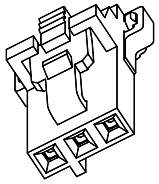
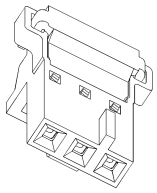
Molex 73838-0006 PDF

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

PRODUCT SPECIFICATION





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NOTE: ALL OF THE ORIGINAL ISOMETRIC ASSEMBLY VIEWS AND FIGURES SHOWN IN THIS PRODUCT SPEC CAN BE FOUND IN FILE: F:\SHARED\SPECS\SLTRS*73838ps.dgn*

1.0 ***SCOPE***

This specification is intended to define the mechanical performance requirements of the SL connector assemblies with the Terminal Position Assurance device. This device is intended to provide additional retention for terminals that have been properly installed and seated in the housing.

2.0 ***PRODUCT DESCRIPTION:***

2.1 The product is available in this single row configuration with 2 - 8 circuits on (2.54mm) .100in. centerline spacing. Assemblies of this configuration are

PRODUCT NAME	DRAWING NUMBER
Terminal Position Assurance For SL Crimp Housing	SD-73838-004
Terminal Position Assurance Latch Insert	SD-74109-0001
Housing, SL Crimp, For Terminal Position Assurance	SD-70066-386
Terminal - Box Crimp	SD-70058-****(-0004 thru -0226)
Terminal - Box Crimp High Force Contact	SD-71851-****(-0004 thru -0226)

2.2 Safety Agency Approvals:

UL File Number E29179
CSA File Number LR19980

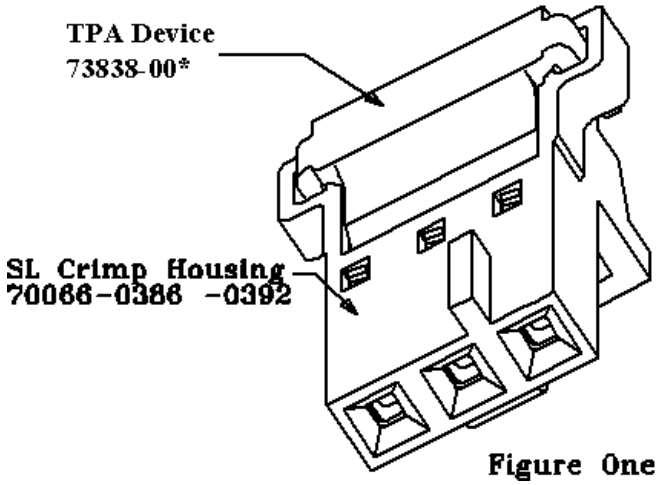


Figure One

3.0 ASSEMBLY INSTRUCTIONS:

Terminal Installation:

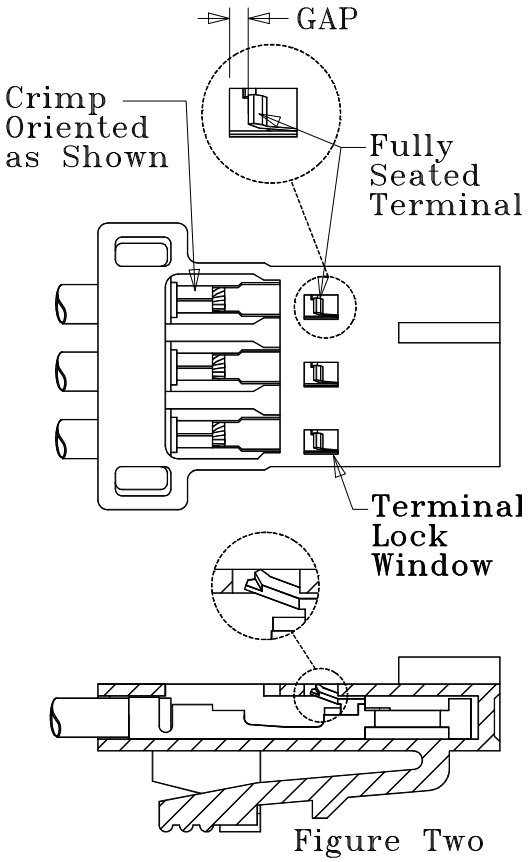


Figure Two

TPA Installation

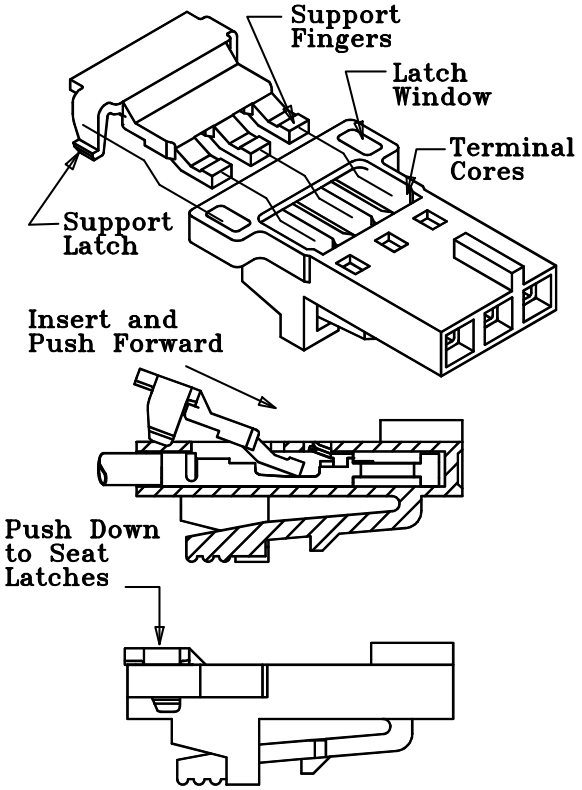
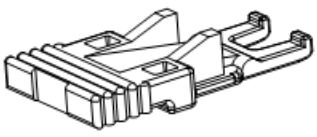
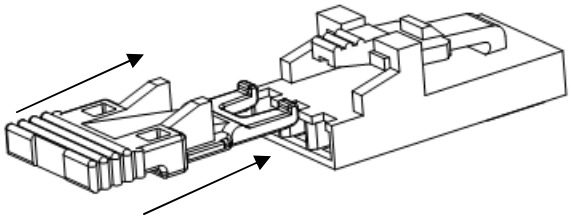


Figure Three

TPA G Latch insert (Optional)



Push under latch until stop



3.0 ***ASSEMBLY INSTRUCTIONS CONT'D:***

3.1 Terminal Installation (Fig. Two):

Orient the crimp terminal assembly with the latch toward the large openings. Push the crimp terminal assembly into the housings until the latch is visible thru the terminal lock window as indicated in figure two.

Visually inspect all terminals for proper latch seating and crimp orientation as shown in figure two before proceeding with TPA installation.

Improper terminal orientation may prevent the insertion of the TPA support fingers into the terminal cores. Failure to recognize improperly oriented terminals prior to attempting to install may cause damage to the TPA.

Terminals not fully seated may prevent alignment of the latches and therefore may cause damage to the TPA.

3.2 Terminal Position Assurance (TPA) Installation: (Fig. Three)
Align the TPA support fingers with the terminal cores. Tilt TPA and insert fingers into the terminal cores. Push the TPA forward until the support latches align with the latch windows on the sides of the housing. Push down on TPA to secure latches. Verify latching on each side of housing. See figure three for graphics and more details.

4.0 ***PERFORMANCE CRITERIA:***

4.1 Mechanical Performance:
4.1.1 Terminal Retention: (See Table One, Items 2 and 6)

a) -The retention force for a terminal without the TPA to exceed 4.0 lbs. (17.8 N)
b) -The retention force for a terminal with the TPA to exceed 8.0 lbs. (35.6 N).
-(forces applied at a rates of 1.0 in per minute. (25.4 mm / min.)

4.1.2 70066 Housing Mating Latch Strength: ("G" latch option) (See Table One Item 5)

-The mated assembly to withstand 15 lbs (67.2N) for 60 seconds applied directly to the housing.

4.1 Mechanical Performance (cont'd):

4.1.3 Terminal Mating/Unmating Forces:

- Insertion force not to exceed 1.0 lb (4.45 N) per contact (70058).
- Insertion force not to exceed 3.0 lb (13.34 N) per contact (71851).
- Withdrawal force 0.125 lb (0.56 N) minimum per contact (70058).
- Withdrawal force 0.375 lb (1.67 N) minimum per contact (71851).

4.1.4 Terminal Insertion Forces: (See Table, One Item 3)

-The force to install the terminal into the housing shall not exceed 3.0 lbs (13.45N).

4.1.5 Vibration:

-Mated assemblies to withstand Vibration per mil-std 202 method 201, 10-55-10 HZ 1 min. cycles, 2 hr. ea. axis .03 excursion, 10 G's. Visual inspection of this assembly to show no deleterious effects from this exposure.

4.1.6 Mechanical Shock:

-Mated assemblies to withstand Mechanical Shock per mil-std -202 method 213, 50 G's, 3 shock per axis, . Visual inspection assembly to show no deleterious effects from this exposure.

4.2 Environmental Performance:

4.2.1 Thermal Shock:

-Mated assemblies to withstand 10 cycles, -40 to +105 deg. C , ½ hr dwell, per mil-std-202, method 107D. Visual inspection assembly to show no deleterious effects from this exposure.

4.2.2 Thermal Age:

-Mated assemblies to withstand 240 hours at 105 deg C, per mil-std-202, method 108A. Visual inspection assembly to show no deleterious effects from this exposure.

4.2 Environmental Performance Cont'd:

4.2.3 Cyclic Humidity:

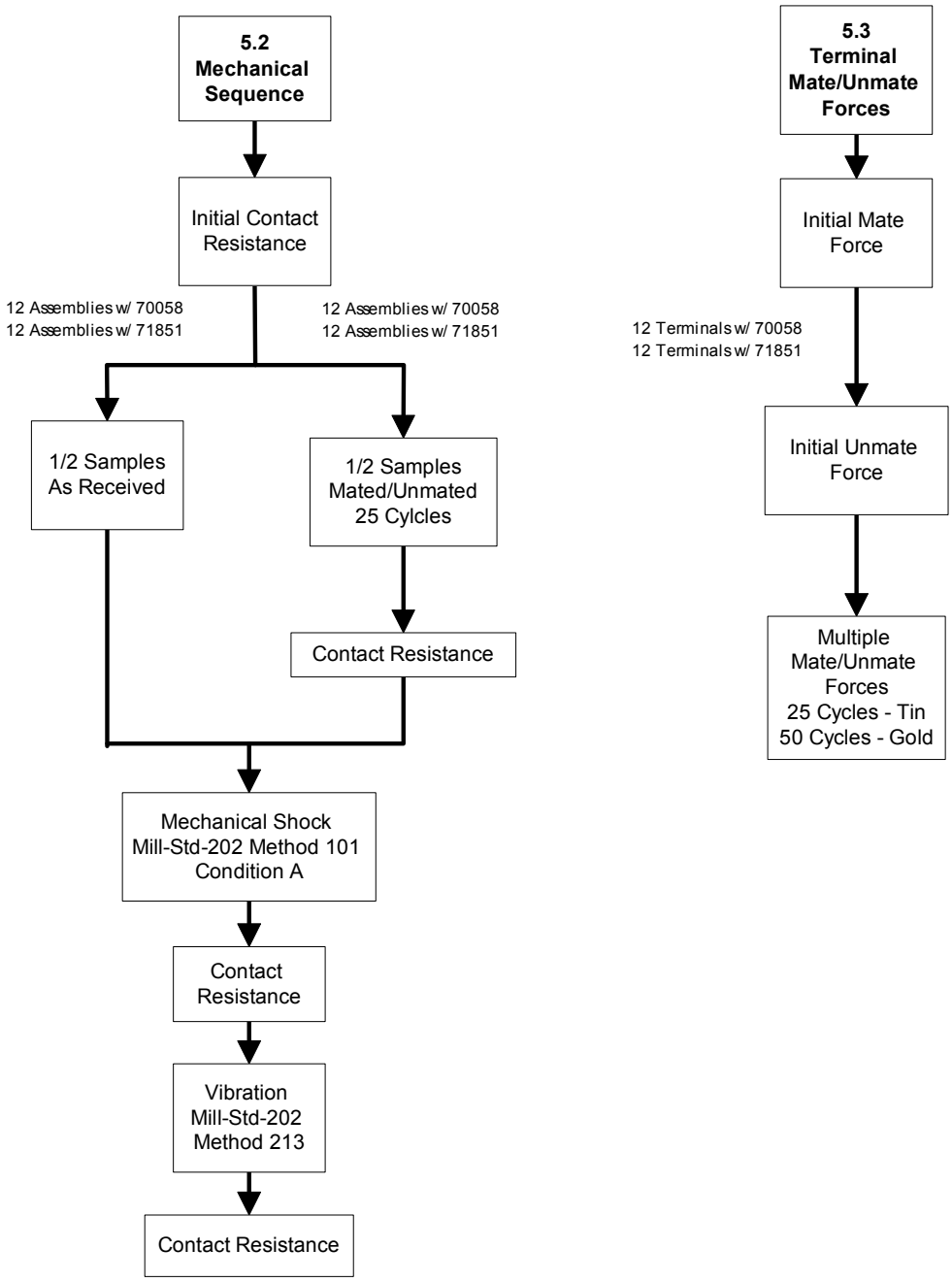
-Mated assemblies to withstand 240 hours of cyclic humidity, +25 to 65 deg. C, 90 to 95% R.H., per mil-std-202, method 106E, omitting steps 7a & 7b. Assemblies to show no deleterious effects from this exposure.

5.0 ***TEST PLAN:***

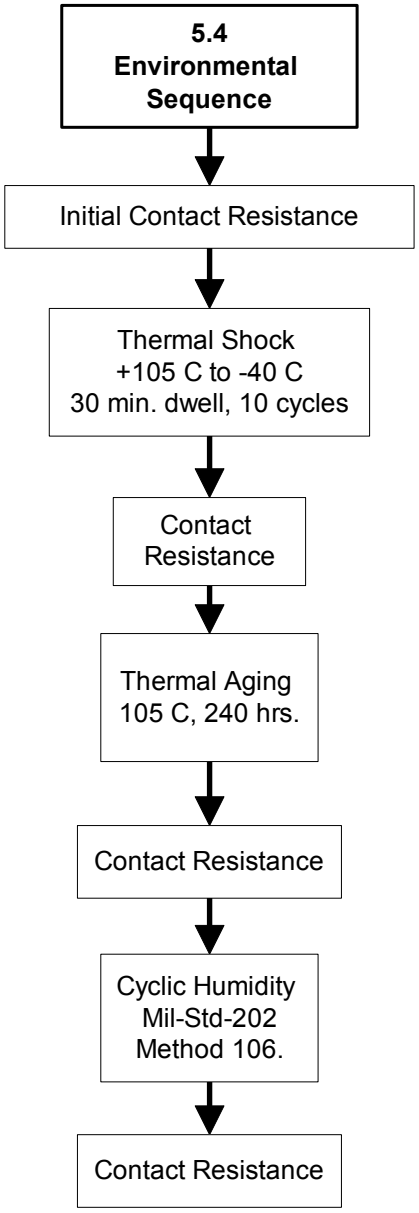
5.1 Terminal Retention Performance Characteristics.

ITEM	TEST CATEGORY AND DESCRIPTION	TABLE ONE: TEST METHODS	ACCEPTANCE CRITERIA	REFERENCE	SAMPLE SIZE
1	**BASELINE CRIMP STRENGTH TERMINAL ONLY**	Crimp terminal 70058 or 71851 to a 22 awg wire. Perform pull test, record type of failure and force value at which it occurred.	8.0 lbs min. (35.6 N)		5 terminals
2	**BASELINE, SINGLE TERMINAL RETENTION STANDARD HOUSING.**	Insert a 70058 or 71851 terminal , crimped to 22 awg wire , into the center cavity of the housing. Pull the terminal out of the housing , and record the value of force required to extract the terminal.	4.0 lbs min. (17.8 N)	4.1.1a	5 terminals
3	**BASELINE, CORRECT TERMINAL ORIENTATION INSERTION FORCE**	Insert a 70058 or 71851 terminal , crimped to 22 awg wire , into the center cavity of a standard housing and record the value of force required to seat the terminal to properly latch.	3.0 lbs max. (13.34 N)	4.1.4	5 terminals
4	**BASELINE, 90 DEG TERMINAL ORIENTATION INSERTION FORCE**	Rotate a crimped terminal 90 deg from normal orientation and record the force required to insert the terminal to the depth that would allow latching if oriented properly	Greater than 3.0 lbs (13.34 N)		5 terminals
5	**BASELINE, SYSTEM TEST, MATING RETENTION**	Apply pull force to all three leads on a fully loaded connector assembly while mated to an appropriate header assembly. Record failure modes (terminals, connector latch...) and force at failure.	Connector latch 15 lbs (66.7 N) for 60. seconds	4.1.2	5 assemblies
6	**TERMINAL RETENTION WITH TERMINAL RETENTION SUPPORT**	Insert a 70058 or 71851 terminal , crimped to 22 awg wire , into the center cavity of a TPA housing. Install the TPA. Pull the terminal out of the housing , and record the value of force required to extract the term.	8.0 lbs min. (35.6 N)	4.1.1b	15 terminals 5 in each circuit
7	**POSSIBILITY TESTING 90 DEG TERMINAL, TRY TO INSTALL TPA, NO DAMAGE**	Using samples from item 4 above, attempt to install the TPA into the housing without damaging the TPA or housing. Record the results and /or damage. (Use samples from group 4 above)	Not able to put in TPA with out visible damage.		5 terminals
8	**POSSIBILITY TESTING, PARTIALLY SEATED TERMINAL, TPA, RETENTION**	Partially insert a 70058 or 71851 terminal , crimped to 22 awg wire , into the center cavity of a TPA housing just prior to latching the terminal. Install the TPA. Pull the terminal out of the housing , and record the value of force required.	8.0 lbs min. (35.6 N)		5 terminals

5.0 ***TEST PLAN cont'd***



5.0 ***TEST PLAN cont'd***



6.0 **PACKAGING**

6.1 Recommended Packaging:

Parts shall be packaged according to the packaging documents that are referenced on the product drawings.

7.0 QUALITY ASSURANCE PROVISIONS

7.1 Material Inspection:

Shall consist of certification supported by verifying data.

7.2 Acceptance Inspection:

Acceptance of ongoing production product shall be determined by inspection according to Molex approved quality plans and required PPM levels for critical characteristics.

8.0 QUALIFICATION REQUIREMENTS

8.1 Calibration of Equipment and Inspection Facilities
Shall be maintained per MIL-C-45662

8.2 Qualification Testing
Shall be performed per:

1. Samples for testing shall be representative of normal production lots.
2. The minimum number of samples shall be as referenced in section 5.0 (Test Plan).

9.0 **TEST SUMMARY**

ITEM	TEST CATEGORY AND DESCRIPTION	REQUIREMENT	UNITS	MEAN	MINIMUM	MAXIMUM
1	**BASELINE CRIMP STRENGTH TERMINAL ONLY**	8.0 min. (35.6 min.)	Lbs. (Newtons)	18.99	18.64	19.54
2	**BASELINE, SINGLE TERMINAL RETENTION STANDARD HOUSING.**	4.0 min. (17.8 min.)	Lbs. (Newtons)	6.6	5.85	7.4
3	**BASELINE, CORRECT TERMINALORIENTATION INSERTION FORCE**	3.0 max. (13.34 max.)	Lbs. (Newtons)	1.84	1.4	2.45
4	**BASELINE, 90 DEG TERMINAL ORIENTATION INSERTION FORCE**	3.0 min. (13.34 min.)	Lbs. (Newtons)	7.45	6.35	9.83
5	**BASELINE, SYSTEM TEST, MATING RETENTION**	15.0 min. (66.7 min.)	Lbs. (Newtons)	19.49	18.86	20.68
6	**TERMINAL RETENTION WITH TERMINAL RETENTION SUPPORT**	8.0 min. (35.6 min.)	Lbs. (Newtons)	12.16	9.43	16.35
7	**POSSIBILITY TESTING 90 DEG TERMINAL, TRY TO INSTALL TPA ,NO DAMAGE**	Not able to put in TPA without visible damage.	----	CAN NOT		
8	**POSSIBILITY TESTING, PARTIALLY SEATED TERMINAL, TPA, RETENTION**	8.0 min. (35.6 min.)	Lbs. (Newtons)	13.88	12.68	16.3

9.0 ***TEST SUMMARY cont'd***

70058 - MECHANICAL SEQUENCE 5.2						
TEST CONDITION	TREATMENT	REQUIREMENT	SAMPLE SIZE	MEAN	MINIMUM	MAXIMUM
Initial	Contact Resistance Values	30 milliohms max	72	13.68	12.63	16.87
Delta-R (vs Initial)	Post Mate/Unmate Cycling	10 milliohms max. change from initial	36	-0.25	-2.18	0.88
	Post Mechanical Shock - Uncycled	10 milliohms max. change from initial	36	1.22	0.41	4.09
	Post Mechanical Vibration - Uncycled	10 milliohms max. change from initial	36	0.35	-0.09	2.11
	Post Mechanical Shock - 25 Cycles	10 milliohms max. change from initial	36	-0.08	-2.29	0.4
	Post Mechanical Vibration - 25 Cycles	10 milliohms max. change from initial	36	-0.61	-2.37	-0.09

71851 - MECHANICAL SEQUENCE 5.2						
TEST CONDITION	TREATMENT	REQUIREMENT	SAMPLE SIZE	MEAN	MINIMUM	MAXIMUM
Initial	Contact Resistance Values	30 milliohms max	72	12.35	11.45	15.5
Delta-R (vs Initial)	Post Mate/Unmate Cycling	10 milliohms max. change from initial	36	0.2	-0.44	2.53
	Post Mechanical Shock - Uncycled	10 milliohms max. change from initial	36	0.89	0.26	5.2
	Post Mechanical Vibration - Uncycled	10 milliohms max. change from initial	36	0.43	0.04	2.99
	Post Mechanical Shock - 25 Cycles	10 milliohms max. change from initial	36	-0.02	-1.5	0.24
	Post Mechanical Vibration - 25 Cycles	10 milliohms max. change from initial	36	-0.33	-1.63	0.04

9.0 ***TEST SUMMARY cont'd***

70058 - MATING FORCE SEQUENCE 5.3						
TEST CONDITION	TREATMENT	PLATING	UNITS	MEAN	MINIMUM	MAXIMUM
Insertion Force	Initial	Tin	LB / (N)	0.73 / (3.24)	0.62 / (2.74)	0.82 / (3.63)
		Gold	LB / (N)	0.39 / (1.75)	0.28 / (1.25)	0.59 / (2.62)
	After 25 Cycles	Tin	LB / (N)	0.75 / (3.32)	0.64 / (2.83)	0.89 / (3.94)
	After 50 Cycles	Gold	LB / (N)	0.44 / (1.96)	0.27 / (1.19)	0.55 / (2.44)
Withdrawal Force	Initial	Tin	LB / (N)	0.97 / 4.31)	0.79 / (3.52)	1.05 / (4.65)
		Gold	LB / (N)	0.29 / (1.28)	0.20 / (0.89)	0.44 / (1.97)
	After 25 Cycles	Tin	LB / (N)	0.77 / (3.43)	0.68 / (3.04)	0.90 / (4.02)
	After 50 Cycles	Gold	LB / (N)	0.38 / (1.69)	0.29 / (1.29)	0.56 / (2.50)

71851 - MATING FORCE SEQUENCE 5.3						
TEST CONDITIO N	TREATMENT	PLATING	UNITS	MEAN	MINIMUM	MAXIMUM
Insertion Force	Initial	Tin	LB / (N)	2.39 / (10.62)	2.24 / (9.96)	2.53 / (11.25)
		Gold	LB / (N)	0.99 / (4.39)	0.91 / (4.05)	1.05 / (4.67)
	After 25 Cycles	Tin	LB / (N)	2.18 / (9.71)	1.60 / (7.12)	2.82 / (12.54)
	After 50 Cycles	Gold	LB / (N)	1.01 / (4.48)	0.86 / (3.83)	1.17 / (5.20)
Withdrawal Force	Initial	Tin	LB / (N)	2.68 / (11.92)	2.28 / (10.14)	3.18 / (14.15)
		Gold	LB / (N)	0.69 / (3.07)	0.62 / (2.76)	0.77 / (3.43)
	After 25 Cycles	Tin	LB / (N)	2.70 / (12.02)	1.79 / (7.96)	4.23 / (18.82)
	After 50 Cycles	Gold	LB / (N)	1.07 / (4.76)	0.84 / (3.74)	1.25 / (5.56)

70058 - ENVIRONMENTAL SEQUENCE 5.4						
TEST CONDITION	TREATMENT	REQUIREMENT	SAMPLE SIZE	MEAN	MINIMUM	MAXIMUM
Contact Resistance	Initial	30 milliohms max.	112	14.44	13.36	16.54
	Following Durability	10 milliohms max. change from initial	56	-0.02	-0.4	0.93
	Following Thermal Shock	10 milliohms max. change from initial	111	-0.12	-1.48	1.12
	Following Thermal Aging	10 milliohms max. change from initial	110	0.04	-1.37	1.35
	Following Cyclic Humidity	10 milliohms max. change from initial	110	-0.08	-1.44	1.25

9.0 ***TEST SUMMARY cont'd***

71851 - ENVIRONMENTAL SEQUENCE 5.4						
TEST CONDITION	TREATMENT	REQUIREMENT	SAMPLE SIZE	MEAN	MINIMUM	MAXIMUM
Initial	Contact Resistance Values	30 milliohms max.	120	15.36	14.92	15.75
Delta-R (vs Initial)	Post Durability	10 milliohms max. change from initial	120	0.33	0.32	0.42
	Post Thermal Shock	10 milliohms max. change from initial	120	-0.26	-0.32	-0.45
	Post Thermal Aging	10 milliohms max. change from initial	120	0.21	0.09	0.62
	Post Cyclic Humidity	10 milliohms max. change from initial	120	-0.13	-0.22	-0.33