Level 1 Failure Analysis

Level 1 FAs include: non-destructive tests, optical inspection, X-ray, C-SAM, and electrical characterization. This can complete an analysis or indicate the path for deeper analyses.

PACKAGE OPTICAL INSPECTION

C-SAM INSPECTION

Paddle

Die Surface

THRU SCAN

X-RAY INSPECTION

Voids in the die attach are observed
Level 1 Failure Analysis

ELECTRICAL CHARACTERIZATION

Drain I-V curve: Good vs. Leaky device

Drain I-V curve: Good vs. Short device

Gate I-V curve: Good vs. Leaky device

Gate I-V curve: Good vs. Short device

Vth I-V curve: Good vs. Leaky device

Red = leaky device
Yellow = good device

Red = short device
Yellow = good device

Red = device suffering from negative Vth shift due to leaky Drain current in transistor
Yellow = good device
Level 1 Failure Analysis

**Vth I-V curve: Good vs. Leaky device (log scale)**

**Transistor Characteristic Curves**

**DECAPSULATION**

Full boil out to remove all the encapsulation material

Using drop method to preserve encapsulation material and protect leads

To discuss EAG’s capabilities, contact EAG’s commercial team at [http://www.eag.com/contact/](http://www.eag.com/contact/) or by phone at +1 800 366 3867.