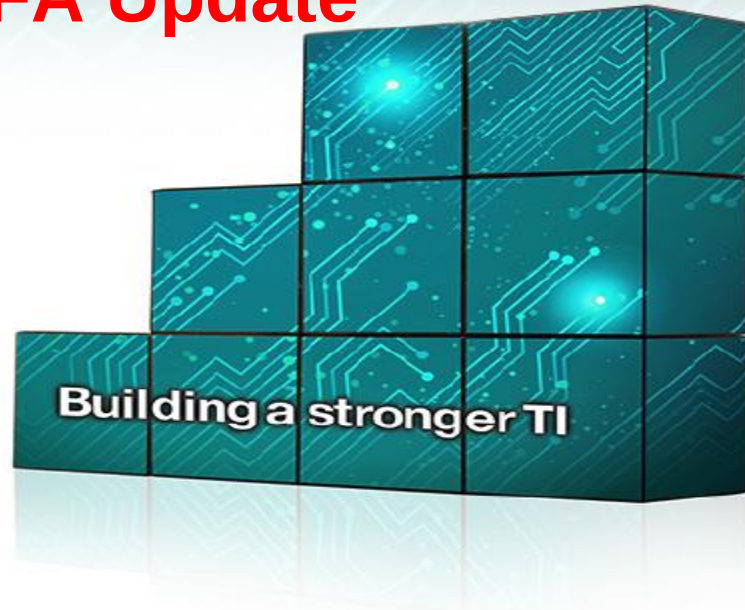


LP8556TMX-E02/NOPB – FA Update



TEXAS INSTRUMENTS

Executive Summary:

1. Visual inspection: No anomaly observed

2. Electrical Characterization

IV: No Open / short / leakage observe

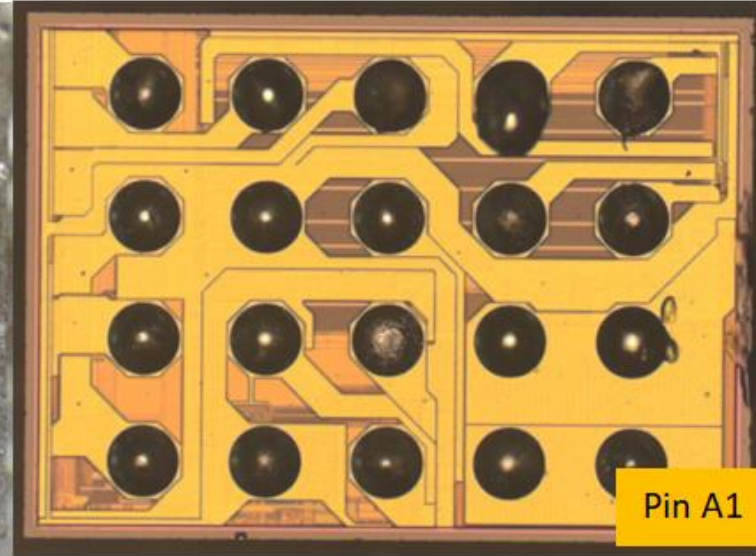
Bench: Fail LED current accuracy fail

3. Conclusion: This is the single unit TI had ever received with this kind of current accuracy failure after a huge number shipment to different customers; the estimated DPPM is only 0.03DPPM.

Visual inspection



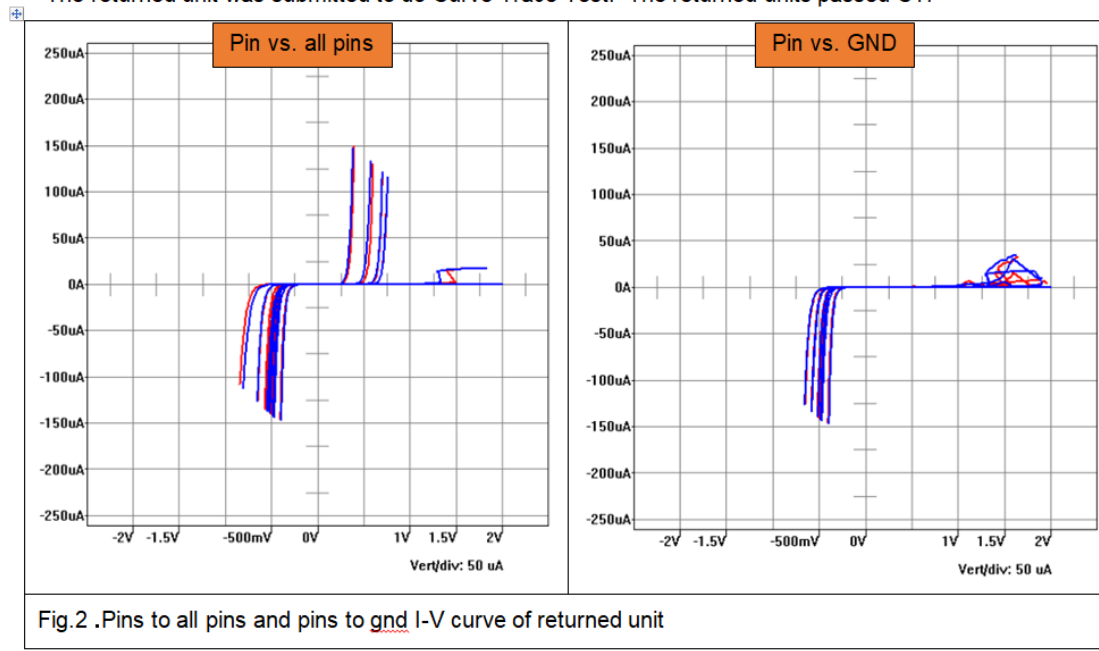
a. Top view of returned unit



b. Bottom view of returned unit

I-V check

The returned unit was submitted to do Curve Trace Test. The returned units passed CT.



Bench analysis

Tab.1: Bench result



Current code=2808		
	Good	returned
ICC(mA)	649	723



Design Analysis

there are 2 ways for common current source setting, one is bandgap voltage value over external ISET pin, the other is bandgap voltage value over internal resistor (with trimming), both situation have the same failure, so we can isolate the defect block to current source

The routine way is to do hot spot to isolate the defect site; however, it is not possible to isolate the defect area by hot spot as there is no current leakage that can be identified by EMMI, XIVA, Orbich, etc.

The normal procedure left is to do FIB probing in inner circuit to isolate the defect site. However, the affected area is covered by thick metal layers and therefore it is not feasible to do inner circuit analysis based on the real situation for this specific failure