



(0.50 mm) .0197"

QSH-060-01-L-D-DP-A

QSH-060-01-L-D-A-K

QSH-030-01-F-D-A

QSH SERIES

HIGH SPEED GROUND PLANE SOCKET

SPECIFICATIONS

For complete specifications and recommended PCB layouts see www.samtec.com?QSH

Insulator Material:

Liquid Crystal Polymer

Contact 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:

175 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

Board Mates:

QTH

Cable Mates:

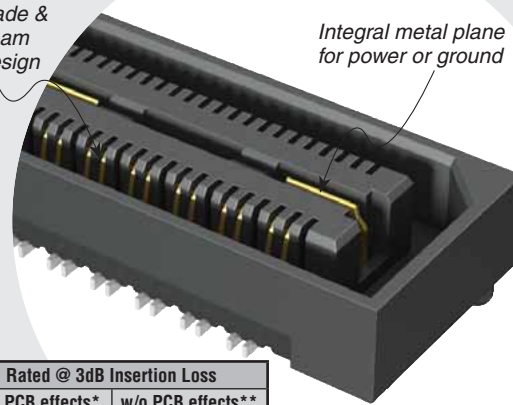
HQCD, HQDP

(See Also Available note)



Blade & Beam Design

Integral metal plane for power or ground



Protocols Supported

100 GbE

Hypertransport™

XAUI

PCI Express®

SATA

InfiniBand™

Download app notes at

www.samtec.com/appnote

Contact SIG @ samtec.com

for questions on protocols

QTH/QSH 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?QSH or contact sig@samtec.com

Finalinch®
CERTIFIED

28+
Gbps

RECOGNITIONS

For complete scope of recognitions see www.samtec.com/quality



FILE NO. E111594 FILE NO. 090571_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 & Guide Posts
- 80 (-DP), 120, 150 positions per row
- Retention Option
- Contact Samtec.

QSH	PINS PER ROW NO. OF PAIRS	01	PLATING OPTION	TYPE	A	OTHER OPTION																
-030, -060, -090 (60 total pins per bank = -D) -020, -040, -060 (20 pairs per bank = -D-DP) -D = (No. of Pins per Row/30) x (20.00) .7875 + (1.27) .050 -DP = (No. of Pairs per Row/20) x (20.00) .7875 + (1.27) .050 -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) -K = (8.25 mm) .325" DIA Polyimide Film Pick & Place Pad -TR = Tape & Reel (-090 positions maximum) -L = Latching Option (Not available on -060 (-D-DP) & -090 positions)																						
Diagram showing dimensions for -D and -DP configurations. Dimensions: (7.49) .295, (0.50) .0197, (0.15) .006, (3.05) .120, (3.25) .128		<table border="1"> <thead> <tr> <th>QTH LEAD STYLE</th> <th>MATED HEIGHT WITH QSH*</th> </tr> </thead> <tbody> <tr> <td>-01</td> <td>(5.00) .197</td> </tr> <tr> <td>-02</td> <td>(8.00) .315</td> </tr> <tr> <td>-03</td> <td>(11.00) .433</td> </tr> <tr> <td>-04</td> <td>(16.00) .630</td> </tr> <tr> <td>-05</td> <td>(19.00) .748</td> </tr> <tr> <td>-07</td> <td>(25.00) .984</td> </tr> <tr> <td>-09</td> <td>(14.00) .551</td> </tr> </tbody> </table> *Processing conditions will affect mated height.					QTH LEAD STYLE	MATED HEIGHT WITH QSH*	-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
QTH LEAD STYLE	MATED HEIGHT WITH QSH*																					
-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																					
Diagram showing dimensions for -L configuration. Dimensions: (7.24) .285, (0.76) .030, (0.89) .035 DIA, (0.64) .025		*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