



(0.80 mm) .0315"

QSE SERIES

# HIGH SPEED GROUND PLANE SOCKET

## SPECIFICATIONS

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

### Insulator Material:

Liquid Crystal Polymer

### Terminal Material:

Phosphor Bronze

### Plating:

Au or Sn over

50µ" (1.27 µm) Ni

### Current Rating:

Contacts:

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 (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:

QTE

### 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?QSE](http://www.samtec.com?QSE) or contact [sig@samtec.com](mailto:sig@samtec.com)

Blade &  
Beam  
Design

Integral metal plane  
for power or ground

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

**Final** **inch**  
C E R T I F I E D

28+  
Gbps

## RECOGNITIONS

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



FILE NO. E111594

FILE NO. 090871\_0\_000

## 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 and Friction Lock options.
  - Retention Option
- Contact Samtec.

**QSE** — **PINS PER ROW NO. OF PAIRS** — **01** — **PLATING OPTION** — **TYPE** — **A** — **OTHER OPTION**

—020, —040, —060  
(40 total pins per bank = -D)

—014, —028, —042  
(14 pairs per bank = -D-DP)

—F  
= Gold Flash on  
Signal Pins and  
Ground Plane, Matte  
Tin on tails

—L  
= 10µ" (0.25 µm) Gold  
on Signal Pins  
and Ground Plane,  
Matte Tin on tails

—C\*  
= Electro-Polished  
Selective  
50µ" (1.27 µm) min  
Au over 150µ"  
(3.81 µm) Ni on Signal  
Pins in contact area,  
10µ" (0.25 µm) min  
Au over 50µ" (1.27 µm)  
Ni on Ground Plane  
in contact area,  
Matte Tin over 50µ"  
(1.27 µm) min Ni on  
all solder tails

—D  
= Single-  
Ended

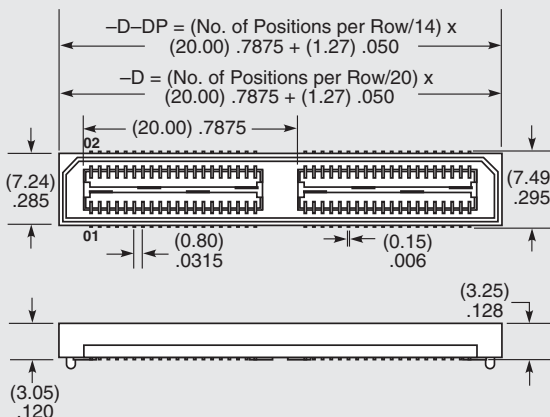
—D-DP  
= Differential  
Pair  
(-01 only)

—GP  
= Guide Post  
(-020 only)

—K  
= (8.25 mm) .325"  
DIA Polyimide  
Film Pick &  
Place Pad

—TR  
= Tape & Reel  
Packaging

—L  
= Latching Option  
(N/A on -042  
& -060 positions)



| QTE<br>LEAD<br>STYLE | MATED<br>HEIGHT<br>WITH QSE* |
|----------------------|------------------------------|
| —01                  | (5.00) .197                  |
| —02                  | (8.00) .315                  |
| —03                  | (11.00) .433                 |
| —04                  | (16.00) .630                 |
| —05                  | (19.00) .748                 |
| —07                  | (25.00) .984                 |
| —09                  | (14.00) .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