



Product / Process Change Notice

PCN No:	PCN15-2017	Date of issuance	April 12, 2017
Supplier:	AMS	Originator:	L.Lambert

Affected Items:

TSL1402R Linear Sensor Array

Proposed Change:

Changing of metal plating at Multek from their soft gold plating process to their standard ENEPIG (Electroless Nickel, Electroless Palladium, Immersion Gold) plating system.

The PCB manufacturing, and part assembly all remains the same.

Reason for change:

The shutting down of Multek line of soft electroplated NiAu due to lack of volume.

Validation plan:

Initial material will be released based on verification of bond pull, ball shear, and plating thickness. Samples of production material will be qualified with temperature cycling of 500 cycles of -40C to +85C.

Final test will include analysis of yield, and of any continuity failures. Material will be subjected to our standard Material Review Board for ongoing production to detect any non-normal lots.

Schedule:

Initial manufacturing data attached.

Qualification is completed.

Results and Conclusion:

Initial inline quality report and final qualification report attached.

Conclusion is that the part is released to production.



Timing of change:

TSL1402R: 16 weeks leadtime after PCN approval

(* We are pleased to accept Last Time Buy orders until June 30, 2017. Last shipments will be done by Dec.29, 2017.

If you do have further questions please do not hesitate to contact us.

Please be advised that this PCN is prerequisite to support LTB orders for TSL1402R

Best regards,
ams AG

A handwritten signature in blue ink, appearing to read 'R. Rogy'.

Reinhard Rogy
Senior Manager Technical Operations

Appendix: Data supporting PCN15-2107 TSL14XX Linear Array Plating Change



Appendix: Data supporting PCN15-2107 TSL14xx Linear Sensor Array Plating Change

The following data has been taken on the ENEPIG (Electroless Nickel, Electroless Palladium, and Immersion Gold) system using the TSL1412S. All data taken meets the required specifications and is approved for the release to production.

Analysis of the Plating Finish

Layer	Specification	Measured Value
Ni	3.0 um min	4.138 – 5.887 um
Pd	0.075 um min	0.078 – 0.153 um
Au	0.075 um min	26.0-26.0 um

The following show that the metallization is receptive to standard manufacturing Reverse Bond + security bond (BSOB) wire bonding process.

Device	Wire Pull Test (g)	Ball Shear (g)	Ball Size (μm)	Ball Thickness (μm)
1	10.8	92.6	102	20
2	10.3	86.1	103	23
3	9.9	89.2	105	24
4	9.7	82.6	103	24
5	11.9	72.3	103	22
6	10.9	79.3	106	23
7	11.1	82.9	104	25
8	11.2	82.4	105	25
9	11.6	83.3	105	20
10	10.8	82.8	104	21
Specification	>7g	>30g	90-110um	15-40um
AVG	10.8	83.4	104	22.7
STD	0.7	5.46	1.25	1.89
CPK	1.83	3.26	1.6	1.36

Reliability Testing

Stress	Specification	Readpoint	Results
Temperature Cycling	-40/+85C	500 cycles	0/30