br>style only)<br>(N/A on<br>-060 (-D-DP)<br>& -090)                  |
| QTH<br>LEAD<br>STYLE | A                                                 | HEIGHT<br>WITH<br>QSH*                    |                                                                                                                                                                                                                                                                                              |                                            |   |                                                                                                               |
| -01                  | (4.27)<br>.168                                    | (5.00)<br>.197                            |                                                                                                                                                                                                                                                                                              |                                            |   |                                                                                                               |
| -02                  | (7.26)<br>.286                                    | (8.00)<br>.315                            |                                                                                                                                                                                                                                                                                              |                                            |   |                                                                                                               |
| -03                  | (10.27)<br>.404                                   | (11.00)<br>.433                           |                                                                                                                                                                                                                                                                                              |                                            |   |                                                                                                               |
| -04                  | (15.25)<br>.600                                   | (16.00)<br>.630                           |                                                                                                                                                                                                                                                                                              |                                            |   |                                                                                                               |
| -05                  | (18.26)<br>.718                                   | (19.00)<br>.748                           |                                                                                                                                                                                                                                                                                              |                                            |   |                                                                                                               |
| -07                  | (24.24)<br>.954                                   | (25.00)<br>.984                           |                                                                                                                                                                                                                                                                                              |                                            |   |                                                                                                               |
| -09                  | (13.26)<br>.522                                   | (14.00)<br>.551                           |                                                                                                                                                                                                                                                                                              |                                            |   |                                                                                                               |

\*Processing conditions will affect mated height.



\*Note: -C Plating passes 10 year MFG testing

Note: Some lengths, styles  
and options are non-standard,  
non-returnable.

## OTHER SOLUTIONS

- Board Spacing Standoffs.  
See SO Series.