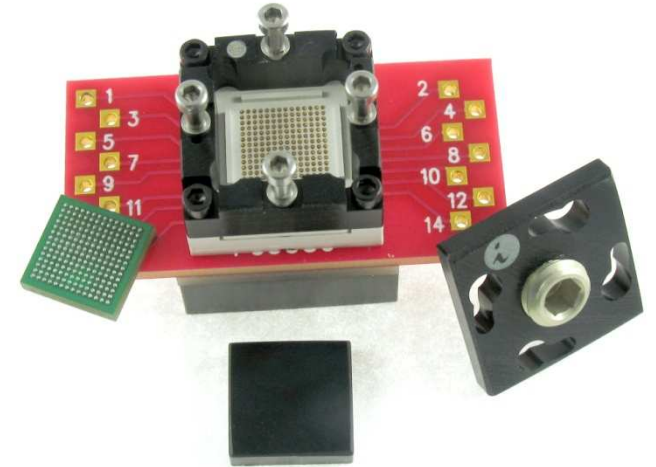




**Ironwood  
Electronics, Inc.**



# **SBT – Socket for Burn-in and Test Applications**

**High Performance  
IC Sockets And  
Test Adaptors**

# Problem

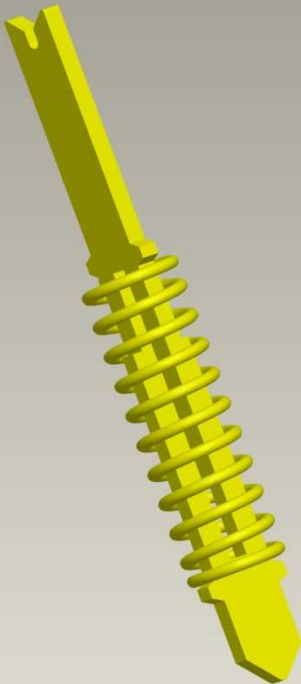
*Custom Burn-in and Standard Production Test Applications usually demand a spring probe solution*

- *Custom Burn-in sockets are expensive*
  - *Need high cost tooling and long development time*
- *Spring probes are expensive*
  - *Economic downturn accelerating need for cost reductions*
  - *Production factories need low cost replacement pins*
- *Spring probe delivery unpredictable*
  - *High cost means no inventory*
  - *Poor delivery lead time puts new product ramp at risk*

# Solution - SBT Contact

SBT Contact is a stamped contact with outside spring as well as inside leaf spring that provides a robust solution for Burn-in & test applications.

BGA Contact



CHARACTERIZATION  
BURN-IN  
SLT  
ATE

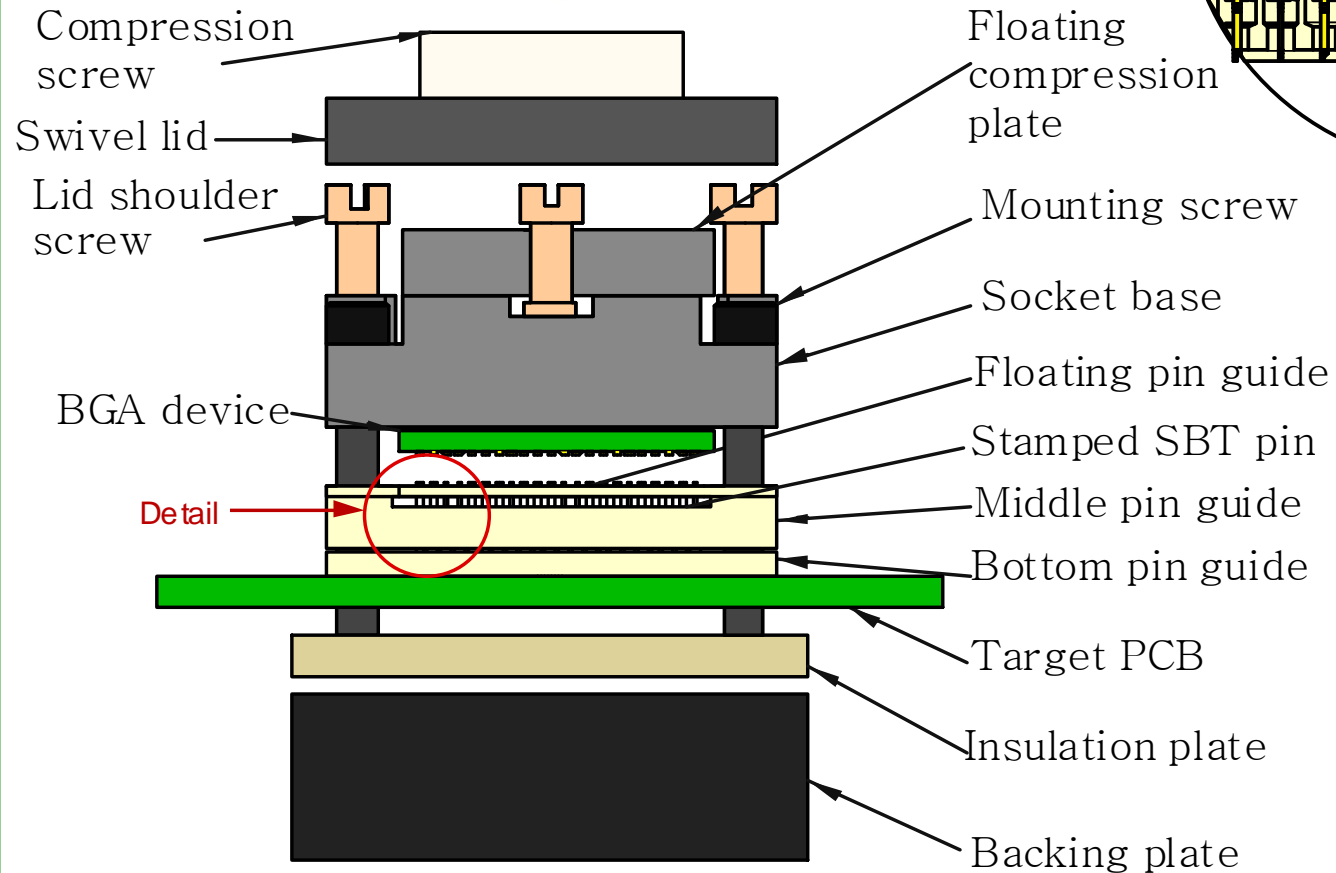
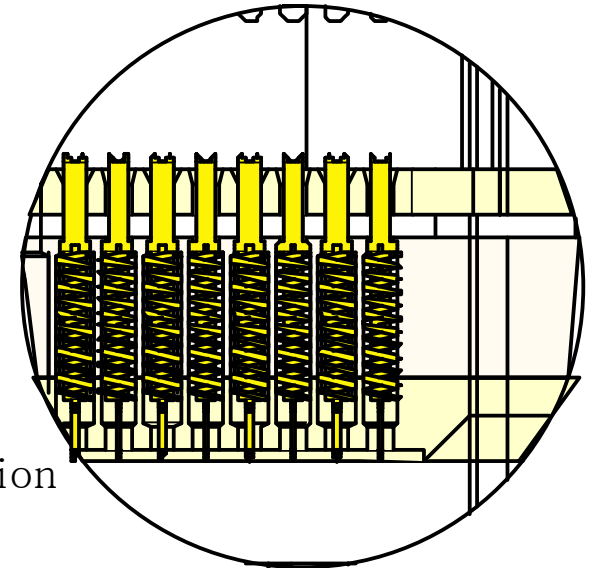
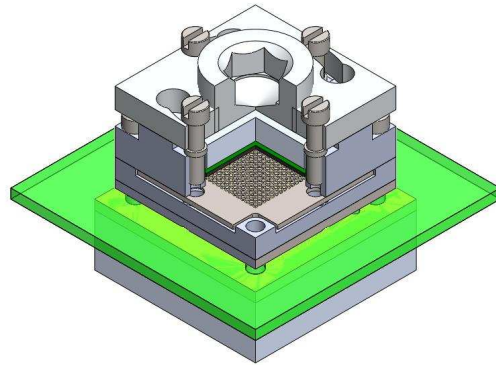
Solution for 1.27mm to 0.50mm (LGA, BGA, QFP packages) in Burn-in & test applications.

Contact technology has 3 part system. Top plunger, Bottom plunger and a spring. The BeCu plungers are stamped and assembled to a stainless steel spring in automated system to enable six sigma capabilities.

LGA Contact



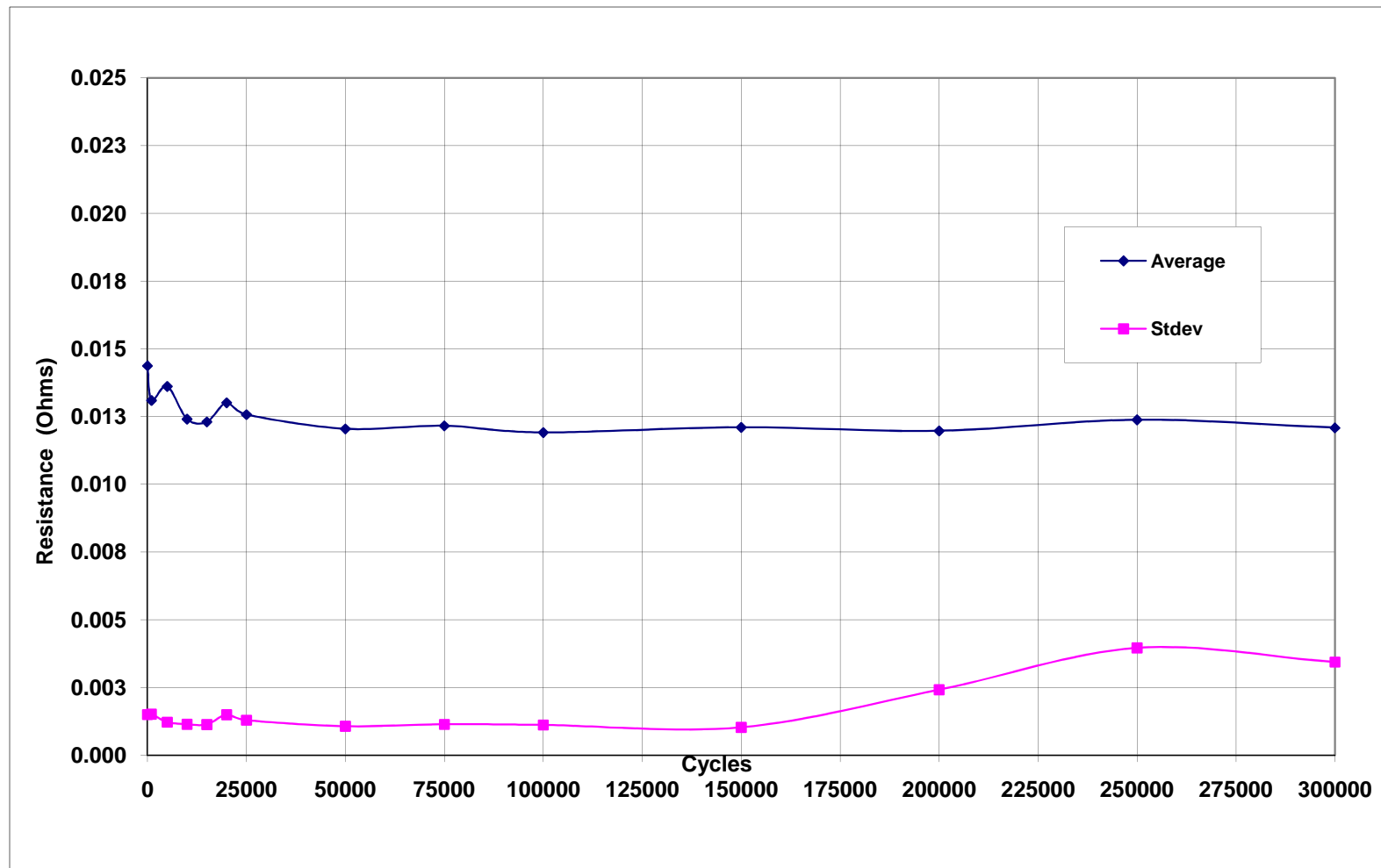
# SBT Socket



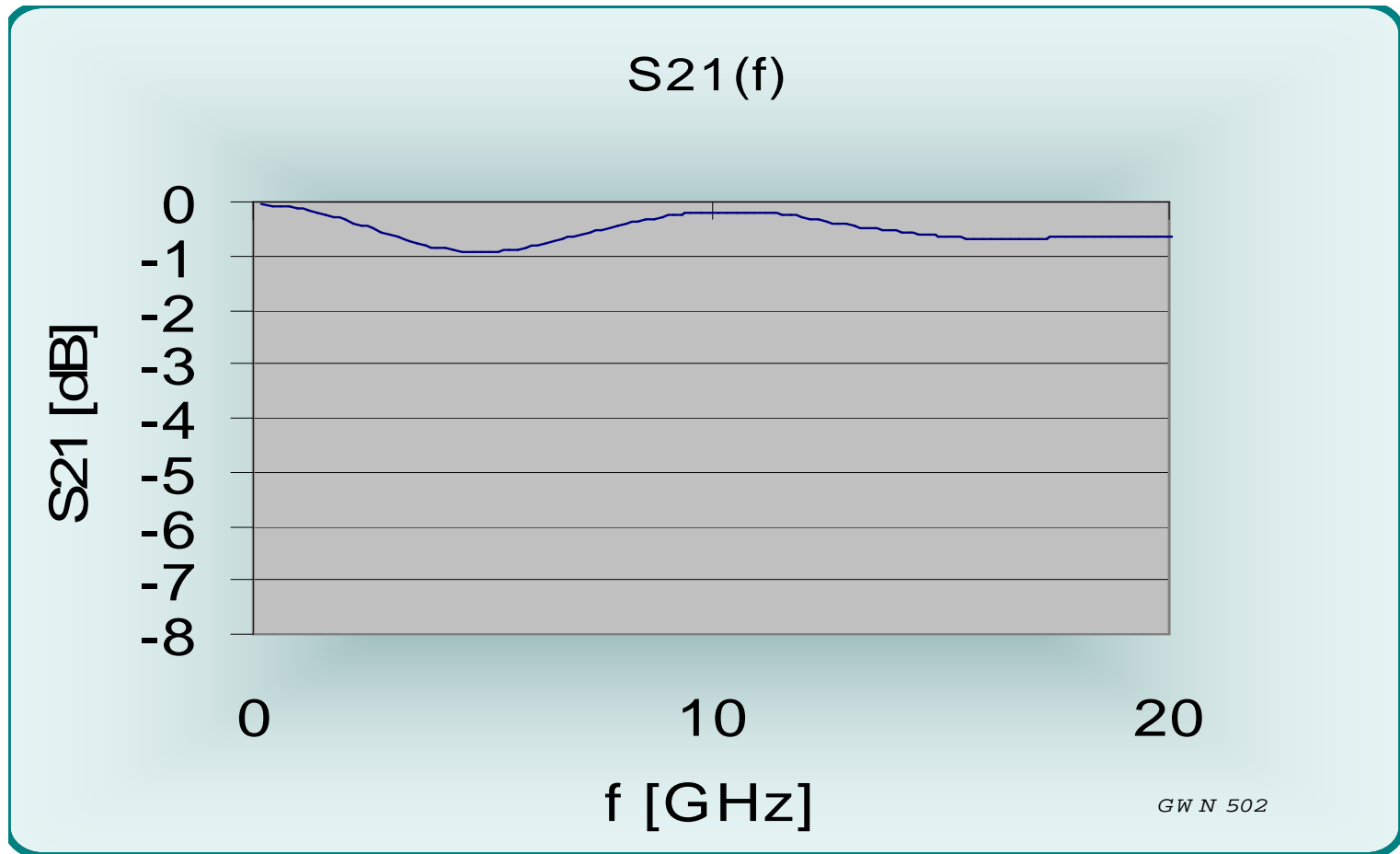
# SBT Contact Typical Characteristics

- Contact resistance < 15 mOhms
- Self Inductance <1nH
- Bandwidth >20GHz @-1dB
- Capacitance <0.3pF
- Force 30grams per contact
- Operating temperature -55 to +180° C
- Insertion/Extraction cycles >100,000
- Current rating >4A per contact

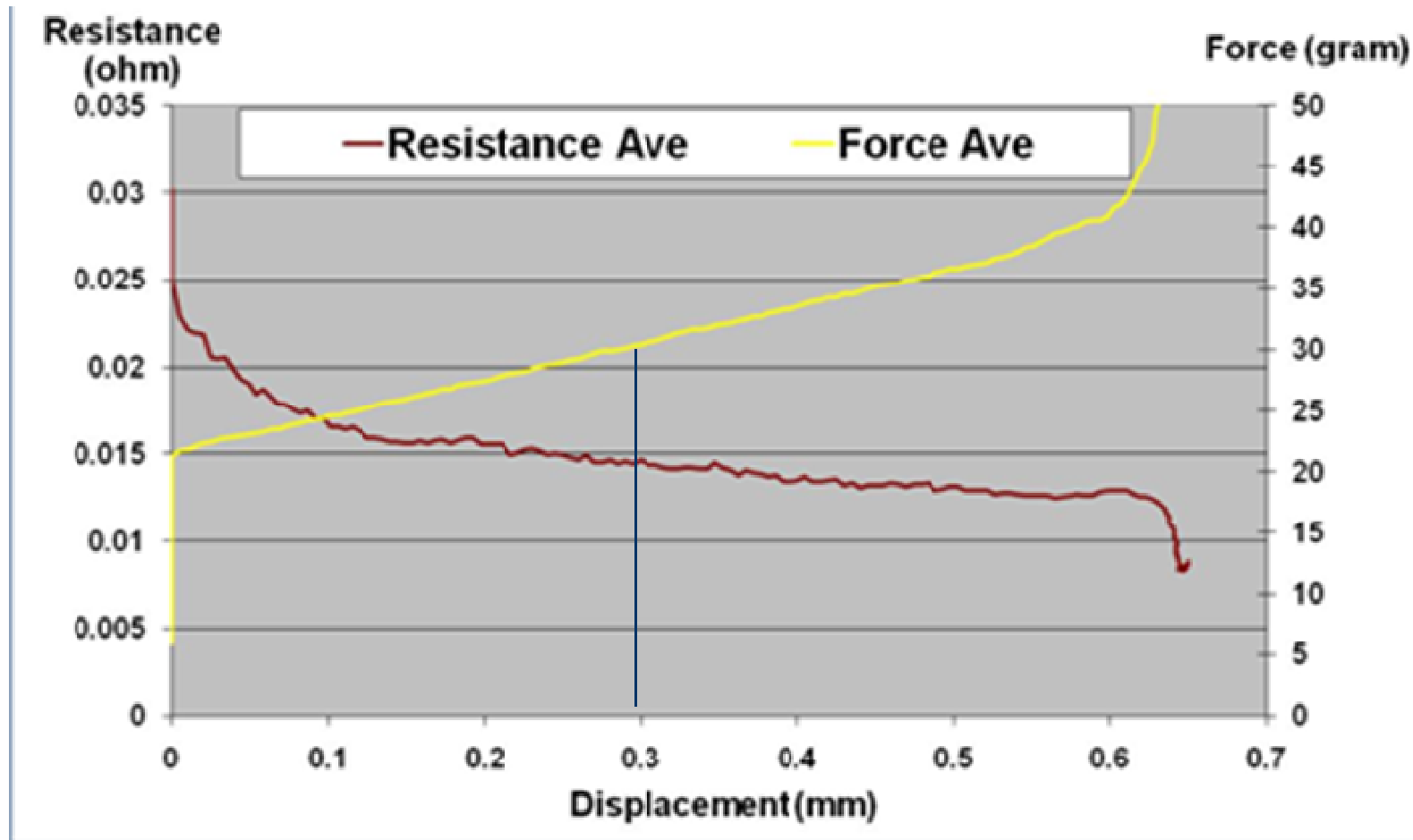
# Endurance Data – 1mm pin



# Bandwidth Data – 0.5mm pin

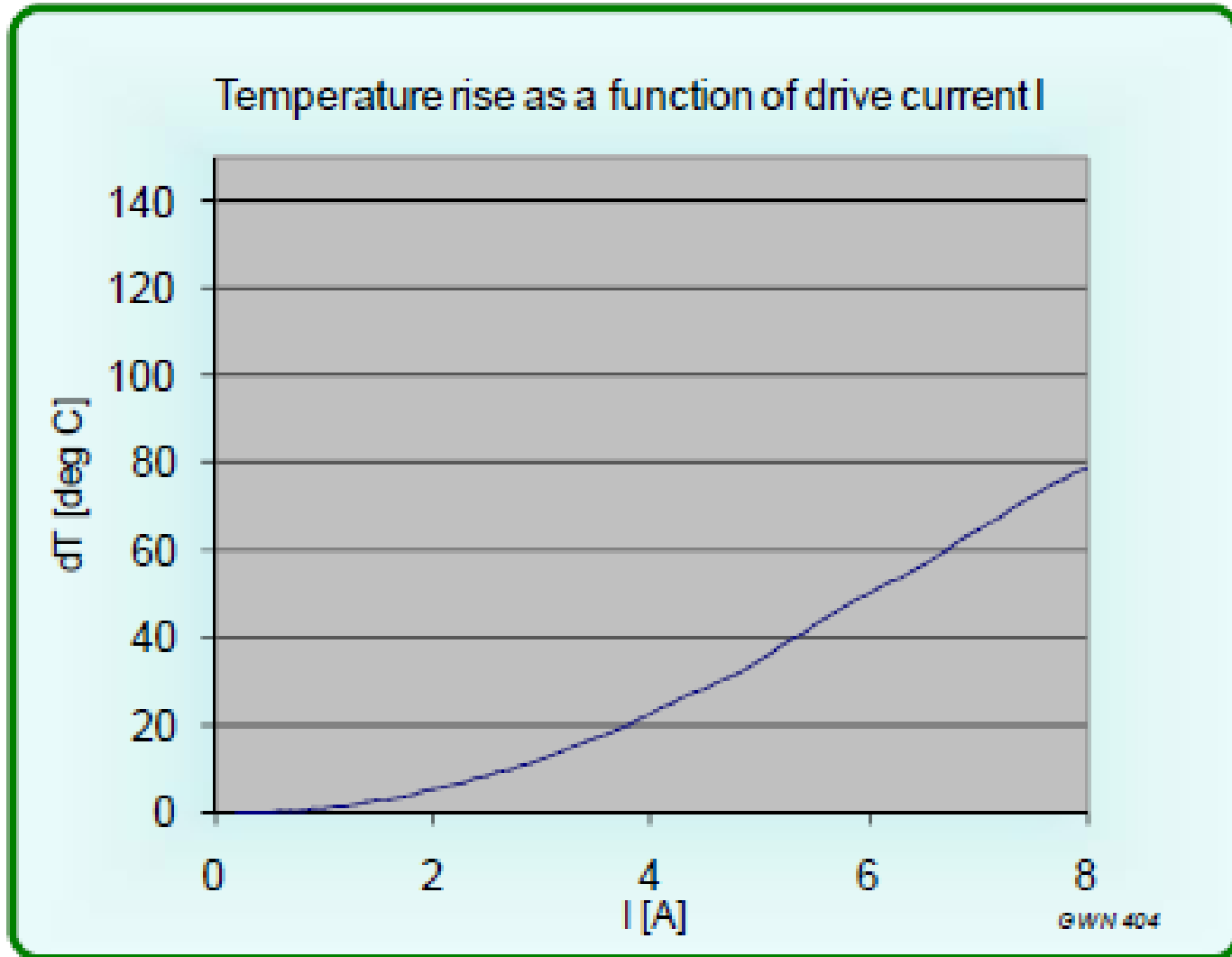


## Force Deflection Resistance Data – 1mm pin





# Current Data – 1mm pin



# High Volume Manufacturing

- Complete automation using Solid works CAD, Virtual Gibbs CAM and High speed CNC machines for component fabrication.
- Complete automation of stamping, plating, assembly and inspection of SBT contact.
- Full traceability built into process
- Established lean/six sigma process eliminates non-value added steps in the manufacturing sequence which enables low cost for end customers.
- Established “Pull” system and “Kanban” allow flexible manufacturing flow which enables short lead time for various order sizes.

# SBT Value Proposition



- Low cost pin solution – 1/3<sup>rd</sup> of conventional spring probe cost
- Extreme temperature solutions (-55 to +180C)
- High power applications (excellent current rating of 4A to 8A @80C rise)
- High speed digital and RF applications (excellent bandwidth >20GHz)
- Less maintenance and handler downtime (longer cycle life 100K to 300K)
- Reliable yield data due to stable contact resistance throughout life cycle
- High compliancy for large package warpage
- Stocked inventory due to high volume automated assembly

# SBT Value Proposition



- SBT contact replaces spring pin in all lab and evaluation applications due to low cost and better electrical/mechanical performance than conventional pogo pin.
- Custom burn-in socket can be produced using SBT contact in 3 weeks when standard socket is not available.
- SBT sockets with wide temperature range are available in same footprint as elastomer GHz sockets.
- SBT sockets are robust and can be used in demonstration products for multiple handling process without contact degradation.