

**Product Name:** ZX114ER5-xxP Samtec ERM5 ERF5 Edge Rate rugged Breakout Adapter

**Product Description:** ZX114ER5-xxP is Samtec ERM5 ERF5 connector series breakout adapter. It is collection of 5 modules. ZX114ER5-xxP is designed for real-time electrical test and measurements, signal integrity , characterization, manufacturing loopback test applications.

ZX114ER5-xxP is commonly used throughout this document. It is referred to the ZX114ER5-xxP module where the "xx" will be one of the ERM5 / ERF5 connector series as listed in the *Ordering Information* section

**ZX114ER5-xxP features:**

- 1- Provides access to all Samtec ERM5 – ERF5 signals are via onboard Shunts, accessible on both sides of PCB for easy probe access.
- 2- Passthrough design where pin 1 of the ERM5 header ( plug ) is connected to pin 1 of ERF5 socket ( receptacle ).
- 3- Shunts are accessible from both sides of PCB. They are standard 0402 SMD footprint package size.
- 4- Listed number adjacent to each Shunts represent the associated Samtec ERM5 – ERF5 connector pin number.
- 5- All traces are 50 Ohms impedance controlled with exceptional signal integrity & crosstalk.
- 6- Four layers PCB design, inner layers are GND planes.
- 7- Dedicated GND reference test points, interfacing with two inner GND planes.
- 8- **Mates** with any height and formfactor Samtec ERM5 – ERF5 edge rate rugged high speed connector formfactor.
- 9- The module is shipped with 12pc of probing wires – See ordering information, see [ZX00BC2PH1](#)
- 10- Ease of interface with single channel and differential scope probes.



**Electrical:**  
 Insertion loss > -2dB @3GHz  
 Trace impedance: 50 Ω  
 Operating Temperature: -55°C to +125°C  
 Samtec Connector:

Onboard Connector: ERM5-xxx 2rows per xx , where xx is 10 .. 50 pins/row  
 ERF5-xxx 2rows per xx , where xx is 10 .. 50 pins/row

Mates with: Any Samtec ERM5 & ERF5 formfactor

Pitch: 0.020" ( 0.50mm ) pin to pin pitch

Plating: 10μ" ( 0.25μm )

Shunt:

Package: Standard 0402 SMD package

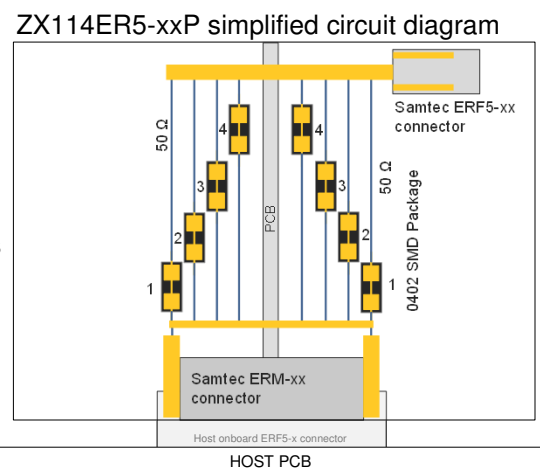
**Application:** Bringup, testing, emulation, development, modular design evaluations, manufacturing loopback

**Mates with :** Any height and formfactor Samtec ERM5 ERF5 edge rate connector series.

Mates with ERM5 & ERF5 connector series :

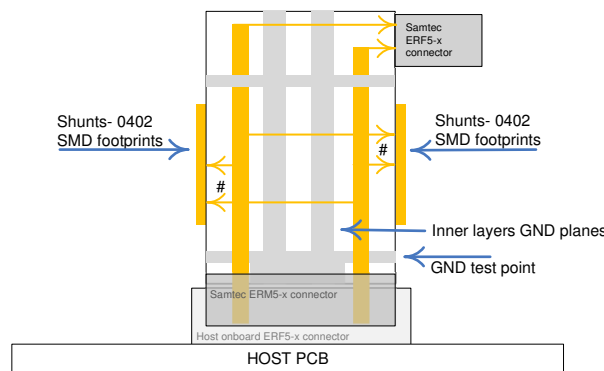
- 1- Latching , -L
- 2- Extended Guide Post Shield, -EGPS.
- 3- Extended Guide Post, -EGP.
- 4- Extended Guide Post Shield, -DSS.
- 5- ERCD and ERDP micro and twinax cable assembly

**Breakout Access :** All ZX114ER5-xxP breakout adapters provide access to ALL Samtec ERM5 and ERF5 connectors via onboard Shunts. All the signals are accessible on top & bottom layers of the module. Please refer to the simplified circuit diagram for details.



Note: 1- Shunts are standard 0402 SMD package size  
 2- Shunts are available on both sides of ZX114ER5-xxP module, making ALL Samtec connector signals accessible on both top and bottom sides of the module.  
 3- Listed number adjacent to each Shunts represent the associated Samtec ERM5 – ERF5 connector pin number.

ZX114ER5-xxP simplified cross section diagram

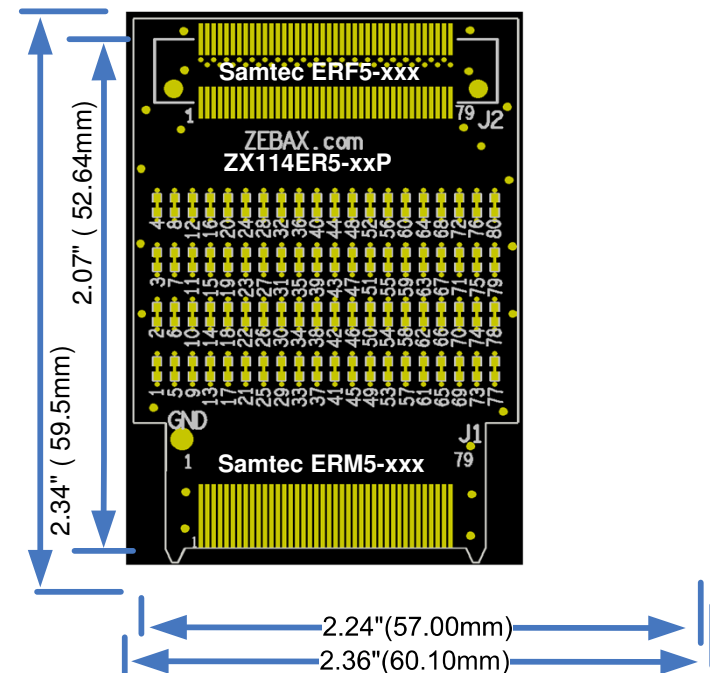


Note:  
 Ground layers, Please note – The GND test point is connector to:  
 1- Top/Bottom GND fill  
 2- The inner layers ground planes  
 Shunts & signal routing  
 1- Shunts are standard 0402 SMD package size  
 2- Shunts are available on both sides of ZX114ER5-xxP module, making ALL Samtec connector signals accessible on both top and bottom sides of the module.  
 ERF5-xx connector is vertical to PCB  
 ERM5-xx is designed in on ZX114ER5-xxP which plugs into any Samtec ERF5 form factor connector series.  
 # ERM5-xx signals path to Shunts and to/from ERF5.

**Compliance:**

- ISO2001 certified
- RoHs - Lead Free
- EU RoHS2
- UL E11594 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



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

**Ordering Information:**

Part number	Mates with	Description
ZX114ER5-10P	ERM5-010 ERF5-010	2 rows x 10 pins/row breakout adapter
ZX114ER5-20P	ERM5-020 ERF5-020	2 rows x 20 pins/row breakout adapter
ZX114ER5-30P	ERM5-030 ERF5-030	2 rows x 30 pins/row breakout adapter
ZX114ER5-40P	ERM5-040 ERF5-040	2 rows x 40 pins/row breakout adapter
ZX114ER5-50P	ERM5-050 ERF5-050	2 rows x 50 pins/row breakout adapter
ZX114ER5-60P	ERM5-050 ERF5-050	2 rows x 60 pins/row breakout adapter
ZX114ER5-70P	ERM5-050 ERF5-050	2 rows x 70 pins/row breakout adapter
ZX114ER5-75P	ERM5-050 ERF5-050	2 rows x 75 pins/row breakout adapter

Ordering any of ZX114ER5-xxP includes one package of ZX00BC2PH1.

[ZX00BC2PH1](#) 12 pieces of 36AWG Bare Copper wire to pin header wire assembly

[ZX100ACC-SS site page](#) for ordering additional flying leads wire assembly

Note  
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SPECIFIED DIMENSIONS ARE INCHES (MM). ROHS COMPLIANT	<b>ASSEMBLY DRAWING</b> <b>ITEM: ZX114ER5-xxP</b>
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**DESCRIPTION:** Samtec Edge Rate rugged high speed connector Breakout Adapter

<b>CHECKED:</b> M. MARINA	<b>DRAWN:</b> MATTHEW	<b>REVISION: 1.0</b> <b>SHEET: 1 OF 7</b>
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**Product Name:** ZX114ER5-xxP Samtec ERM5 ERF5 Edge Rate rugged Breakout Adapter

**Signal Access & re-route:** Re-routing any signal on ZX114ER5-xxP is implemented by cutting inner-connecting Shunt's trace and redirect to the new signal or test equipment.


**Ground :** ZX114ER5-xxP 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.

**ZX114ER5-xxP part numbers :** ZX114ER5-xxP is offered in 8 different models, supporting each ERM5 / ERF5 connector size. Below are each part number with associated mechanical diagram.

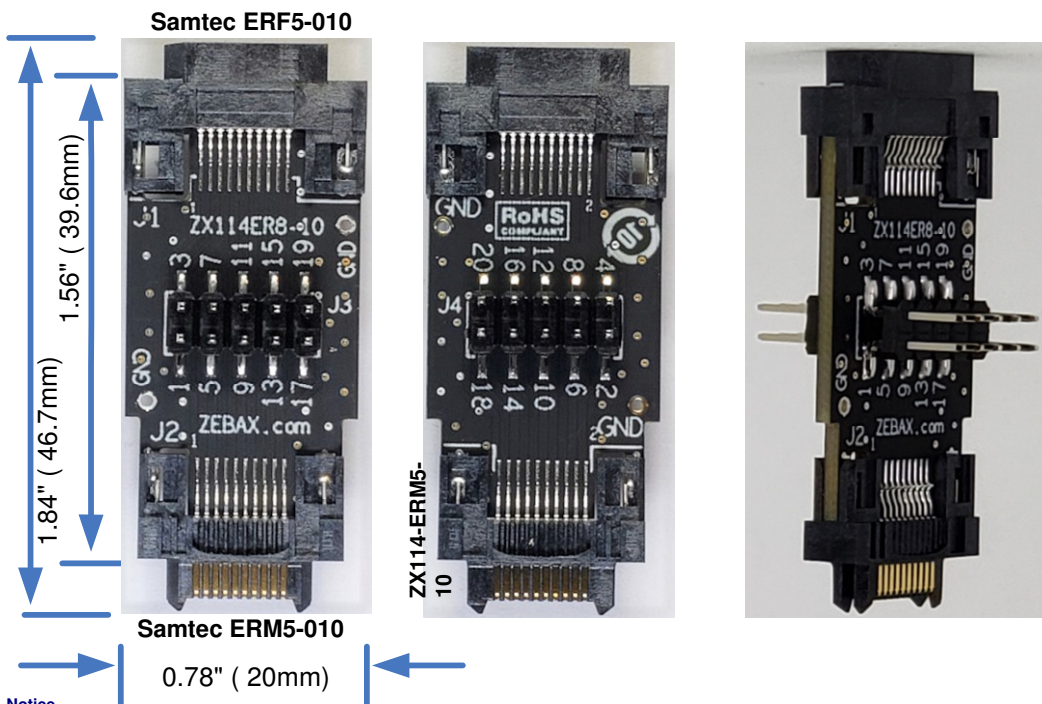
**Typical Application:** ZX114ER5-xxP is designed for purpose of test and debugging at full connector's bandwidth. It provides new approach in usage of breakout adapters by :

- 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- Zebax provided ZX00BC2PH1 , ( 36AWG Bare Copper wire to pin header wire assembly ) is an ideal probing wire solution where the header fits into any single ended or differential probe.
- 
- 2- In order to avoid ground loop problems, please use the shortest Ground probe wire interfacing to the nearest GND reference point. ZX114ER5xxP provides GND test point to be utilized as GND reference interface with host.

**ZX114ER5-10P** – Two rows x 10 pins per row ERM5 – ERF5 breakout adapter , supporting ERM5-010 & ERF5-010 Samtec Edge Rate rugged connectors



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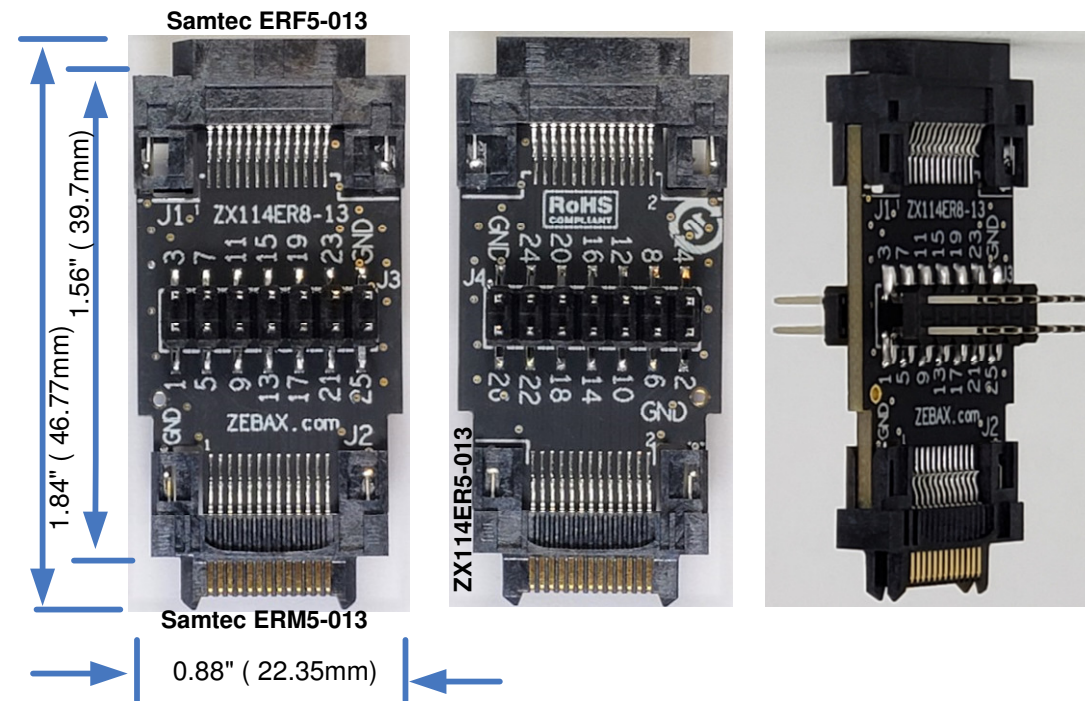
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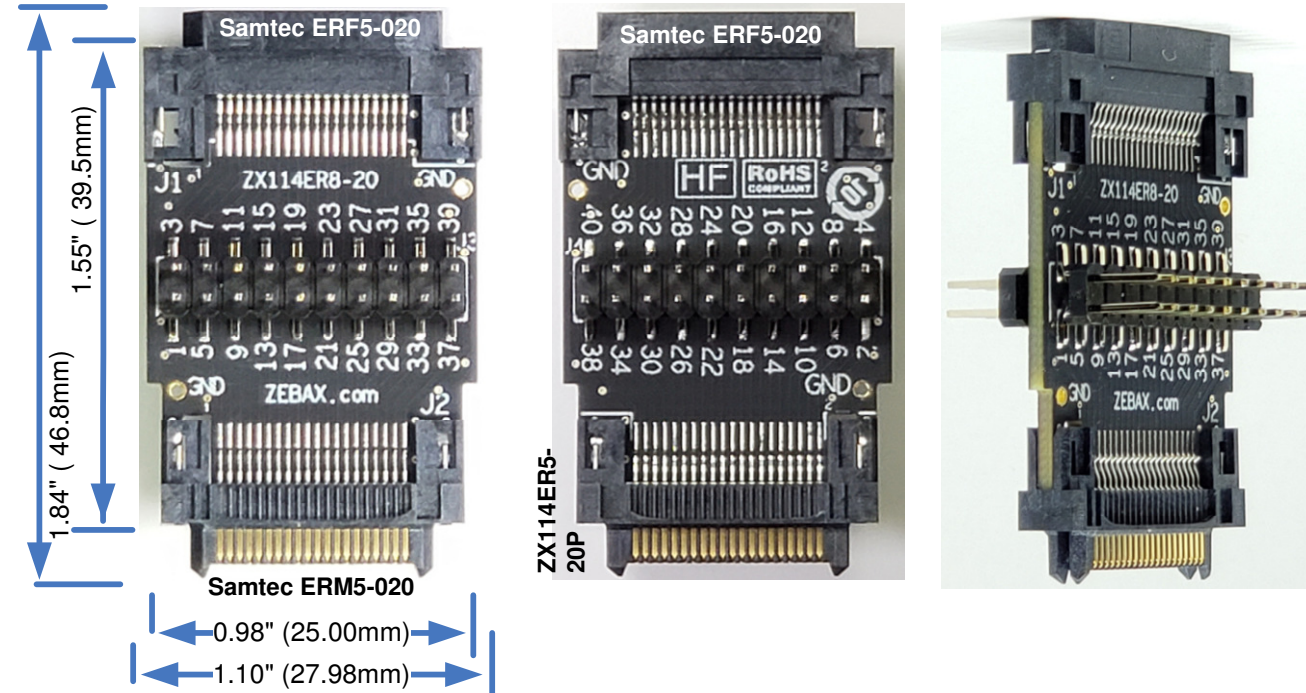
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**Product Name: ZX114ER5-xxP Samtec ERM5 ERF5 Edge Rate rugged Breakout Adapter**

**ZX114ER5-20P** - Two rows x 20 pins per row ERM5 – ERF5 breakout adapter , supporting ERM5-020 & ERF5-020 Samtec Edge Rate rugged connectors



**ZX114ER5-30P** - Two rows x 30 pins per row ERM5 – ERF5 breakout adapter , supporting ERM5-030 & ERF5-030 Samtec Edge Rate rugged connectors



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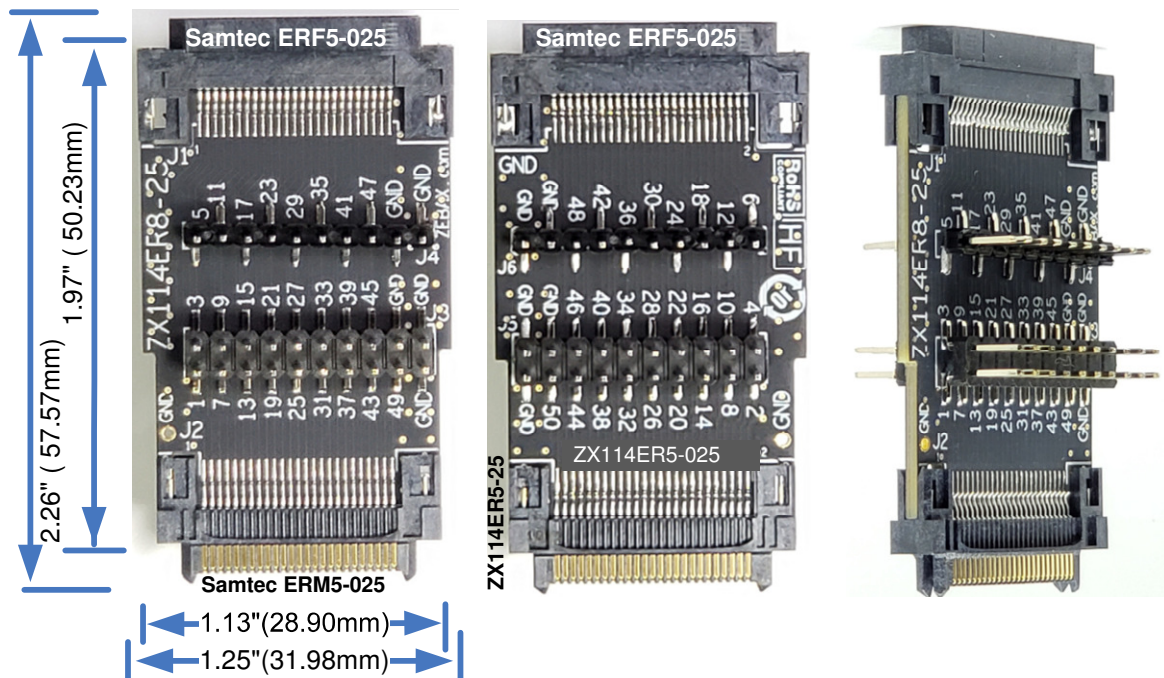
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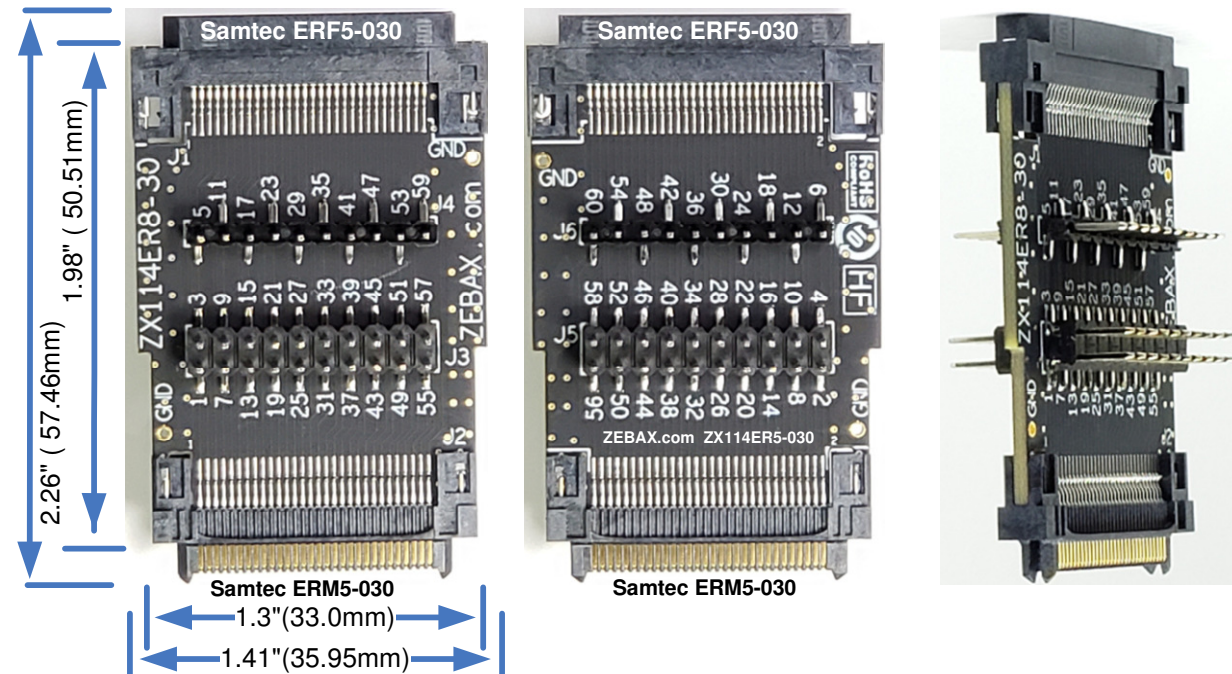
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**Product Name: ZX114ER5-xxP Samtec ERM5 ERF5 Edge Rate rugged Breakout Adapter**

**ZX114ER5-30P** - Two rows x 30 pins per row ERM5 – ERF5 breakout adapter , supporting ERM5-030 & ERF5-030 Samtec Edge Rate rugged connectors



**ZX114ER5-40P** - Two rows x 40 pins per row ERM5 – ERF5 breakout adapter , supporting ERM5-040 & ERF5-040 Samtec Edge Rate rugged connectors



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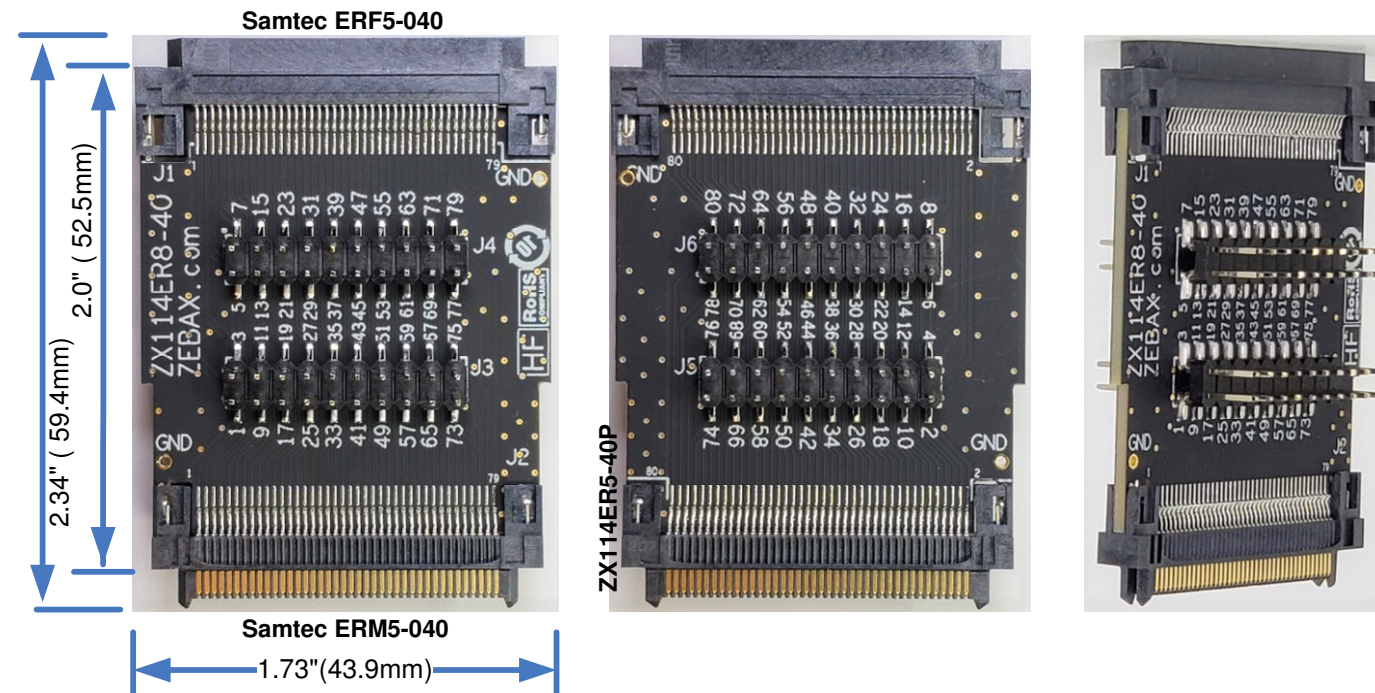
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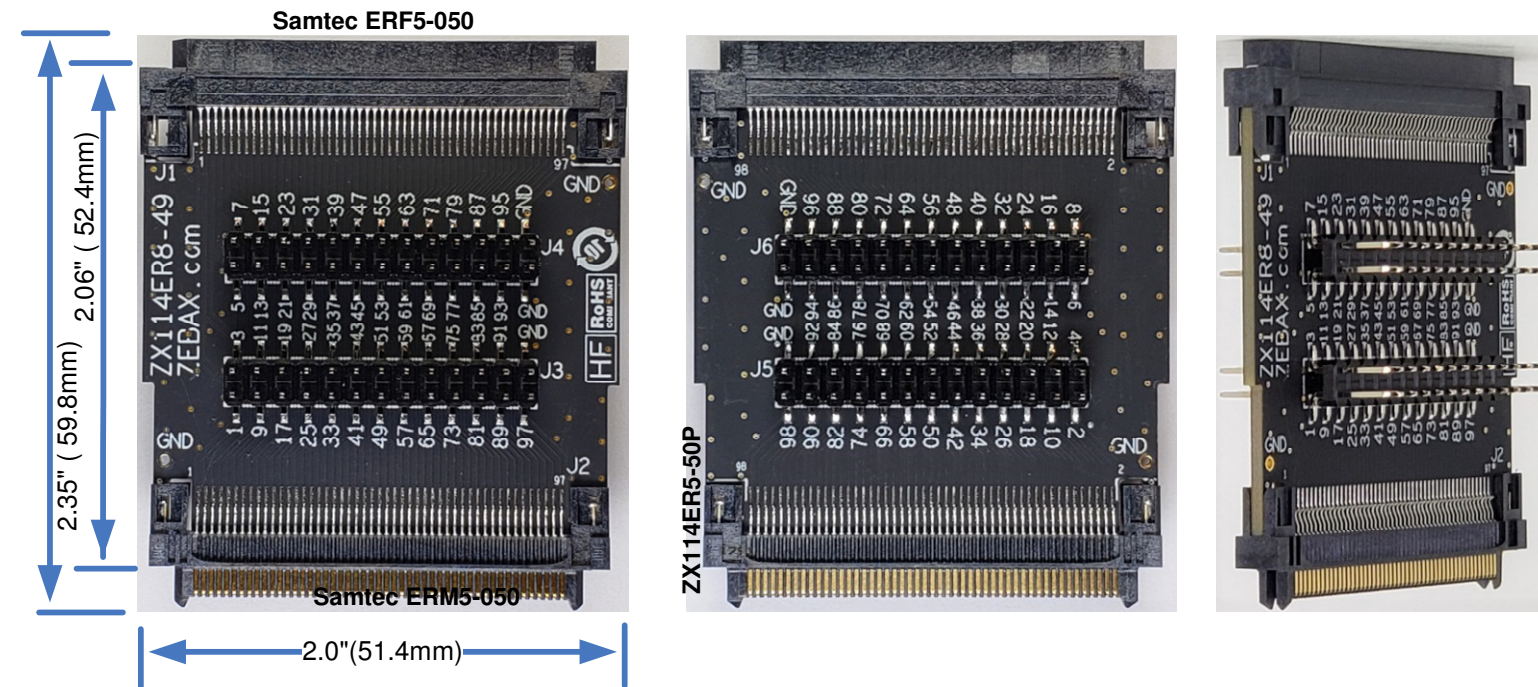
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**Product Name: ZX114ER5-xxP Samtec ERM5 ERF5 Edge Rate rugged Breakout Adapter**

**ZX114ER5-40P** - Two rows x 40 pins per row ERM5 – ERF5 breakout adapter , supporting ERM5-040 & ERF5-040 Samtec Edge Rate rugged connectors



**ZX114ER5-50P** - Two rows x 50 pins per row ERM5 – ERF5 breakout adapter , supporting ERM5-050 & ERF5-050 Samtec Edge Rate rugged connectors



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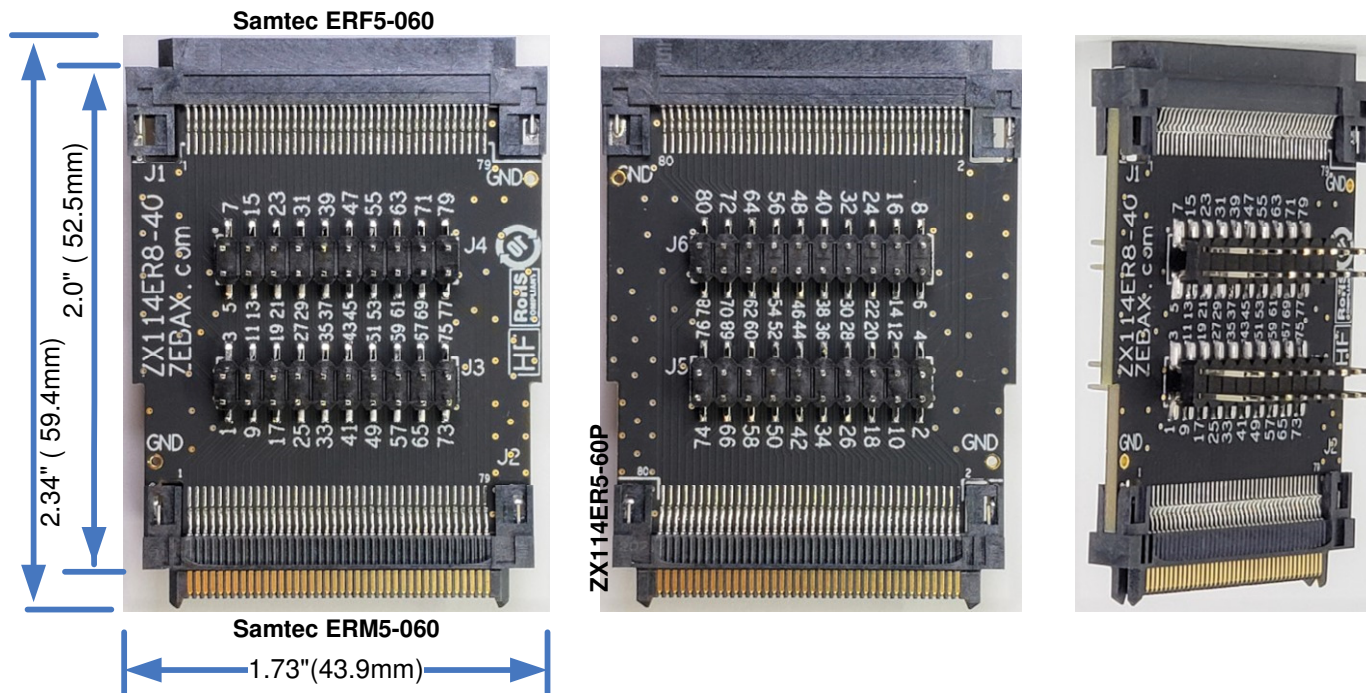
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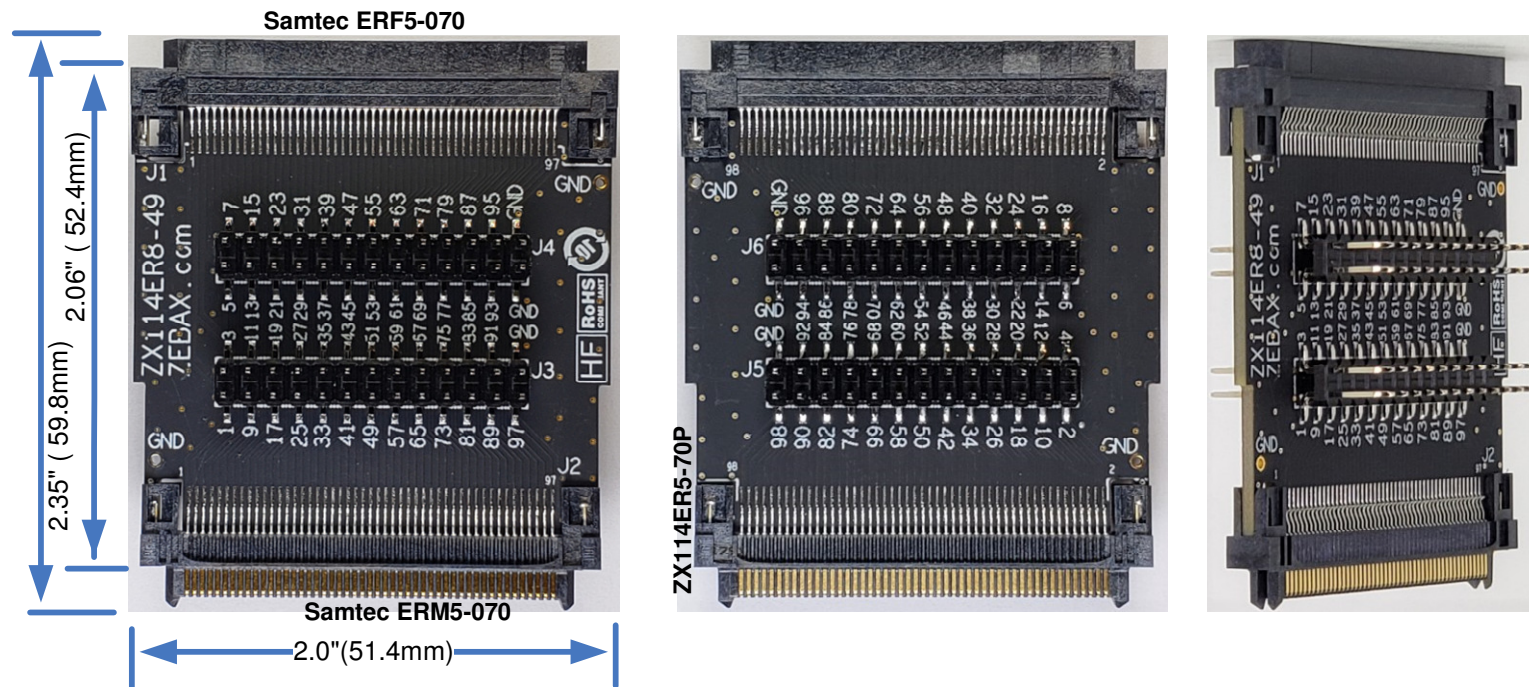
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**Product Name: ZX114ER5-xxP Samtec ERM5 ERF5 Edge Rate rugged Breakout Adapter**

**ZX114ER5-60P** - Two rows x 60 pins per row ERM5 – ERF5 breakout adapter , supporting ERM5-060 & ERF5-060 Samtec Edge Rate rugged connectors



**ZX114ER5-70P** - Two rows x 70 pins per row ERM5 – ERF5 breakout adapter , supporting ERM5-070 & ERF5-070 Samtec Edge Rate rugged connectors



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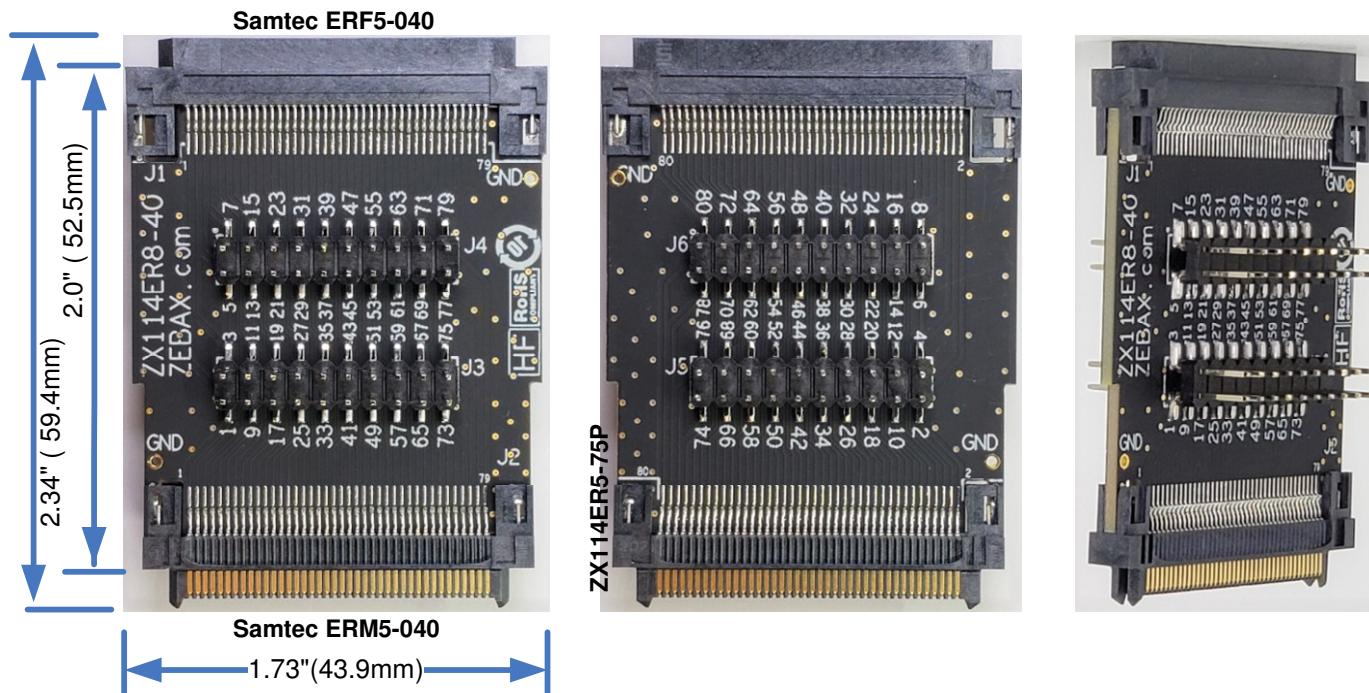
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**Product Name: ZX114ER5-xxP Samtec ERM5 ERF5 Edge Rate rugged Breakout Adapter**

**ZX114ER5-75P** - Two rows x 75 pins per row ERM5 – ERF5 breakout adapter , supporting ERM5-075 & ERF5-075 Samtec Edge Rate rugged connectors



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