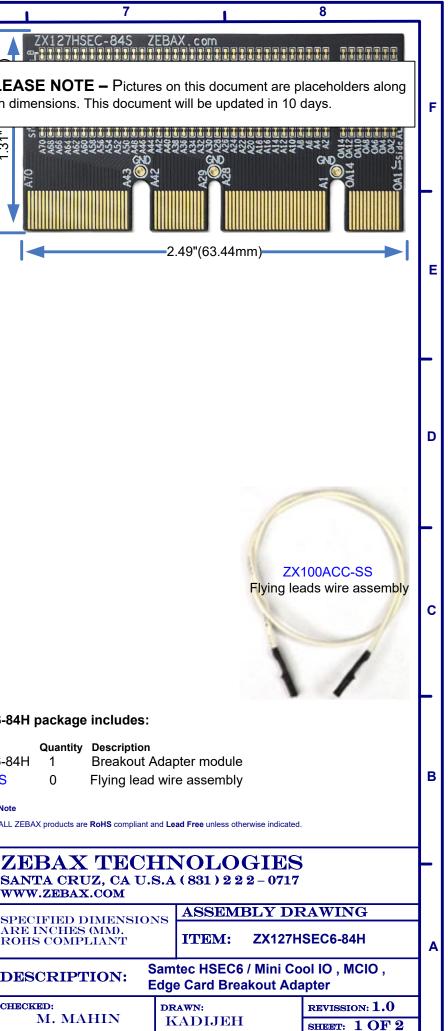Product Name: ZX127HSEC6-84H Samtec GENERATE HSEC6 / Mini Cool Edge IO , MCIO, edge card breakout adapter – Page 1 OF 2

Product Description: ZX127HSEC6-84H is Samtec HSEC6 0.6mm pitch also referred as Mini Cool Edge IO , MCIO / SFF-TA-1002 , edge card breakout adapter. ZX127HSEC6-84H is designed for real-time electrical test & measurements, signal integrity , characterization, manufacturing loopback test applications.

ZX127HSEC6-84H 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

PLEASE NOTE – Pictures on this document are placeholders along with dimensions. This document will be updated in 10 days.

1.31"

2.49"(63.44mm)

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

ZX127HSEC6-84H simplified cross section diagram

HDR: Header
HDR   #   HDR
Inner layers GND planes
GND test point
Host onboard HSEC6 connector / Mini Cool IO, MCIO
HOST PCB

Note:
■ Signal layers
■ Ground layers, Please note – The GND test point is connector to:
1- Top/Bottom GND fill
2- The inner layers ground planes

HSEC6 / MCIO signals path to headers.

ZX100ACC-SS
Flying leads wire assembly

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

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

ZX127HSEC6-84H package includes:

Part number	Quantity	Description
ZX127HSEC6-84H	1	Breakout Adapter module
ZX100ACC-SS	0	Flying lead wire assembly

Note
ALL ZEBAX products are **RoHS** compliant and **Lead Free** unless otherwise indicated.

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WWW.ZEBAX.COM

SPECIFIED DIMENSIONS ARE INCHES (MM). ROHS COMPLIANT

ASSEMBLY DRAWING

ITEM: **ZX127HSEC6-84H**

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

CHECKED: M. MAHIN
DRAWN: KADIJEH
REVISSION: 1.0
SHEET: 1 OF 2

Product Name: **ZX127HSEC6-84H Samtec GENERATE HSEC6 / Mini Cool Edge IO , MCIO, edge card breakout adapter – Page 2 OF 2**

Ground :   ZX127HSEC6-84H 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: ZX127HSEC6-84H 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.
    ZX127HSEC6-84H provides GND test point to be utilized as GND reference interface with host.

SFF-TA-1002 1C (2 rows x 28 pins/row) 56 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 ZX127HSEC6-84H breakout adapter. The listed GND signals are routed similar to the SIG signals, they are all individually routed signals.

ZX127HSEC6-84H Pin Geometry Pattern (4C) 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		43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70		OA1	OA2	OA3	OA4	OA5	OA6	OA7	OA8	OA9	OA10	OA11	OA12	OA13	OA14
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		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	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		43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70		OB1	OB2	OB3	OB4	OB5	OB6	OB7	OB8	OB9	OB10	OB11	OB12	OB13	OB14

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

ZX127HSEC6-84H header pin assignments

Bottom B-Side	Headers	J5	67	63	59	55	51	47	43	39	35	31	27	23	19	15	11	7	3	OB13	OB9	OB5	OB1
			68	64	60	56	52	48	44	40	36	32	28	24	20	16	12	8	4	OB14	OB10	OB6	OB2
		J4	69	65	61	57	53	49	45	41	37	33	29	25	21	17	13	9	5	1	OB11	OB7	OB3
			70	66	62	58	54	50	46	42	38	34	30	26	22	18	14	10	6	2	OB12	OB8	OB4
Top A-Side	Headers	J3	67	63	59	55	51	47	43	39	35	31	27	23	19	15	11	7	3	OA13	OA9	OA5	OA1
			68	64	60	56	52	48	44	40	36	32	28	24	20	16	12	8	4	OA14	OA10	OA6	OA2
		J2	69	65	61	57	53	49	45	41	37	33	29	25	21	17	13	9	5	1	OA11	OA7	OA3
			70	66	62	58	54	50	46	42	38	34	30	26	22	18	14	10	6	2	OA12	OA8	OA4

Header pin numbers refer to the edge card connector pin numbers.

HSEC6 / MCIO footprint: ZX127HSEC6-84H mates with industry standard footprint for SFF-TA-1002 1C (2rows x 28 pins per row) 56 pins connectors.

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ASSEMBLY DRAWING

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ITEM: ZX127HSEC6-84H

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

| CHECKED: M. MAHIN | DRAWN: KADIJEH | REVISSION: 1.0 |
| | | SHEET: 2 OF 2 |