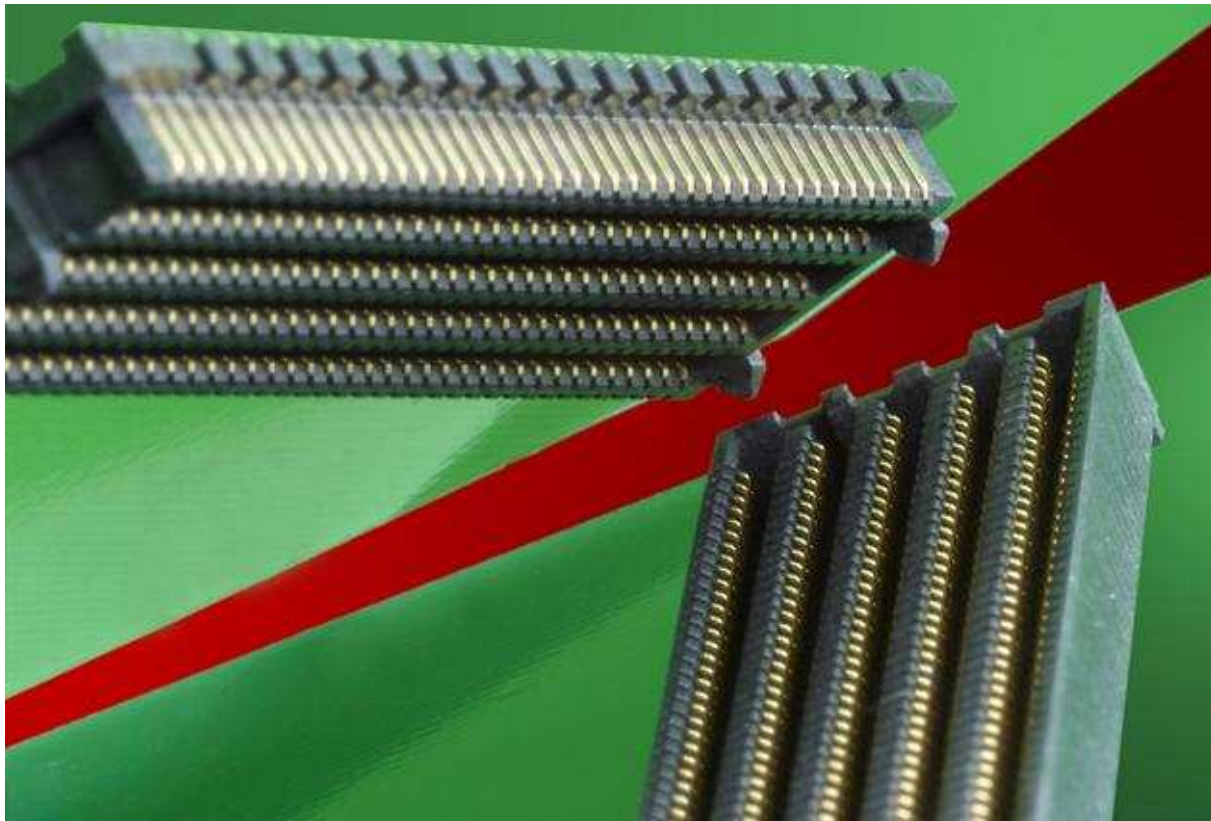


**Product Intermateability Specification for
SEARAY™ High Density Mezzanine Interconnect System**

molex[®]

one company > a world of innovation

samtec



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DOCUMENT NUMBER: PS-45970-002	CREATED / REVISED BY: Molex / Samtec	CHECKED BY: Molex / Samtec	APPROVED BY: Molex / Samtec

1.0 INTRODUCTION

Molex and Samtec have entered a cross licensing agreement for SEARAY™, a high density mezzanine interconnect system. This collaborative agreement requires that both companies provide product that has similar performance and is intermateable. Comparable mechanical performance has been established by dimension verification of the design and materials utilized in manufacturing. The data in this report will support the electrical and mechanical intermateability between Molex and Samtec for SEARAY™.

In order to ensure future product derivatives of SEARAY™ are intermateable, both organizations will conduct regular design reviews. Molex and Samtec are cooperating on a technical level to ensure a dual sourcing strategy can be supported for our end customers. The premise for our licensing agreement is to fulfill the industry needs for assurance of supply, repeatable manufacturing processes, and reliability of the mating interface.

2.0 SCOPE

This specification defines the intermateability requirements including electrical and mechanical performance and test sequences depicting that both the Molex and Samtec SEARAY™ product families are intermateable and the separable interface is compatible. SEARAY™ interconnect system consists of a mated pair of connectors which provide various height combinations to create various PCB stack heights. Product variations used in testing are considered representative of the entire SEARAY™ product family. All variations that are not tooled at the time of testing are considered covered based on test results.

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3.0 PRODUCT DESCRIPTION

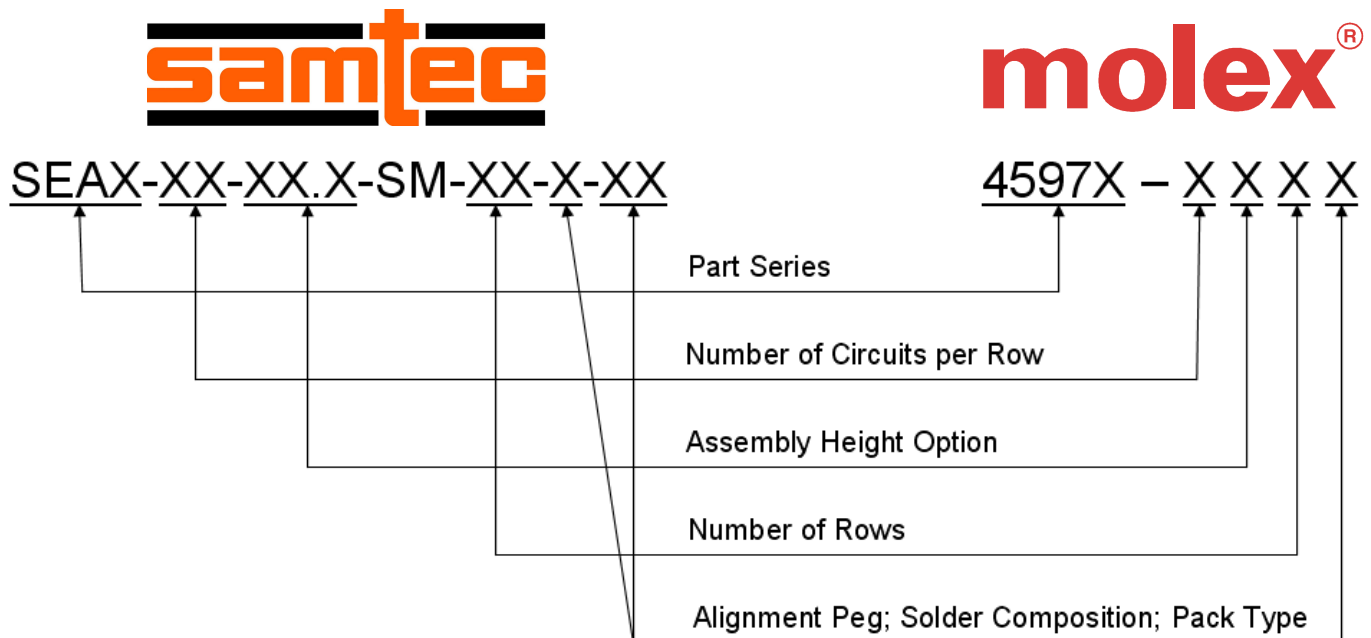
3.1 PRODUCT NAMES (SERIES)

molex [®]	SEARAY™ Plug Connector.....	45970	←
	SEARAY™ Receptacle Connector.....	45971	←
samtec	SEARAY™ Terminal Array Assembly.....	SEAM Series	←
	SEARAY™ Socket Array Assembly.....	SEAF Series	←

3.2 DIMENSIONS, MATERIALS, PLATINGS, AND MARKINGS

Refer to the appropriate sales drawings for information on dimensions, materials, platings, and markings.

3.3 PART NUMBER CONFIGURATION CROSS REFERENCE



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4.0 PERFORMANCE

4.1 ELECTRICAL PERFORMANCE

ITEM	TEST CONDITION	REQUIREMENT
CONTACT RESISTANCE (LOW LEVEL)	Mated, 100mA max, 20mV per EIA-364-TP-23	10 milliohm maximum change
CAPACITANCE	Test per EIA-364-30, All lines switching, with one victim bit	Not to exceed 1.0 picofarad
CHARACTERISTIC IMPEDANCE	Test at 100ps RT (10-90%)	100+/-10% ohms - Diff 50 +/- 10% ohms – SE
CROSSTALK	Test at 100ps RT (10-90%), All lines switching, with one victim bit	5% of signal swing
PROPAGATION DELAY	Measurement made on line while others floating on mated connector	10mm stack – 83 ps 17.5mm stack - 120 ps
DIFFERENTIAL INSERTION LOSS (-3dB)	Mated Connectors Only (not including launches)	10mm – Single Ended – 9 GHz Differential Pair - 12 GHz 17.5mm – Single Ended – 6.5 GHz Differential Pair - 9 GHz

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4.2 MECHANICAL PERFORMANCE

ITEM	TEST CONDITION	REQUIREMENT
MATING FORCE	Mate receptacle and plug connector assemblies per EIA-364-TP-13	0.11 lb (0.50 N) maximum per pin
UNMATING FORCE	Unmate receptacle and plug connector assemblies per EIA-364-TP-13	0.03 lb (0.13 N) minimum per pin
DURABILITY	100 Cycles, mated and unmated per EIA-364-TP-09	10 milliohm max change in LLCR

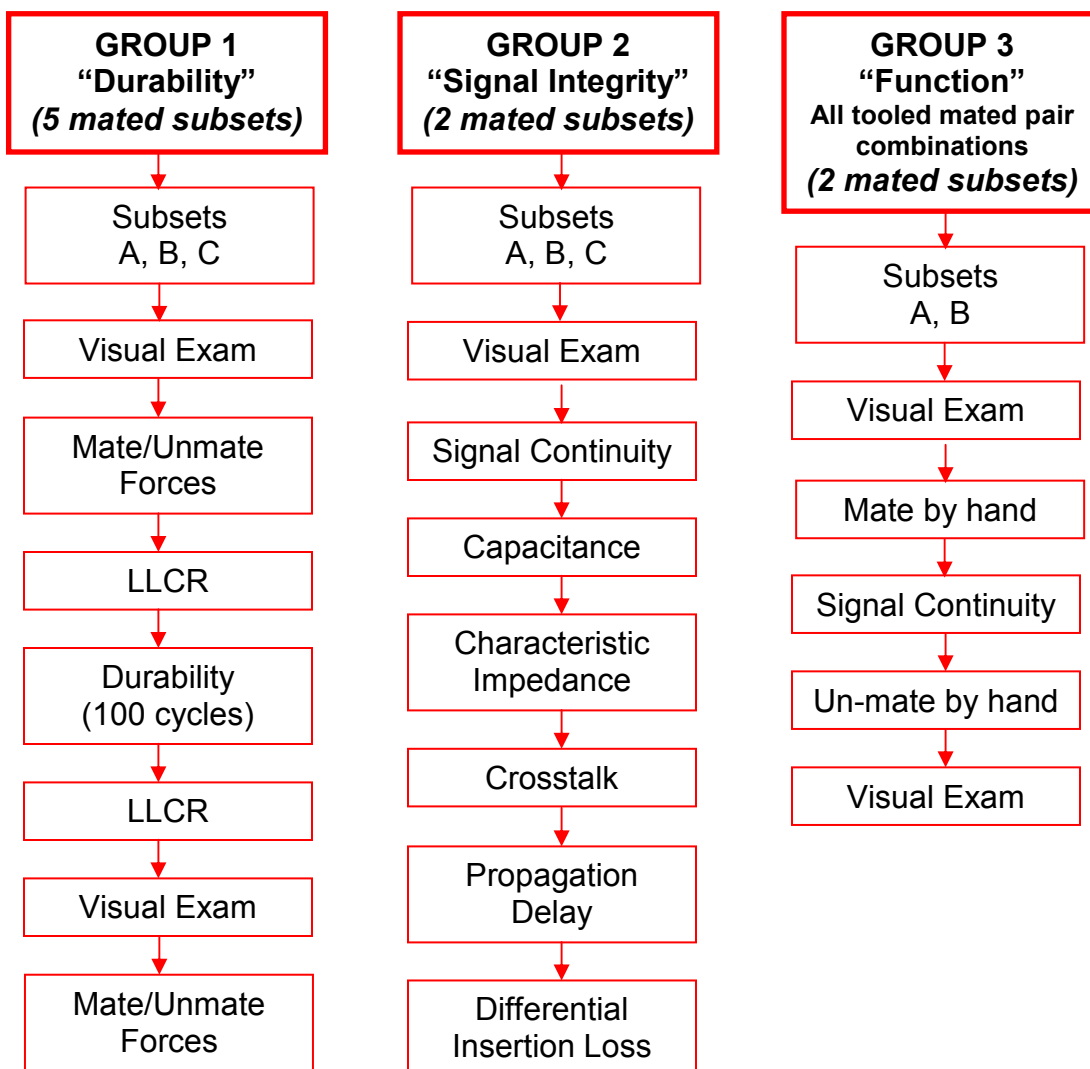
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5.0 TEST SEQUENCES

5.1 TELCORDIA GR-1217-CORE TEST PLAN

Notes:

1. LLCR = Low Level Contact Resistance.
2. Test Subsets:
 - A – Molex Plug to Samtec SEAF Series (Receptacle)
 - B – Molex Receptacle to Samtec SEAM Series (Plug)
 - C – Molex Plug to Molex Receptacle
 - D – Samtec SEAM Series (Plug) to Samtec SEAF Series (Receptacle)



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6.0 CONCLUSION

Molex and Samtec are intermateable and interchangeable allowing dual sourcing strategies to be supported for our customer base. For any questions, please contact Molex or Samtec.

7.0 REVISION HISTORY

Revision Level:	Created / Revised By:	Revision Description:	Date of Revision
A	T. Gregori	Initial Release	11/2/07
B	T. Gregori	Added Prop Delay, Insertion Loss and Mate/Unmate Requirement	3/5/09

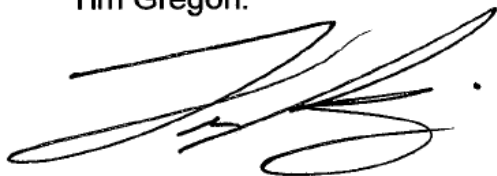
8.0 APPROVALS

(signature and date of signature required)


molex[®]

samtec

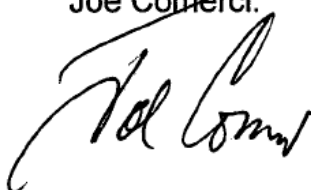
Tim Gregori:



Neal Patterson:



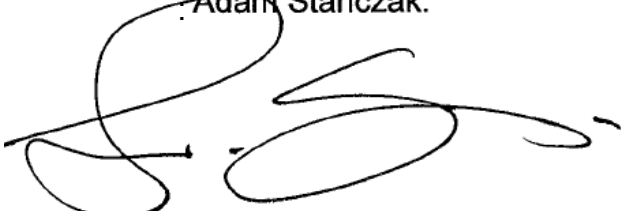
Joe Comerci:



Corey Rose:



Adam Stanczak:



Brian Vicich:



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