



(0.80 mm) .0315"

QTE SERIES

# HIGH SPEED GROUND PLANE HEADER

## SPECIFICATIONS

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

**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:

23 A per ground plane

(1 ground plane powered)

**Operating Temp Range:**

-55°C to +125°C

**Voltage Rating:**

225 VAC mated with QSE

& 5 mm Stack Height

**Max Cycles:** 100

**RoHS Compliant:** Yes

## Processing:

**Lead-Free Solderable:** Yes

**SMT Lead Coplanarity:**

(0.10 mm) .004" max (020-060)

**Board Stacking:**

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

## Board Mates:

QSE

## Cable Mates:

EQCD, EQDP, EQRF

(See Also Available note)



| QTE/QSE<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 GHz / 18 Gbps    |
| Differential Pair Signaling  | -D   | 8 GHz / 16 Gbps            | 14 GHz / 28 Gbps   |
| Differential Pair Signaling  | -DP  | 8.5 GHz / 17 Gbps          | 13.5 GHz / 27 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/QTE](http://www.samtec.com/QTE) or contact [sig@samtec.com](mailto:sig@samtec.com)

Integral metal plane  
for power or ground

Standard stack heights  
from 5 mm to 25 mm

Protocols  
Supported

100 GbE

XAUI

PCI Express®

SATA

MGT (Rocket I/O)

InfiniBand™

Download app notes at:

[www.samtec.com/appnote](http://www.samtec.com/appnote)

Contact SIG @ samtec.com

for questions on protocols

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
  - 56 (-DP), 80, 100 positions per row
  - Guide Posts, Screw Down & Friction Lock
  - Retention Option
- Contact Samtec.

| QTE                  | PINS PER ROW<br>NO. OF PAIRS                                                                                           | LEAD<br>STYLE                             | PLATING<br>OPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | TYPE                                                                                 | A                                                                                                                                                                                                                                             | OTHER<br>OPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                      |   |                        |     |                |                |     |                |                |     |                 |                 |     |                 |                 |     |                 |                 |     |                 |                 |     |                 |                 |
|----------------------|------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|---|------------------------|-----|----------------|----------------|-----|----------------|----------------|-----|-----------------|-----------------|-----|-----------------|-----------------|-----|-----------------|-----------------|-----|-----------------|-----------------|-----|-----------------|-----------------|
|                      | <b>-020, -040, -060</b><br>(40 total pins per bank = -D)<br><br><b>-014, -028, -042</b><br>(14 pairs per bank = -D-DP) | Specify<br>LEAD<br>STYLE<br>from<br>chart | <b>-F</b><br>= Gold Flash<br>on Signal Pins and<br>Ground Plane,<br>Matte Tin on tails<br><br><b>-L</b><br>= 10µ" (0.25 µm)<br>Gold on Signal Pins<br>and Ground Plane,<br>Matte Tin on tails<br><br><b>-C*</b><br>= Electro-Polished<br>Selective<br>50µ" (1.27 µm) min<br>Au over 150µ"<br>(3.81 µm) Ni on Signal<br>Pins in contact area,<br>10µ" (0.25 µm) min Au<br>over 50µ" (1.27 µm) Ni<br>on Ground Plane<br>in contact area,<br>Matte Tin over 50µ"<br>(1.27 µm) min Ni on<br>all solder tails | <b>-D</b><br>= Single-Ended<br><br><b>-D-DP</b><br>= Differential Pair<br>(-01 only) | <b>-K</b><br>= (7.00 mm)<br>.275" DIA<br>Polyimide<br>Film Pick &<br>Place Pad<br><br><b>-TR</b><br>= Tape & Reel<br>Packaging<br>(N/A -05 & -07<br>lead style)<br><br><b>-L</b><br>= Latching<br>Option<br>(N/A on -042 &<br>-060 positions) | <table border="1"> <thead> <tr> <th>QTE<br/>LEAD<br/>STYLE</th> <th>A</th> <th>HEIGHT<br/>WITH<br/>QSE*</th> </tr> </thead> <tbody> <tr> <td>-01</td> <td>(4.27)<br/>.168</td> <td>(5.00)<br/>.197</td> </tr> <tr> <td>-02</td> <td>(7.26)<br/>.286</td> <td>(8.00)<br/>.315</td> </tr> <tr> <td>-03</td> <td>(10.27)<br/>.404</td> <td>(11.00)<br/>.433</td> </tr> <tr> <td>-04</td> <td>(15.25)<br/>.600</td> <td>(16.00)<br/>.630</td> </tr> <tr> <td>-05</td> <td>(18.26)<br/>.718</td> <td>(19.00)<br/>.748</td> </tr> <tr> <td>-07</td> <td>(24.24)<br/>.954</td> <td>(25.00)<br/>.984</td> </tr> <tr> <td>-09</td> <td>(13.26)<br/>.522</td> <td>(14.00)<br/>.551</td> </tr> </tbody> </table> <p>*Processing conditions will affect mated height.</p> | QTE<br>LEAD<br>STYLE | A | HEIGHT<br>WITH<br>QSE* | -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 |
| QTE<br>LEAD<br>STYLE | A                                                                                                                      | HEIGHT<br>WITH<br>QSE*                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                      |                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                      |   |                        |     |                |                |     |                |                |     |                 |                 |     |                 |                 |     |                 |                 |     |                 |                 |     |                 |                 |
| -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                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                      |                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                      |   |                        |     |                |                |     |                |                |     |                 |                 |     |                 |                 |     |                 |                 |     |                 |                 |     |                 |                 |

**\*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

