

Product Name: ZX127HSEC6-42H Samtec GENERATE HSEC6 / Mini Cool Edge IO , MCIO, edge card breakout adapter – Page 1 OF 2

Product Description: ZX127HSEC6-42H is Samtec HSEC6 0.6mm pitch also referred as Mini Cool Edge IO , MCIO / SFF-TA-1002 , edge card breakout adapter. ZX127HSEC6-42H is designed for real-time electrical test & measurements, signal integrity , characterization, manufacturing loopback test applications.

ZX127HSEC6-42H is breakout adapter, supporting Samtec GENERATE HSEC6 / MCIO edge card 0.6mm pitch connectors using 1.6mm PCB thickness. It provides full access to all HSEC6 / MCIO connector's signals via onboard headers for purpose of test & measurement.

- 1- Provides access to all Samtec HSEC6 / MCIO signals via onboard headers.
- 2- The headers are standard 0.1" ( 2.54mm ) pitch.
- 3- Listed number adjacent to each header's pin is in reference to the Samtec HSEC6 / MCIO connector's pin.
- 4- All traces are impedance controlled.
- 5- Four, 4, layers PCB design, inner layers are GND planes.
- 6- Accessible GND test point, The test point is connected to inner GND planes.
- 7- Ease of interface with single channel and differential scope probes.
- 8- Flying lead wire assembly or similar is recommended – See ordering information

Electrical: Insertion loss > -2dB @6GHz  
Trace impedance: 50 Ω  
Operating Temperature: -55°C to +125°C  
Edge Card Connector:

Mates with: Samtec HSEC6 / MCIO 0.60mm pitch connector  
Pitch: 0.60mm pin to pin pitch  
Thickness: 1.6mm ( 0.062" )  
Plating: 10μ" ( 0.25μm )

Header:  
Pitch: 0.1" ( 2.54mm ) pin to pin pitch  
Pin: Square 0.025" ( 0.635mm )  
Height: 0.24" ( 6mm )  
Plating: Gold Flash

Application: Manufacturing test measurement & re-use, design, testing , debugging loopback test, characterization , pre-bringup , bringup , interface

Mates with : Samtec GENERATE High Speed Edge Card HSEC6 & GC6 cable assembly  
Industry standard Mini Cool Edge IO , MCIO , SFF-TA-1016, SFF-TA\_1002, GEN-Z 1C  
Amphenol G97, GH01 series. ACES Electronics, LOTES  
MET005610101011 ME1005610203071 ME1005610201091 ME1005611201041  
ME1005611202041 ME1005610211081 ME1005610205081 ME1005613401101  
ME1005634478101

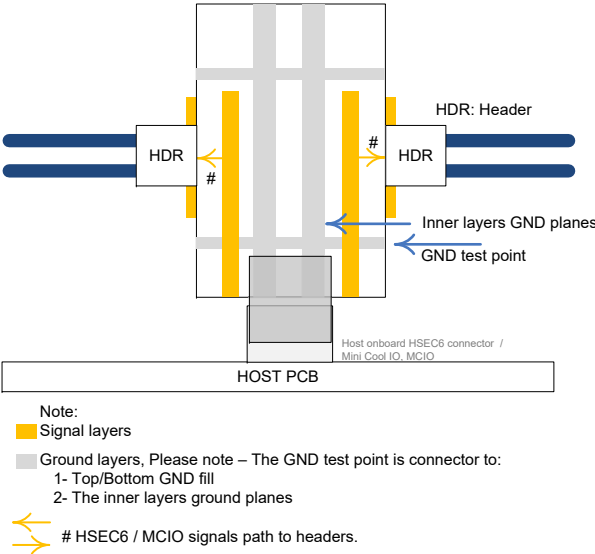
Industry Standard : HSEC6 & MCIO connectors have been adopted by industry standards such as:  
SFF-TA\_1002, SFF-TA-1016, PCI Express Gen 3.0, 4.0, 5.0, 6.0, OCP DC-MHS ( HSIO recommended )  
Supporting Up to 64 Gbps PAM4 performance. PCIe , NVMe , SAS ,SFP(+) ,SFP 28

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ZX127HSEC6-42H simplified cross section diagram



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

ZX127HSEC6-42H package includes:

Part number	Quantity	Description
ZX127HSEC6-42H	1	Breakout Adapter module
ZX100ACC-SS	0	Flying lead wire assembly

Note

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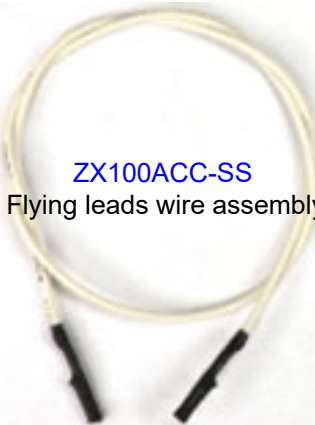
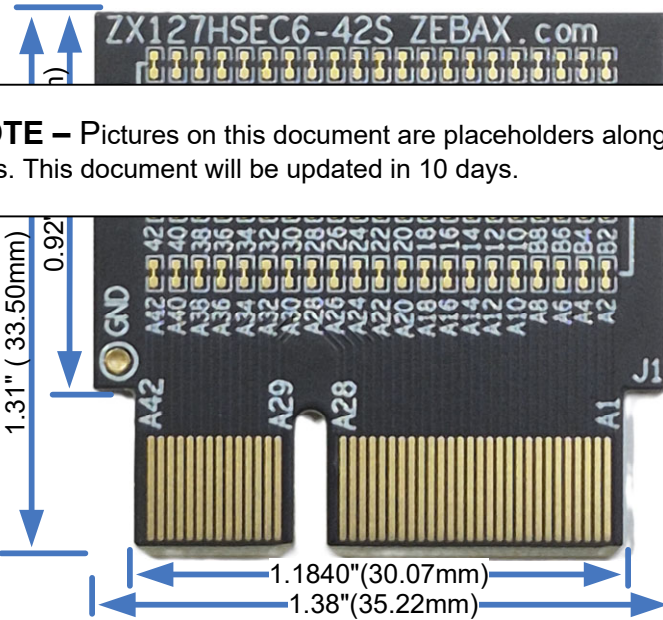
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SPECIFIED DIMENSIONS ARE INCHES (MM). ROHS COMPLIANT	ASSEMBLY DRAWING
	ITEM: ZX127HSEC6-42H

DESCRIPTION: Samtec HSEC6 / Mini Cool IO , MCIO , Edge Card Breakout Adapter

CHECKED: M. MAHIN	DRAWN: KADIJEH	REVISION: 1.0 SHEET: 1 OF 2
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PLEASE NOTE – Pictures on this document are placeholders along with dimensions. This document will be updated in 10 days.



Product Name: ZX127HSEC6-42H Samtec GENERATE HSEC6 / Mini Cool Edge IO , MCIO, edge card breakout adapter – Page 2 OF 2

Ground : ZX127HSEC6-42H is 4 layers PCB design where the inner layers are Ground layers. They are connected to the GND test point as well as top & bottom GND fills. For improved signal integrity, please connect the GND test point to system GND reference point. See Cross Section diagram for details.

Typical Application: ZX127HSEC6-42H 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-Test and measurement, manufacturing loopback test, validation, pre-bringup applications.

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 point. ZX127HSEC6-42H provides GND test point to be utilized as GND reference interface with host.

SFF-TA-1002 1C ( 2 rows x 42 pins/row ) 84 pins standard- Below are listed signals and Ground pins assignments for the SFF-TA-1002 standard, please refer to the standard for formal signals map naming. This table denotes "SIG" or "GND" PIN geometry locations. The Grounds are not bussed together in the connector or the ZX127HSEC6-42H breakout adapter. The listed GND signals are routed similar to the SIG signals, they are all individually routed signals.

ZX127HSEC6-42H Pin Geometry Pattern ( 2C ) SFF-TA_1002 Standard																																											
Side A	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		29	30	31	32	33	34	35	36	37	38	39	40	41	42
Name	GND	SIG	SIG	GND	SIG	SIG	GND	SIG	SIG	GND	SIG	SIG	GND	SIG	SIG	GND	SIG	SIG	GND	SIG	SIG	GND	SIG	SIG	GND	SIG	SIG	GND		GND	SIG	SIG	GND	SIG	SIG	GND	SIG	SIG	GND	SIG	SIG	GND	SIG
Side B	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		29	30	31	32	33	34	35	36	37	38	39	40	41	42

Header pin access configuration: Table below is header’s pin configuration

ZX127HSEC6-42H header pin assignments														
Bottom B-Side	Headers	J5	39	35	31	27	23	19	15	11	7	3	GND	GND
			40	36	32	28	24	20	16	12	8	4	GND	GND
		J4												
			41	37	33	29	25	21	17	13	9	5	1	GND
			42	38	34	30	26	22	18	14	10	6	2	GND
Top A-Side	Headers	J3	39	35	31	27	23	19	15	11	7	3	GND	GND
			40	36	32	28	24	20	16	12	8	4	GND	GND
		J2												
			41	37	33	29	25	21	17	13	9	5	1	GND
			42	38	34	30	26	22	18	14	10	6	2	GND
Header pin numbers refer to the edge card connector pin numbers.														
GND header pins are connected to top & bottom GND fill as well as the inner layers GND planes.														

HSEC6 / MCIO footprint: ZX127HSEC6-42H mates with industry standard footprint for SFF-TA-1002 1C ( 2rows x 42 pins per row ) 84 pins connectors.

Note  
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ASSEMBLY DRAWING

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CHECKED: M. MAHIN

DRAWN: KADIJEH

REVISSION: 1.0

SHEET: 2 OF 2

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