

Product Name: ZX140CS Samtec Connector Saver - Breakout Adapter QSS – QTS 025 (DP -016) – Page 1/2

Product Description: 25pins x 2 rows, 50 pins Samtec Connector Saver - breakout adapter. Offering both QSS and QTS connectors on connector saver module with debug access point providing full feature breakout adapter.

- 1- Each QSS signal is routed to associated QTS connector through board to board via. Pin 1 of QTS is connected to pin 1 of QSS connector.
- 2- All signals have 0.3" (7.6mm) trace length on both top and bottom layers of the PCB.
- 3- All traces have 10mils (0.26mm) width, enabling soldering of any probe wires (36AWG solid copper – See package includes)
- 4- All traces are designed 50 Ohms impedance controlled.
- 5- Four, 4, layers PCB design, inner layers are GND planes with direct connection to QSS-QTS ground blades.
- 6- Two accessible GND test points, The test points are connected to module GND planes.
- 7- Offering Extended height QTS connector (0.286" – 7.26mm) , providing interface clearance from host components.
- 8- Mated QSS-QTS (Host with ZX140CS) height 0.315" (8.00mm)
- 9- Ease of interface with single channel and differential scope probes.
- 10- User may relocate any QTS signal by cutting trace before the via and solder to new location or external test equipment.
- 11- Fully compatible with Single Ended , SE, and Differential Pair, DP, Samtec connector QSS QTS series as well as cable assemblies; SQCD .
- 12- Mates with any height and formfactor QSS QTS connector series such as -DP, -RA, -EM, -DP-RA configurations.
- 13 – Accessible GND test point with direct interface to the integral metal plane (GND blade)
- 14- The module is shipped with 12pc of probing wires – See ordering information, [ZX00BC2PH1](#)

Electrical: Insertion loss -2dB @8GHz
 Trace impedance: 50 Ω
 Operating Temperature: -55°C to +125°C
 Trace width: 10mils (0.26mm)
 Trace to Trace Spacing: 15mils (0.381mm)
 Trace Length: 0.3" (7.6mm)
 Trace to Trace via: 30mils (0.8mm) from end of PCB trace
 PCB Clearance : 8mm from Host PCB (QSS on host)
 36AWG Bare copper wire : 0.014mm diameter - See package includes for details

Application: Manufacturing test and re-use, bringup, testing , debugging

Mates with : Any height and formfactor of Samtec QTS025 QSS025 QSS016(DP) QTS016(DP), SQCD cable assembly
 Compatible with – differential Pair (DP), unused signal can be left unconnected or Grounded for improved noise immunity.

Pitch: Samtec QSS QTS connector 0.6350mm (0.025") High Speed connector

Please see Page 2 for more details.

Compliance:

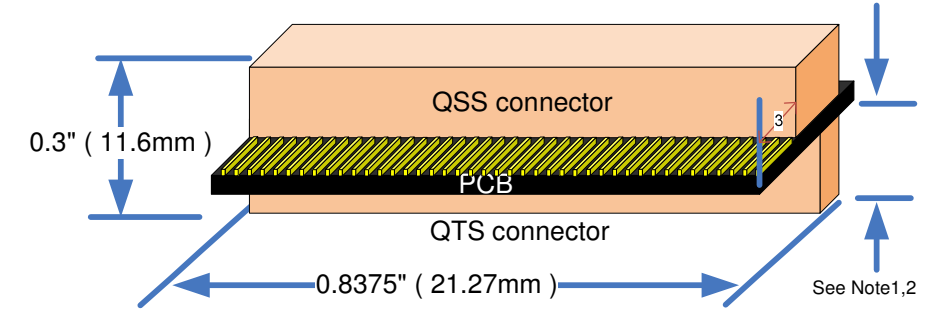
- ISO2001 certified
- RoHs - Lead Free
- EU RoHS2
- UL E111594 document
- ELV- Vehicle Directive (Directive 2000/EC)
- European Union Directive (203/11/EC)
- Halogen Free per IEC-61249-2.21 : 2003
- RoHs Directive 2011/65/EU
- WEEE Directive (2012/12/EU)
- Certificate of Compliance for Radioactive substances
- Certificate of Compliance for Asbestos
- Certificate of Compliance for Ozone Depleting Substances, ODS
- Certificate REACH SVHC
- Certificate of Compliance RoHS_EN_CoC

ZX140CS package includes:

Part number	Quantity	Description
ZX140CS	1	Connector Saver Breakout Adapter module
ZX00BC2PH1	12	36AWG Bare Copper wire to pin header wire assembly

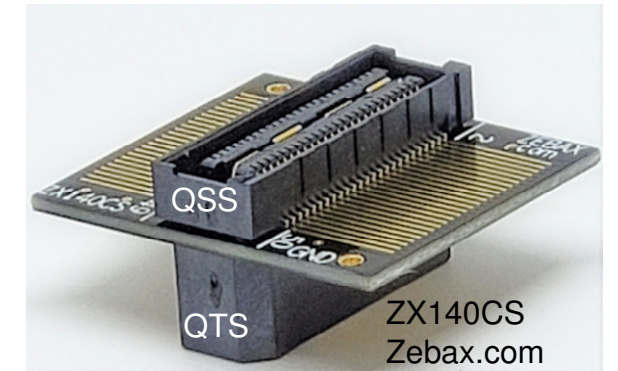
Note

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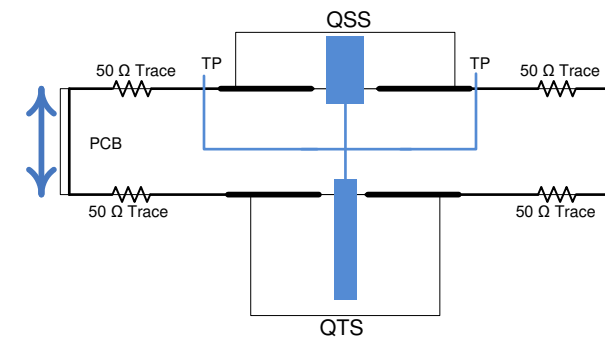


Notes:

- 1- QTS height 0.286" (7.26mm)
- 2- Mated QTS – QSS height 0.315" (8.00mm)
- 3- PCB Extends 0.3" (7.6mm) from the QSS connector

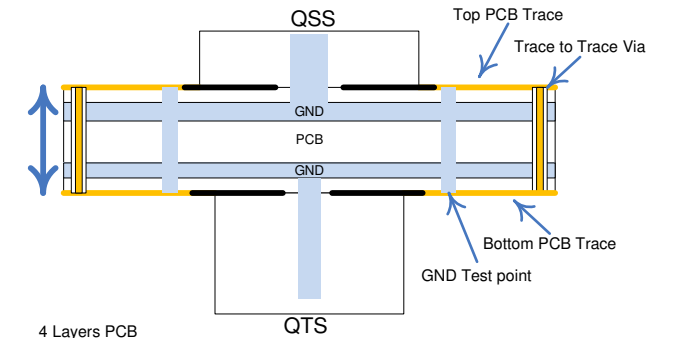


ZX140CS - Simplified Circuit Diagram



All traces are controlled 50 Ω impedance
 TP – The GND Test Point , has direct connection to QSS QTS ground power blades , PCB inner layers , the TOP & Bottom GND Fills as well as the GND stitching vias

ZX140CS Cross section view



4 Layers PCB
 2 inner layers are Ground planes
 GND Test Point , TP, provides direct connection to QSS QTS Blades , TOP and Bottom GND Fills & the GND stitching vias

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SPECIFIED DIMENSIONS ARE INCHES (MM). ROHS COMPLIANT		ASSEMBLY DRAWING ITEM: ZX140CS
DESCRIPTION: Samtec Connector Saver - breakout adapter QSS QTS 025		
CHECKED: M. MARINA	DRAWN: SLAVIK	REVISION: 1.0 SHEET: 1 OF 2

Product Name: ZX140CS Samtec Connector Saver - Breakout Adapter QSS – QTS 025 (DP -016) – Page 2/2

Access: For signal measurements: 1- Recommendation: Use 36AWG solid copper wire with pin header, see ZX00BC2PH1
 For signal relocation: 1- Cut the trace to the connecting via (30 mils [0.8mm] before end of trace)
 2- Using 36AWG solid copper wire, make the required connections. See figure below

Typical Application: ZX145CS is designed for purpose of test and debugging at full connector's bandwidth. It provides new approach in usage of breakout adapters by :
 1- Utilizing single or differential scope probe.
 2- Enabling design changes, by re-assignment of any signal by means of cut and solder, where any signal may be cut and assigned to new location by jumper wires.

Scope Probe wire Installation:

- 1- It is recommended to keep the probe wire length at 0.5" (1.2cm) long.
- 2- In order to avoid ground loop problems, please use the shortest Ground probe wire interfacing to the nearest GND reference. ZX140CS provides two GND test points for reference.
- 3- Both Keysight as well as Tektronix offer variety of single ended as well as differential probes along with their accessories, below are few probes from each vendor:

- a) Keysight differential probe or similar N2795A, N2796A, 1168V, 1134B along with E2677B differential Solder-in probe, N5426A ZIF Tip, N2884A Fine Wire ZIF Tip and more – See the figure "probe head accessories".
- b) Tektronix offers several single-ended as well as differential probes such as : P6245, P6248, P6247, P6246 or any of TDP7000 series and more

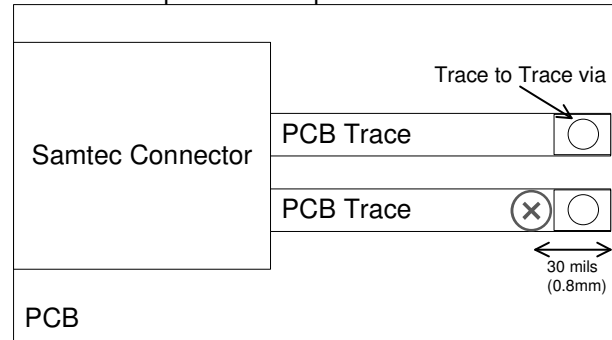
4- Please follow your vendor's guideline in installation of probe wires & accessories.

Signal Access & re-route:

Any signal re-routing on ZX140CS may be implemented by cutting the trace min. of 30 mils (0.8mm) before end of the trace on top or bottom side of the PCB. The Via (inner connecting via) at end of the trace connects the top layer's signal (trace) to bottom layer's signal (trace). The inner connecting via may not be visible on most of our design. The via has clearance of 30mils from end of the trace.

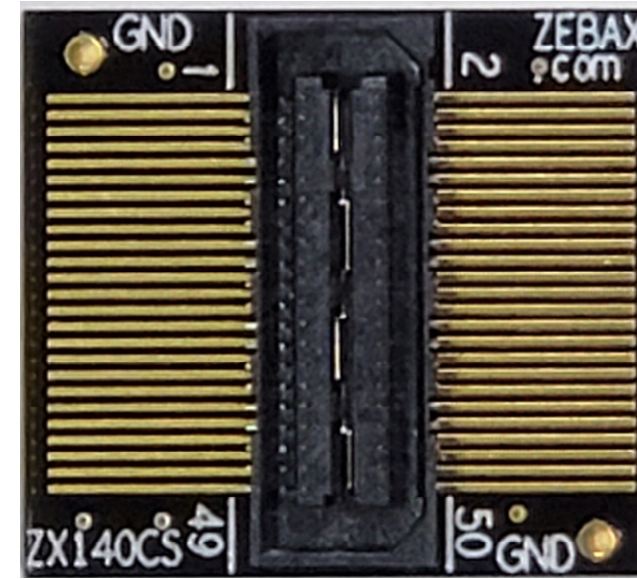
ZX140CS module has 4 layer PCB where the inner layers are Ground layers. They are connected to connector ground power blade. Please see Cross Section View figure on Page 1 for details.

ZX140CS – portion of Top View

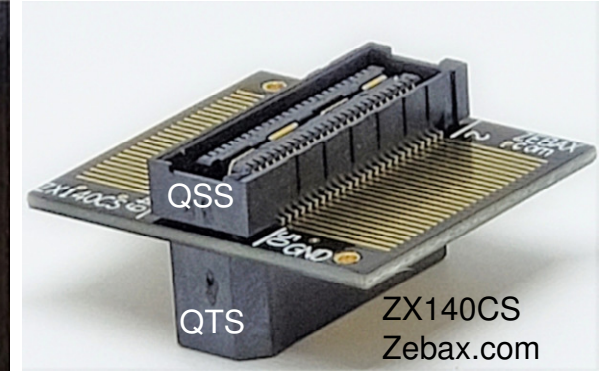


Note: The hole for the Via may not be visible on Zebax Connector Saver breakout adapter designs. The via is located 30 mils (0.8mm) from end of the trace as marked

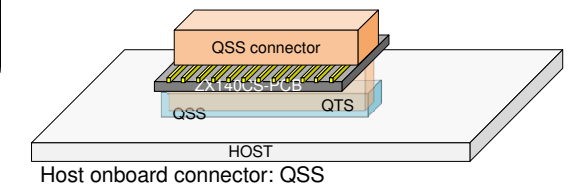
(X) Ideal location to cut the trace



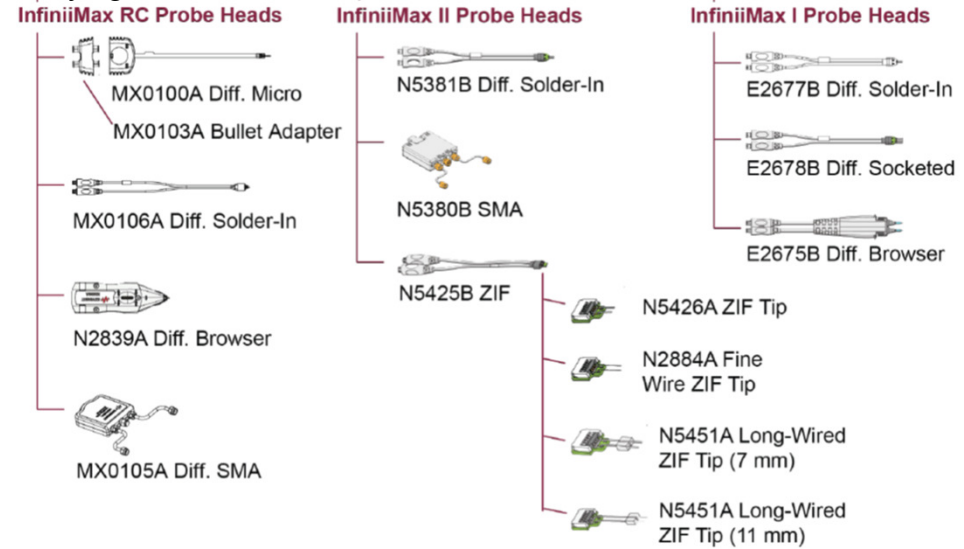
ZX140CS Top View



Typical ZX140CS interface with host



Keysight Probe Head accessories



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