Why bother?

Alun Jones
Micross Components Ltd.
Why design?

- Minimise space and power
- Simplify board interconnection
- Reduce component inventory
- Secure source of device over project life-time
- Protect system design IPR
- Custom built for specific application

Micross Components do design
Why use hermetic packaging?

- No contact with active area of die.
- Built-In contaminants more easily controlled
- No issues with ingress of contaminants
- Easily inspected before final assembly
- Known reliability track record
- Additional components can be included.
- Low volume capability
- Highly stable and repeatable process & materials
- Not prone to assembly issues (popcorning etc.,)

Micross Components also do Ceramic Assembly
Why Test?

No Manufacturer knowingly ships faulty product …

BUT

- Test escapes can happen!
- Not all parameters are guaranteed or tested for.
- Specific application or environment
- Validating the results of environmental and stress tests.
- High cost of repair
- If the cost of repair includes your reputation!

And Micross Components has a large test capability
Why Burn-In?

- High temperature (+125°C) under bias increases the likelihood of early or infant mortality by...
  - accelerating energy-related defects
    - metal migration
    - contamination mobility
  - stressing the part over a period of time
    - accelerates time-related effects
  - dynamic burn-in more closely simulates real-life operation by
    - incurring dynamic as well as static supply currents
    - causing inputs and outputs to operate

We also perform burn-in
So what does upscreening consist of?

• Exhaustive and extensive electrical testing / characterisation.
• Additional environmental testing
• Reliability screening, such as ...
  – Dynamic and Static Burn-in
  – “Shake-rattle-n’roll” vibration tests
  – HAST

We do all the above and more.
Why Upscreen?

- Required grade of component is unavailable
- Need to operate outside standard data-sheet
- Need to determine long-term reliability
- Special application environment
- Known design sensitivity

And Micross Components can also upscreen components
Upscreening

• What upscreening can’t do ...
  – Improve quality or inherent reliability
  – Give guarantees

• What upscreening can do ...
  – Provide device and batch information
  – Give indication of reliability and quality
  – Weed out “marginal” product
  – Improve confidence in product
  – Let the customer decide on viability
Definition of Terms

• Upscreening
  – Testing a product to meet a customers requirement, even if it exceeds the original manufacturers specification.

• Uprating
  – Guaranteeing a product over, above and beyond the original manufacturers specification.

So Micross Components doesn’t do uprating!!!
So, a recap …

• **Micross Components** can …
  Design
  Assemble and Package
  Electrically Test
  Burn in (dynamic or static)
  Environmentally screen
  Upscreen for additional requirements
  Perform a whole range of component quality operations.

• … all for you.
Why Bother…?
You don’t have to bother …
because
Micross Components can do it all for you…
But you do have to do something?

Visit our website at

http://www.micross.com

…. to start the ball rolling!

(so you don’t have to bother anymore)