

# Molex 70541-0001 PDF

**molex**<sup>®</sup>

深圳创唯电子有限公司 <http://www.molex-connect.com>

## SL HEADER SERIES (TOLLER COMPOUNDER COMPARISON)

### 1.0 SCOPE

This Test Summary covers the 2.54 mm (.100 inch) centerline (pitch) printed circuit board (PCB) connector series with Tin and Gold plating.

Molex's resin manufacturer is adding an additional toller compounder. Global change notification 10659318 has been sent out detailing the change. The testing below verifies that there is no difference in the resin produced by either toller compounders.

### 2.0 PRODUCT DESCRIPTION

#### 2.1 PRODUCT SERIES NUMBERS WITHIN SL HEADER FAMILY

##### **Vertical Header Series:**

70541 (Split Peg)  
70543 (No Peg)  
70545 (Tri-Peg) (Tested part number 70545-0024)  
74099 (SMT No Peg)  
74095 (Compliant Pin)  
70563 (Large Pocket No Peg)

##### **Right Angle Header Series**

70551 (Split Peg)  
70553 (No Peg)  
70555 (Tri-Peg)  
70634 (SMT Tri-Peg)  
74098 (SMT Split Peg)  
74105 (SMT No Peg)  
70575 (Large Pocket Tri-Peg)

##### **Vertical and Right Angle Series Combined**

71164 (Vertical and Right Angle with Voided Circuits)

#### 2.2 PRODUCT SPECIFICATION TITLE AND DOCUMENT NUMBER

Single Row – Stackable Linear (SL) Connector System, **PS-70400**.

Assembly Connector SL Shrouded Header .100/2.54 Grid: Family Index, **PS-70541**.

REVISION: <b>A</b>	ECR/ECN INFORMATION: EC No: <b>UCP2015-2459</b> DATE: <b>2014 / 12 / 12</b>	TITLE: <b>Test Summary for SL Headers - Comparison of Toller Compounds that Produce Housing Resins</b>	SHEET No. <b>1 of 5</b>
DOCUMENT NUMBER: <b>TS-70541-100</b>	CREATED / REVISED BY: <b>DMorgan</b>	CHECKED BY: <b>BBarker</b>	APPROVED BY: <b>SMiller</b>

### 3.0 QUALIFICATION

- 3.1 Compare resin properties from both compounders
- 3.2 Conduct molding trial runs with resin from new compounder
- 3.3 Compare molded housings dimensionally from both compounders
- 3.4 Produce final assemblies with molded housings from both compounders
- 3.5 Compare housing bow on connector assemblies before and after 260°C reflow process from both compounders

### 4.0 DATA

#### 4.1 Resin properties

Compounder (Toller)	Sample	Batch#	Ash content	melt viscosity @ (Single Shear) @ 400 s/1(Pa-S)	Melting point, °C	Tensile Modulus, Mpa	Tensile Stress @ Break, Mpa	Tensile Strain @ Break, %	Flexural Modulus, Mpa	Flexural Stress, Mpa	DTUL @ 1.8 Mpa	Notched Charpy Impact, kJ/m2
Old	1	733280	33.7	242	286.8	11006	106.9	1.3	10638	155.1	244.7	6.4
Old	2	716692	34.4	201		annual skip						
Old	3	716690	34.1	218		annual skip						
Old	4	712130	33.4	201		annual skip						
Old	5	669459	33.6	215		annual skip						
Old	6	635740	34.6	183		11166	104.4	1.42	10851	151	241.0	6.11
New	1	724833	33.3	192	285.7	10828	111.2	1.5	10621	165	247.2	6.4
New	2	723050	33.8	210	285.0	11002	111.5	1.4	10741	162.9	247.0	6.3
New	3	723049	33	163	285.3	10897	112.9	1.4	10647	157.2	248.6	6.4
New	4	708334	35.2	286	285.6	11314	107.8	1.3	10787	159.4	250.5	5.9
New	5	697897	32.6	216	285.6	10727	113.8	1.5	10304	168.6	250.2	6.2
			ISO 3451	ISO 11433	ISO 11357	ISO 527	ISO 527	ISO 527	ISO 178	ISO 178	ISO 75	ISO 179/1eA

#### 4.2 Molding trial runs

A 25 circuit Tri-Peg housing was selected to evaluate. The evaluation consisted of a comparison of the following parameters:

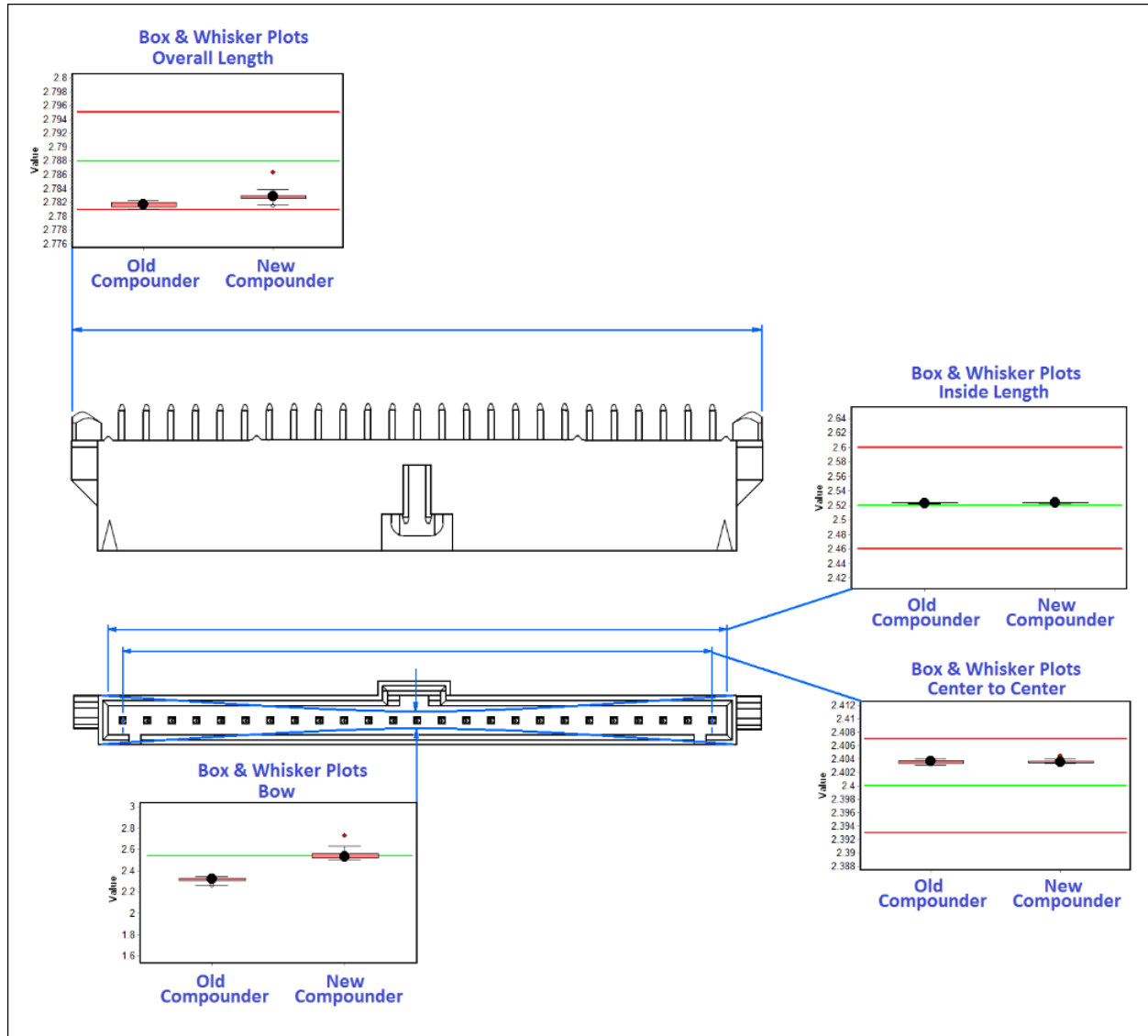
- Injection psi
- Screw Recovery
- Cool Time
- Cycle Time
- Part Weight
- Hold psi
- Hold Time
- Barrel Temperature

The Molding Process Engineer determined there was no difference between the resins produced by either toller compounder.

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### 4.3 Dimensional study from both compounders:

Dimensional checks were performed to insure there was no difference to parts produced with resin from both compounders. The dimensions selected for evaluation are the ones that have the most potential for being impacted by the compounder change, if there was a difference between the plastic resins.



### 4.4 Conducted trial assembly runs with housings run with resin from both compounders

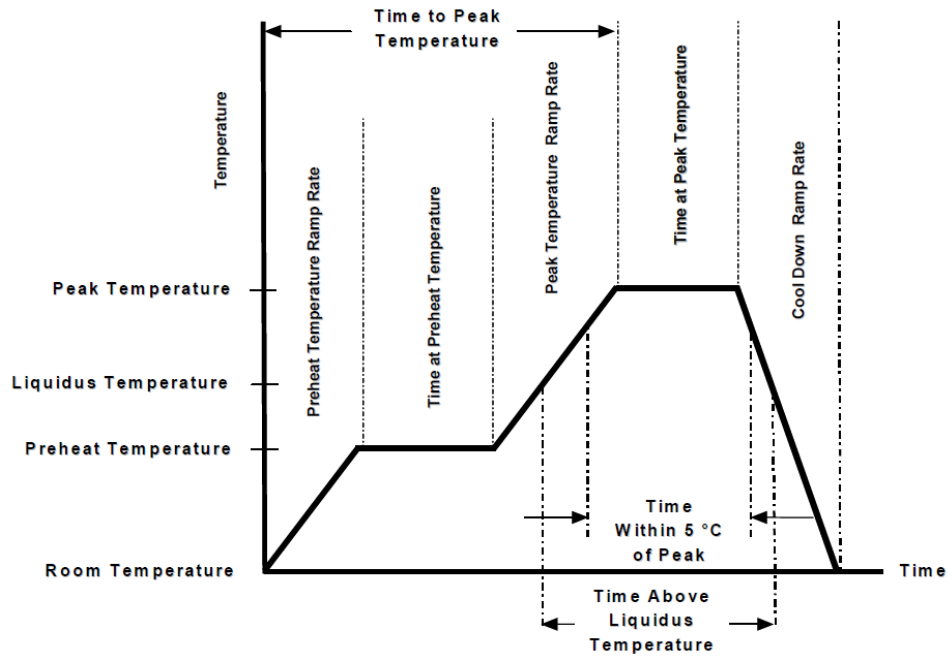
Parts from both resin compounders were run through the assembly process with no issues. Attribute checks were performed on all samples. No defects were observed.

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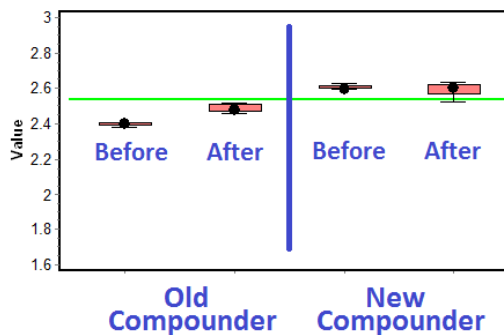
4.5 Heat resistance on final assemblies from both compounders:

To ensure there were no issues with the assemblies reacting to heat, the parts were subjected to three (3) reflow passes per the profile shown below. The peak temperature was 260°C and peak time was 40 seconds.

Molex does not recommend exceeding 245°C.



**Box & Whisker Plots**  
Bow Before & After Reflow



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## 5.0 SUMMARY AND CONCLUSION:

The overall properties of the resin produced by both compounders are well within the manufacturers specifications.

There were no differences in the molding process with resin from either toller compounder.

The assembly process showed no differences using housings molded with resin from either toller compounder.

The dimensional checks were within specification and similar between both compounders

From the results of this evaluation Molex approves the use of resin from either toller compounder.

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70067-0778 TUBE PACAKGING MATRIX

TUBE LENGTH 22.05" - TUBE PAYLOAD LENGTH - 21.45"

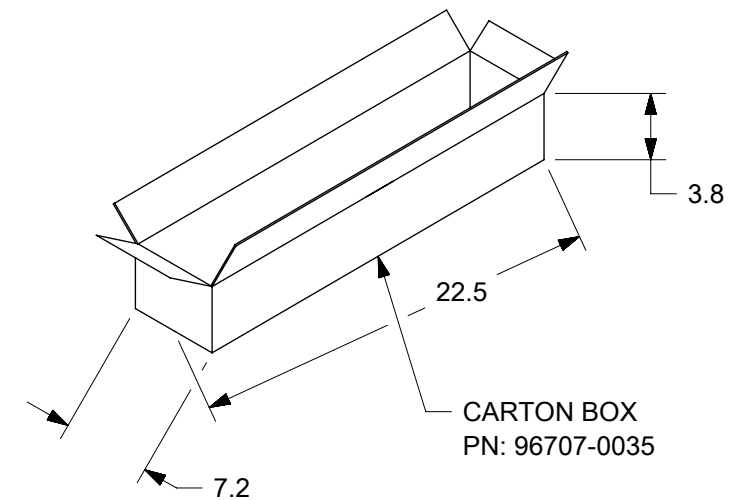
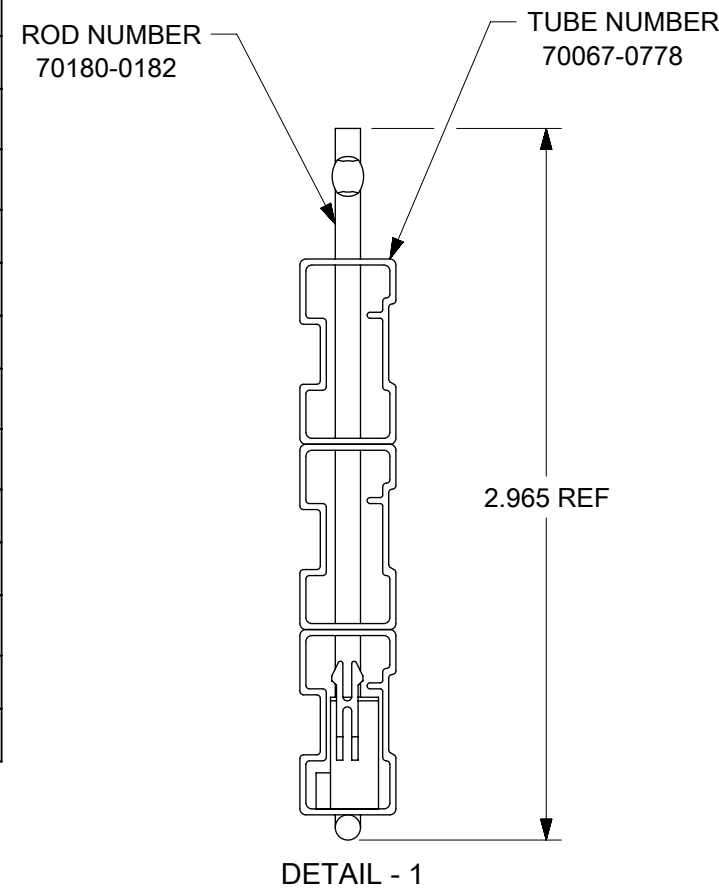
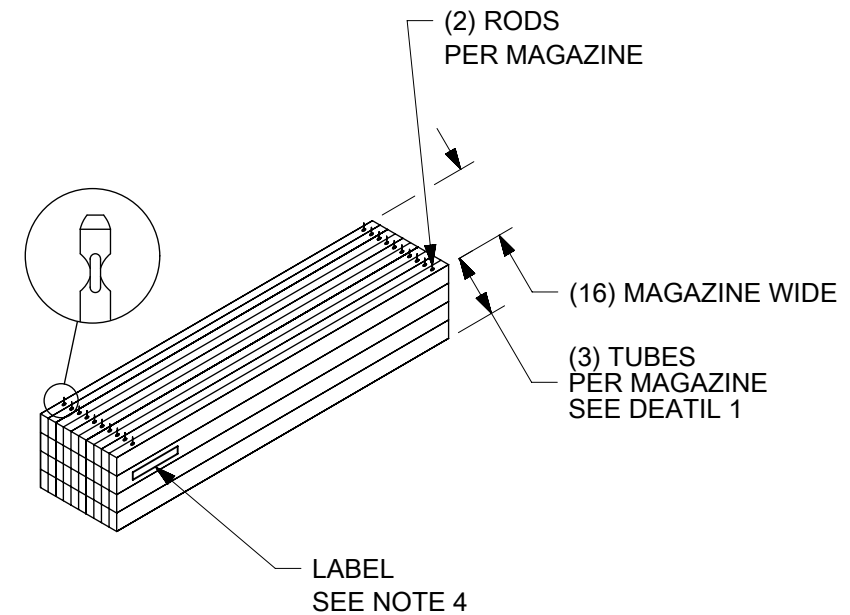
ASSEMBLIES WITHOUT PCB MOUNTING PEGS

ASSEMBLIES WITH PCB MOUNTING PEGS

CKT. SIZE	PARTS PER TUBE	PARTS PER MAGAZINE	PARTS PER CARTON (SPQ)	CKT. SIZE	PARTS PER TUBE	PARTS PER MAGAZINE	PARTS PER CARTON (SPQ)
2	72	216	3456	2	43	129	2064
3	52	156	2496	3	35	105	1680
4	42	126	2016	4	30	90	1440
5	35	105	1680	5	26	78	1248
6	30	90	1440	6	23	69	1104
7	26	78	1248	7	21	63	1008
8	23	69	1104	8	19	57	912
9	21	63	1008	9	17	51	816
10	19	57	912	10	16	48	768
11	17	51	816	11	15	45	720
12	16	48	768	12	14	42	672
13	15	45	720	13	13	39	624
14	14	42	672	14	12	36	576
15	13	39	624	15	11	33	528
16	12	36	576	16	11	33	528
17	11	33	528	17	10	30	480
18	11	33	528	18	10	30	480
19	10	30	480	19	9	27	432
20	10	30	480	20	9	27	432
21	9	27	432	21	8	24	384
22	9	27	432	22	8	24	384
23	8	24	384	23	8	24	384
24	8	24	384	24	7	21	336
25	8	24	384	25	7	21	336

NOTES:

1. STAPLES MAY BE USED TO SET UP CARTON ONLY. CARTON CLOSURES MUST BE DONE WITH TAPES.
2. ORIENT ROD END PARALLEL TO TUBE TO MAXIMIZE TUBE QTYS IN BOX.
3. IF NECESSARY, ADD FOAM SHEET(S) TO FILL CARTON.
4. PLACE ONE TUBE LABEL (85-15-0003) PER MAGAZINE TUBE LABEL TO CONTAIN "PART NUMBER", "WORK ORDER, :BOX NUMBER".



SYMBOLS	THIS DRAWING CONTAINS INFORMATION THAT IS PROPRIETARY TO MOLEX ELECTRONIC TECHNOLOGIES, LLC AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION		
	DIMENSION UNITS	SCALE	CURRENT REV DESC:
▽ = 0	INCH	1:1	EC NO: 617963 DRWN: GJEEVANSURES 2019/05/21 CHK'D: GJEEVANSURES 2019/05/31 APPR: ISHWARG 2019/05/31
▽ = 0	GENERAL TOLERANCES (UNLESS SPECIFIED)		
▽ = 0	ANGULAR TOL ± 0.5°		INITIAL REVISION: DRWN: RFC_PLMIMP 2017/11/10 APPR: DBRINKMA 2000/09/26
▽ = 0	4 PLACES ±		
▽ = 0	3 PLACES ±		DOCUMENT NUMBER: PK-70873-0014   DOC TYPE: PDD   DOC PART: 001   REVISION: J1
▽ = 0	2 PLACES ±		
▽ = 0	1 PLACE ±		MATERIAL NUMBER: GENERAL MARKET   CUSTOMER: GENERAL MARKET   SHEET NUMBER: 1 OF 1
▽ = 0	0 PLACES ±		
■ = 0	DRAFT WHERE APPLICABLE MUST REMAIN WITHIN DIMENSIONS		THIRD ANGLE PROJECTION
▽ = 0			DRAWING: B-SIZE   SERIES: 70873