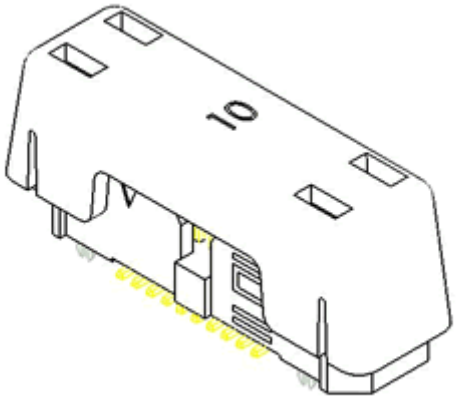
Project Number:	Tracking Code: TC0333--0251		
Requested by: John Reid	Date: 8/12/2003	Product Rev: 1	
Part #: ECF-25	Lot #: 08/05/03	Tech: Troy Cook	Eng: John Tozier
Part description: ECF			Qty to test: 10
Test Start: 08/15/2003	Test Completed: 8/15/2003		



Mating/Unmating

PART DESCRIPTION

ECF-25

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Part description: ECF	

CERTIFICATION

All instruments and measuring equipment were calibrated to National Institute for Standards and Technology (NIST) traceable standards according to IS0 10012-l and ANSI/NCSL 2540-1, as applicable.

SCOPE

To perform the following tests: Test fore to mate and unmate cap on to EHF assembly.

APPLICABLE DOCUMENTS

Standards: EIA Publication 364

TEST SAMPLES AND PREPARATION

1) All materials were manufactured in accordance with the applicable product specification.
2) All test samples were identified and encoded to maintain traceability throughout the test sequences.
3) After soldering, the parts to be used for LLCR testing were cleaned according to TLWI-0001:
   a) Sample test boards are to be ultrasonically cleaned after test lead attachment, preparation and/or soldering using the following process.
   b) Sample test boards are immersed into Branson 3510 cleaner containing Kyzen Ionox HC1 (or equivalent) with the following conditions:
      i) Temperature: ----------55° C+/- 5° C
      ii) Frequency:----------40 KHz
      iii) Immersion Time: ----------5 to 10 Minutes
      iv) Sample test boards are removed and placed into the Branson 3510 cleaner containing deionized water with the following conditions:
      v) Temperature: ----------55° C +/- 5° C
      vi) Frequency:----------40 KHz
      vii) Immersion Time: ----------5 to 10 Minutes
      viii) Sample test boards are removed and placed in a beaker positioned on a hot plate with a magnetic stirrer containing deionized water warmed to 55° C +/- 5° C for 1/2 to 1 minute
   c) Upon removal, the sample test boards are rinsed for 1/2 to 1 minute in room temperature free flowing deionized water.
   d) After the final rinse, the sample test boards are dried in an air-circulating oven for 10 to 15 minutes at 50° C +/- 5° C
   e) Sample test boards are then allowed to set and recover to room ambient condition prior to testing.
4) Parts not intended for testing LLCR and DWV/IR are visually inspected and cleaned if necessary.
5) Any additional preparation will be noted in the individual test procedures.

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ATTRIBUTE DEFINITION

Following is a brief, simplified description of attributes.

MATING/UNMATING:

1) Reference document: EIA-364-13, *Mating and Unmating Forces Test Procedure for Electrical Connectors*.
2) The full insertion position was to within 0.003" to 0.004" of the plug bottoming out in the receptacle to prevent damage to the system under test.
3) One of the mating parts is secured to a floating X-Y table to prevent damage during cycling.

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RESULTS

Mating – Unmating Forces

- **Initial**
  - **Mating**
    - **Min ---------- 3.74 lbs.**
    - **Max---------- 5.86 lbs.**
  - **Unmating**
    - **Min ---------- 4.69 lbs.**
    - **Max---------- 8.46 lbs.**
- **After 5 Cycles**
  - **Mating**
    - **Min ---------- 4.32 lbs.**
    - **Max---------- 5.67 lbs.**
  - **Unmating**
    - **Min ---------- 2.82 lbs.**
    - **Max---------- 5.37 lbs.**
- **After 10 Cycles**
  - **Mating**
    - **Min ---------- 4.75 lbs.**
    - **Max---------- 5.62 lbs.**
  - **Unmating**
    - **Min ---------- 2.19 lbs.**
    - **Max---------- 3.89 lbs.**

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DATA SUMMARIES

MATING/UNMATING:

	Initial			
	Mating		**Unmating**	
	Force (Oz)	Force (Lbs)	Force (Oz)	Force (Lbs)
Minimum	59.8	3.74	75.0	4.69
Maximum	*93.8*	*5.86*	*135.4*	*8.46*
Average	***75.1***	***4.70***	***96.2***	***6.01***

	After 5 Cycles			
	Mating		**Unmating**	
	Force (Oz)	Force (Lbs)	Force (Oz)	Force (Lbs)
Minimum	69.1	4.32	45.1	2.82
Maximum	*90.7*	*5.67*	*85.9*	*5.37*
Average	***77.2***	***4.83***	***63.6***	***3.98***

	After 10 Cycles			
	Mating		**Unmating**	
	Force (Oz)	Force (Lbs)	Force (Oz)	Force (Lbs)
Minimum	76.0	4.75	35.0	2.19
Maximum	*89.9*	*5.62*	*62.2*	*3.89*
Average	***83.2***	***5.20***	***49.5***	***3.09***

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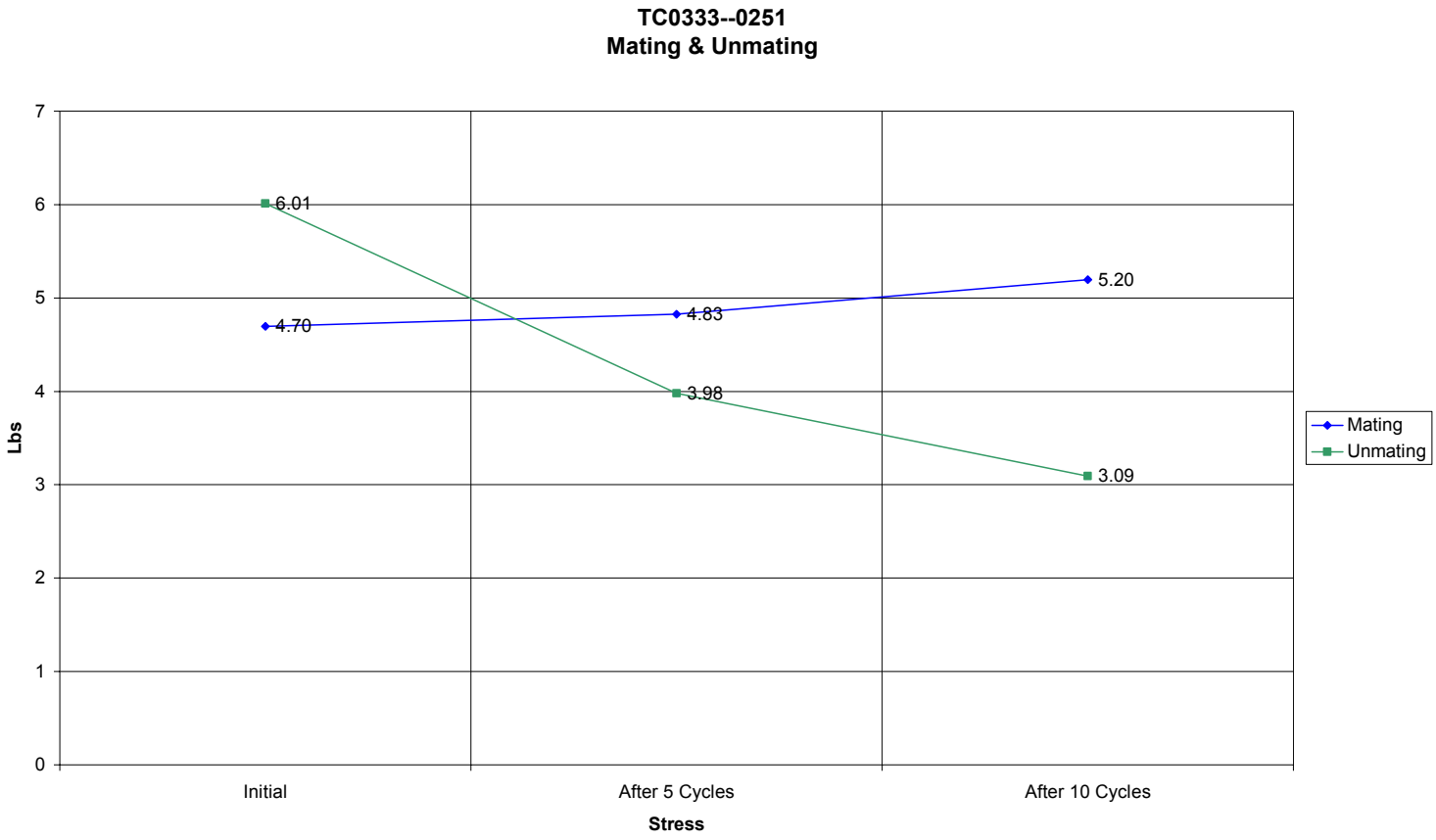
DATA SUMMARIES Continued



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Part description: ECF	

DATA

MATING/UNMATING:

8/22/2003
Troy Cook
24
57%
TCT-03
LC-2500N(icell)

ECF-25

Initial

	Mating		Unmating	
Sample#	Force (Oz)	Force (Lbs)	Force (Oz)	Force (Lbs)
1	70.1	4.38	75.0	4.69
2	93.8	5.86	78.4	4.90
3	76.8	4.80	135.4	8.46
4	59.8	3.74	95.8	5.99

After 5 Cycles

	Mating		Unmating	
Sample#	Force (Oz)	Force (Lbs)	Force (Oz)	Force (Lbs)
1	69.1	4.32	45.1	2.82
2	90.7	5.67	60.0	3.75
3	75.2	4.70	85.9	5.37
4	73.9	4.62	63.5	3.97

8/22/2003
Troy Cook
24
57%
TCT-03
LC-2500N(icell)

After 10 Cycles

	Mating		Unmating	
Sample#	Force (Oz)	Force (Lbs)	Force (Oz)	Force (Lbs)
1	76.0	4.75	35.0	2.19
2	89.9	5.62	41.4	2.59
3	78.9	4.93	62.2	3.89
4	87.8	5.49	59.2	3.70

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EQUIPMENT AND CALIBRATION SCHEDULES

Equipment #: THL-01
Description: Temperature/Humidity Chart Recorder
Manufacturer: Dickson
Model: THDX
Serial #: 9316255
Accuracy: Temp: +/- 1C; Humidity: +/-2% RH (0 - 60%) +/- 3% RH (61 - 95%).
… Last Cal: 7/15/02, Next Cal: 7/15/03

Equipment #: TCT-03
Description: Dillon Quantrol TC2 Test Stand
Manufacturer: Dillon Quantrol
Model: TC2
Serial #: 02-1033-03
Accuracy: Speed Accuracy: +/- 5% of indicated speed; Displacement: +/- 5 micrometers.
… Last Cal6/12/03, Next Cal: 6/12/04

Equipment #: LC-2500N(icell)
Description: 2500 N Load Cell for Dillon Quantrol
Manufacturer: Dillon Quantrol
Model: icell
Serial #: 01-0132-01
Accuracy: .10% of capacity
… Last Cal: 3/27/03, Next Cal: 3/27/04