

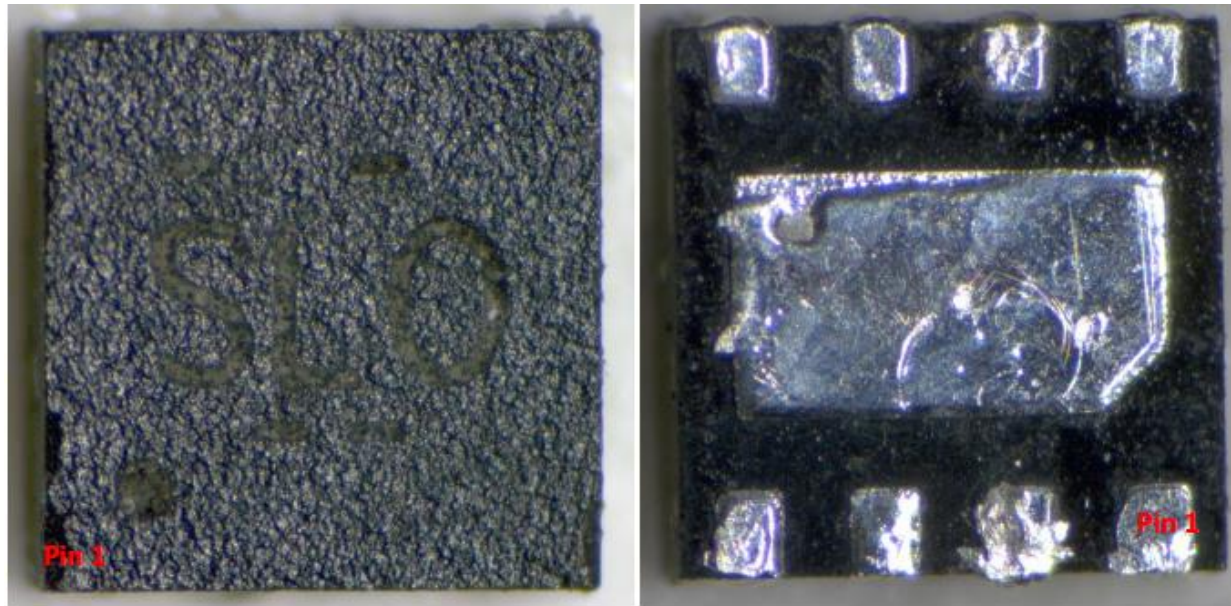
- **CRU Description:**

VIN=5V, VOUT should be 3.3V, but return unit is only 0.4V

- **Package Analysis:**

- **External Package Examination:**

Returned units#1 was inspected with optical microscope. No anomaly was observed at external package.



a) Top view

b) Bottom view

Figure 1: Optical pictures of the return unit.

- **X-Ray Analysis:**

X-Ray inspection was performed on the return unit. No anomaly was observed.

- **Scanning Acoustic Microscopy (SAM):**

Scanning acoustic microscopy inspection was performed on the return unit. No delamination was observed on die surface.

- **Electrical Characterization:**

Blue curve represents correlation unit. Red curve represents unit#1.

Curve trace analysis performed on the return unit showed that pin 8 (VIN) to pin 2 (GND) had early turn on issue. See in Figure4.

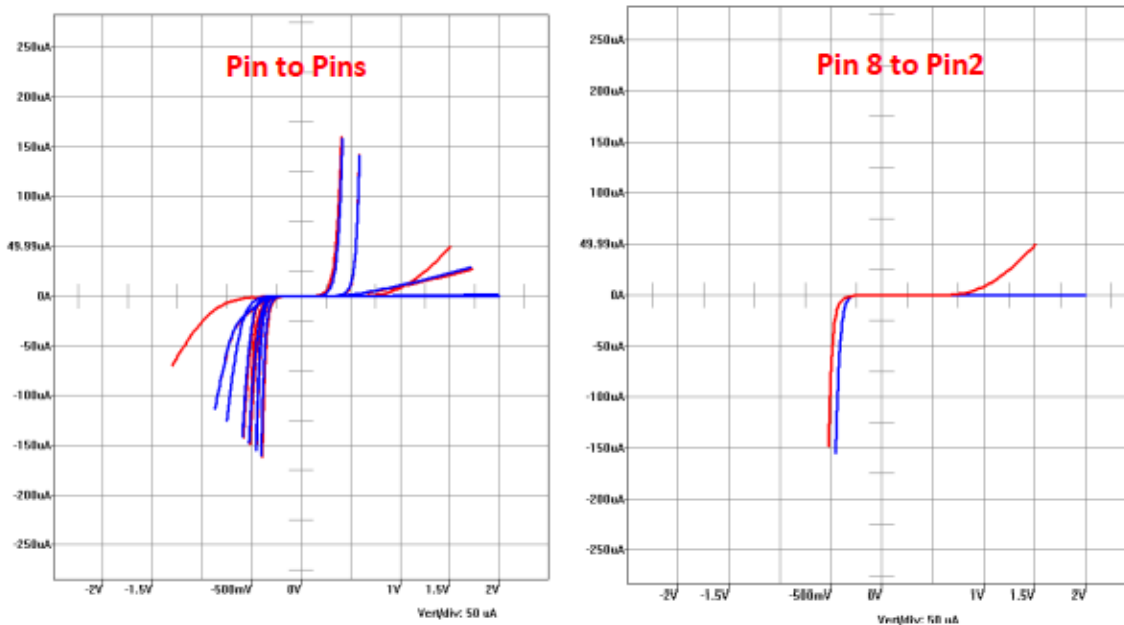


Figure 4: I/V curves of the return unit.

(Blue line represents the good unit; Red line represents the CRU)

- **Bench Test:**

The returned unit was submitted to do bench testing with TI-EVM.

The test conditions and bench results are shown in Table 1.

The CRU has function failure as no output.

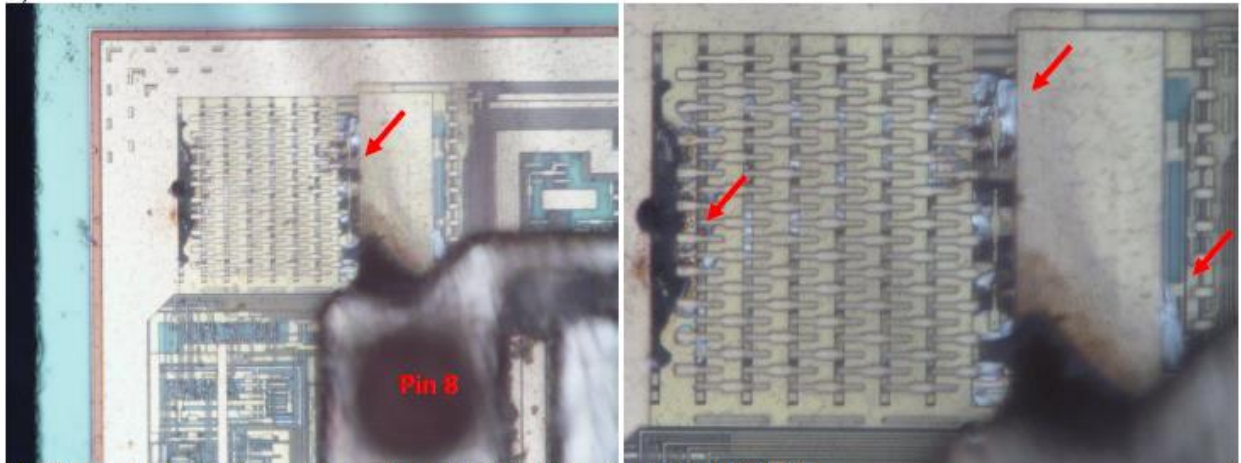
Table 1 Bench test conditions and results

Testing condition:		
1, Power supply: Vin=5V		
2, no load		
Unit	Iin/ mA	Vout/ V
GU	0.042	1.174
CRU	3.215	0

- **Decapsulation:**

The returned unit was chemically de-capsulated.

Damage in the form of flashed metal was observed near pin 8 (VIN). See in Figure 5.



b) Zoom in of the damage area found EIPD at the short pins BOAC traces

Figure 5: Optical pictures of the return unit after de-capsulation

- **Conclusion:**

PFA found EIPD as flashed metal near VIN pin.