



Ironwood
ELECTRONICS
www.ironwoodelectronics.com

**GT – Silver Button
Technology Socket for
Semiconductor Test**



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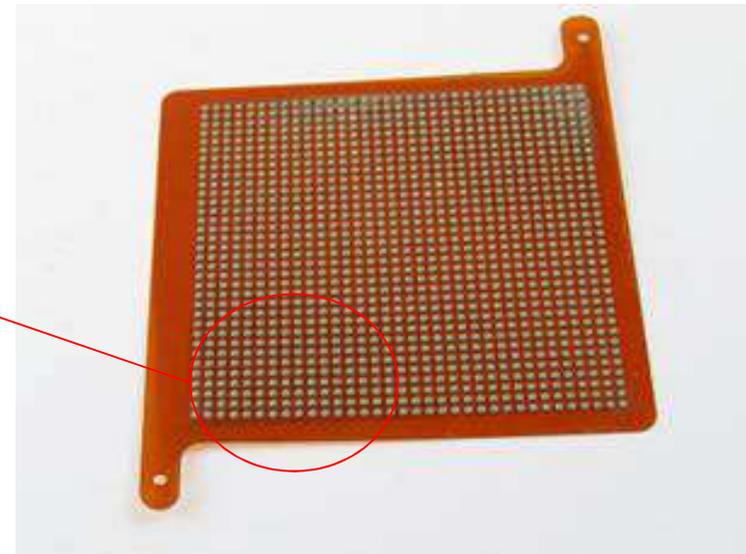
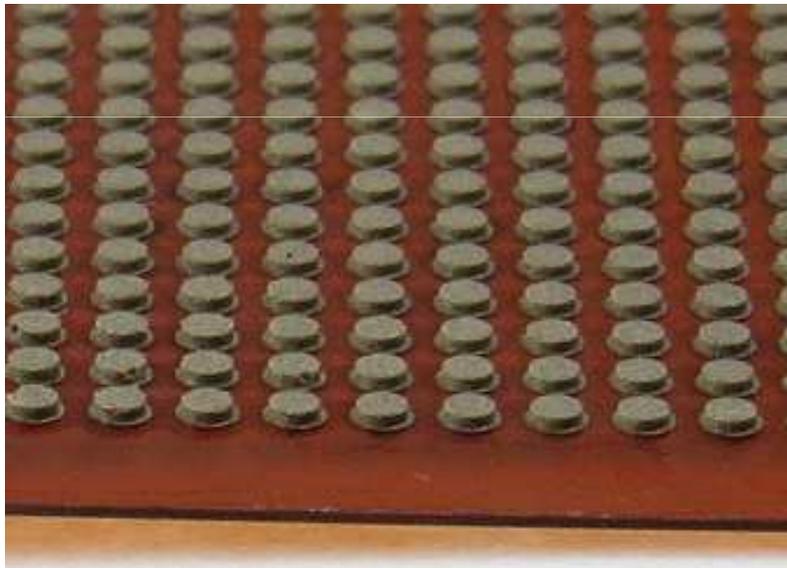


Prototype Test Applications demand high bandwidth followed by high compliance, low resistance and high temperature.

- *Elastomers have high bandwidth*
- *Elastomers have low resistance*
- *Elastomers have low compliance*
 - *Due to small thickness and mechanical coupling*
- *Elastomers have limited temperature range*
 - *Due to the inherent process of silicone rubber*

Solution - GT Contact

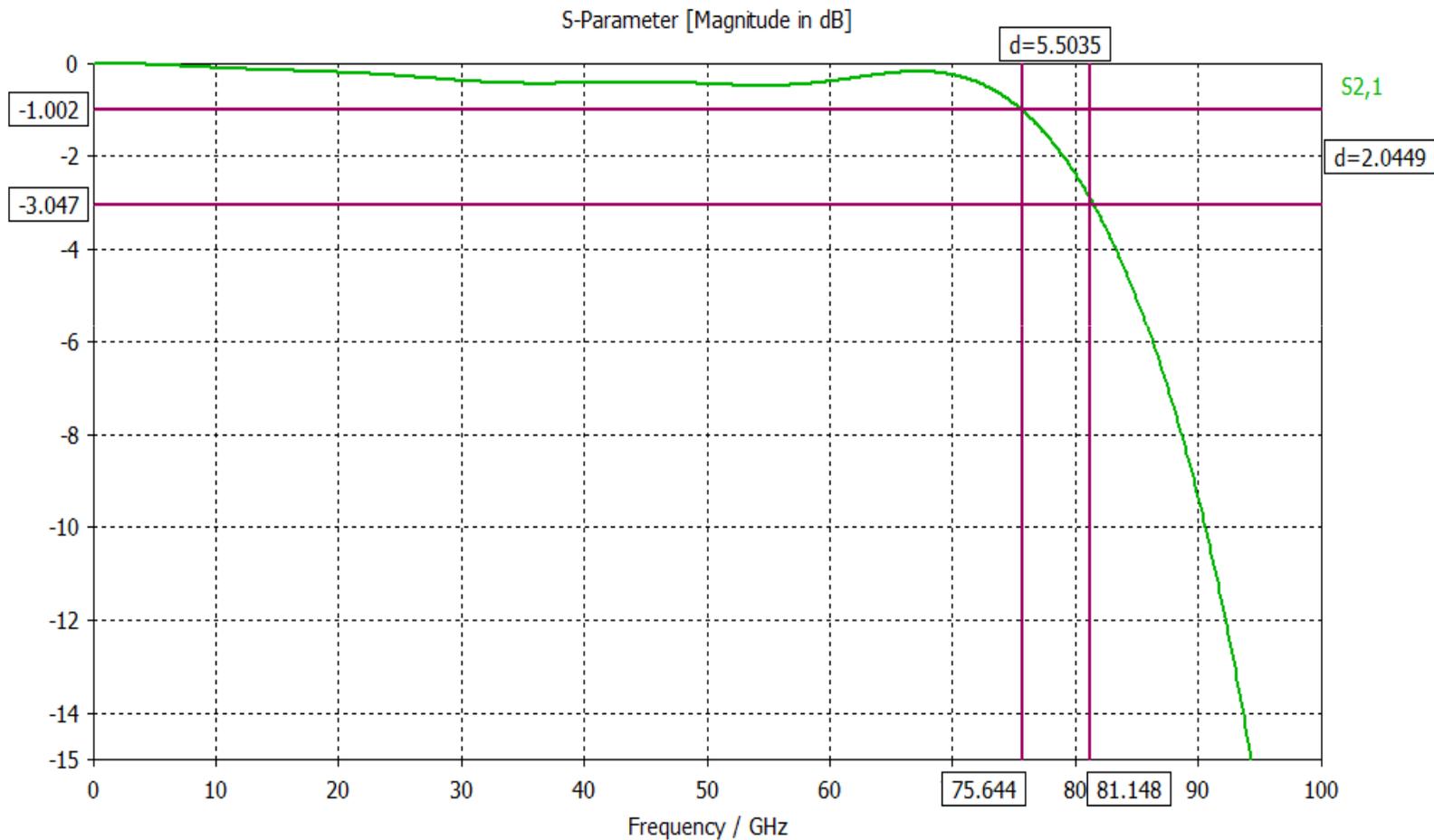
GT is a new elastomer technology that has silver particles held in a conductive column like buttons which are embedded in a non-conductive polymer substrate on a proper pitch that provides high compliance and extreme temperature ranges. GT is available for BGA, LGA, QFN, PoP and other packages from 0.15mm to 1.27mm pitch.



GT Contact - Typical Characteristics

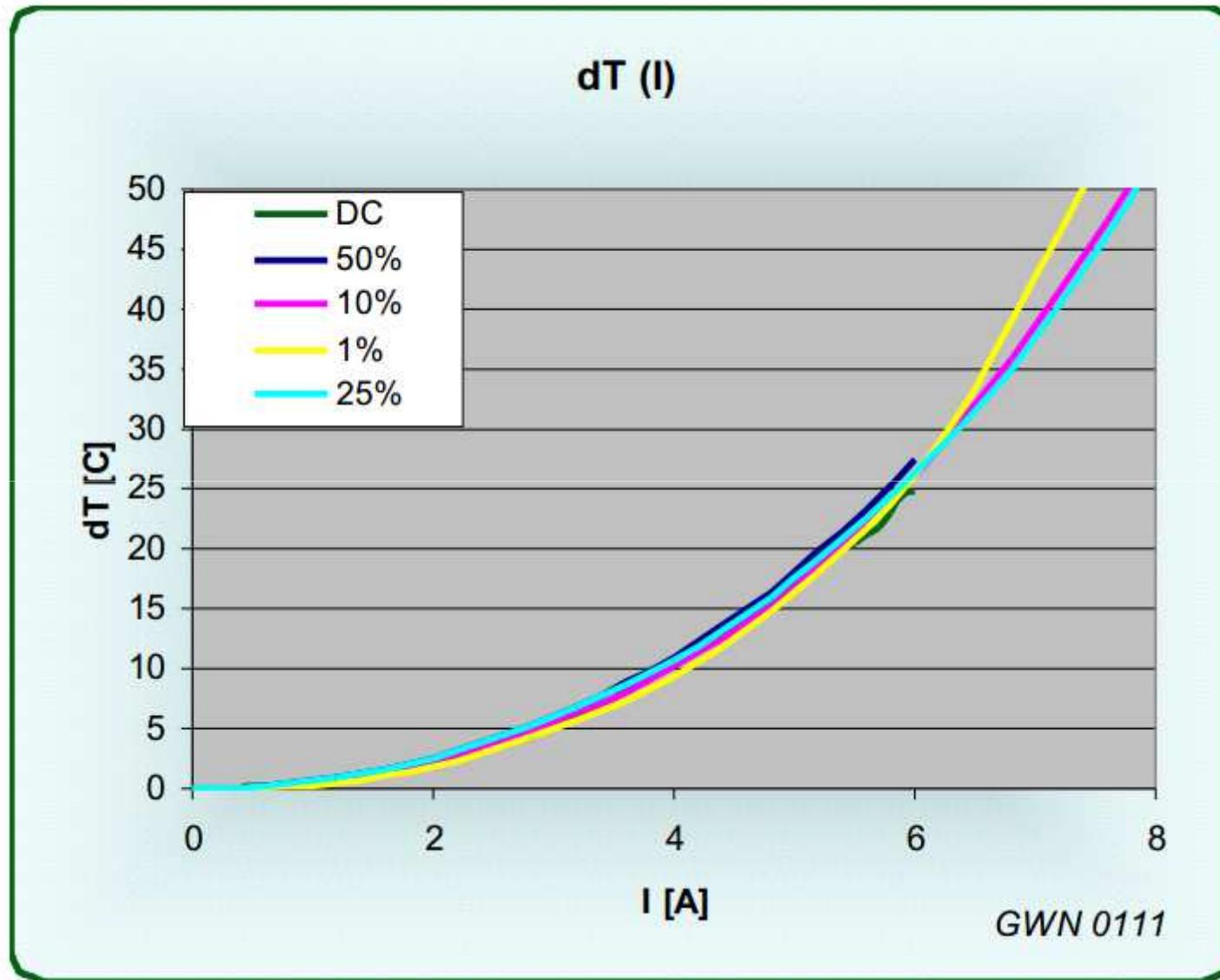
- Contact resistance <math><30\text{ mOhms}</math>
- Bandwidth >75GHz @-1dB
- Current 5.4A @ 20C rise
- Force 50-80grams per contact
- Operating temperature -55 to +160° C
- Insertion/Extraction cycles >1000
- Contact length (compressed): 0.08mm
- Compliance: 0.15mm

Bandwidth Data – 0.8mm Pitch



Insertion Loss -1dB @ 75.6GHz

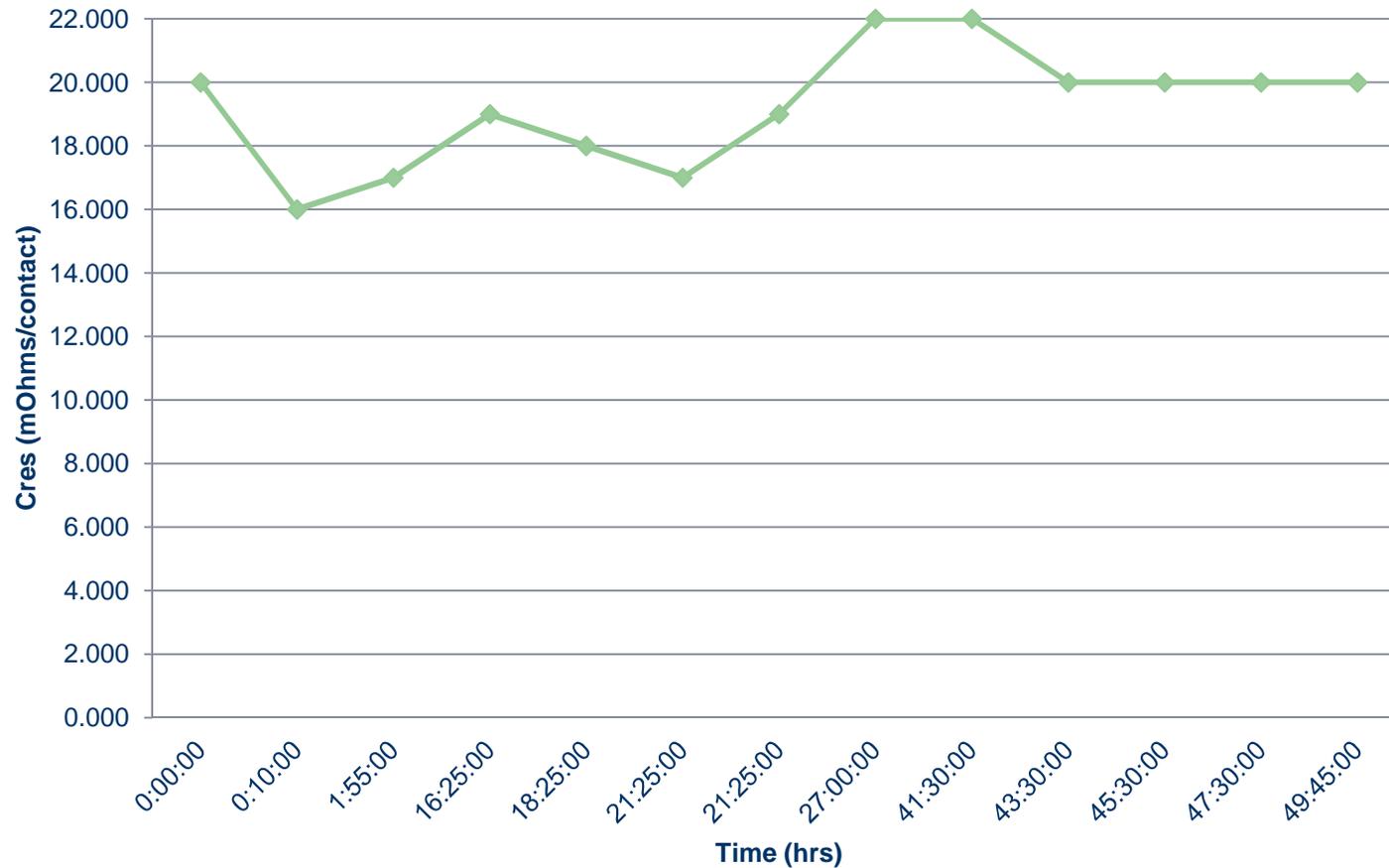
GT Contact - Current Capability



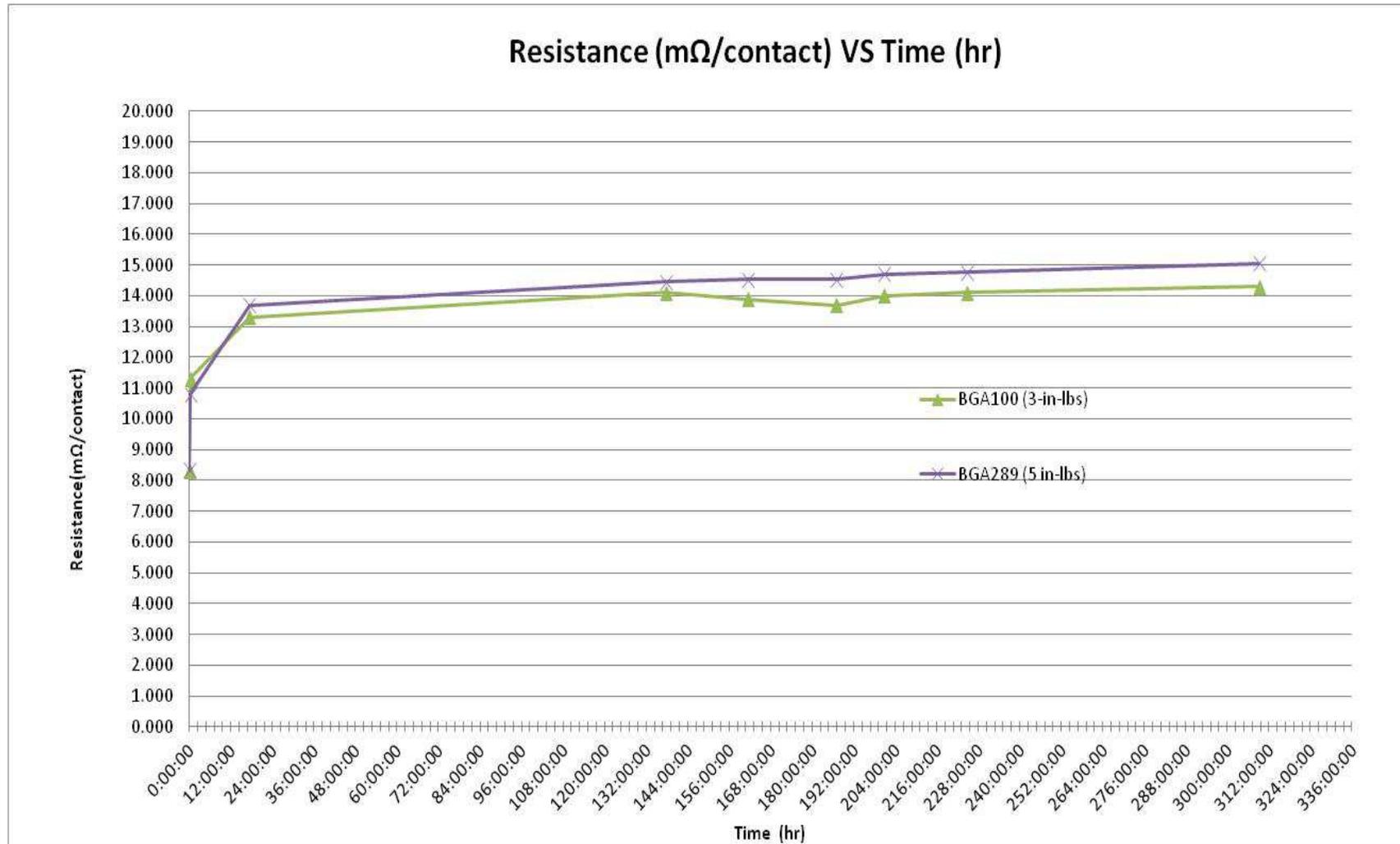
20C rise at 5.4A

-55C Temperature Data

Cres(mohm/contact) Vs Time(hrs)



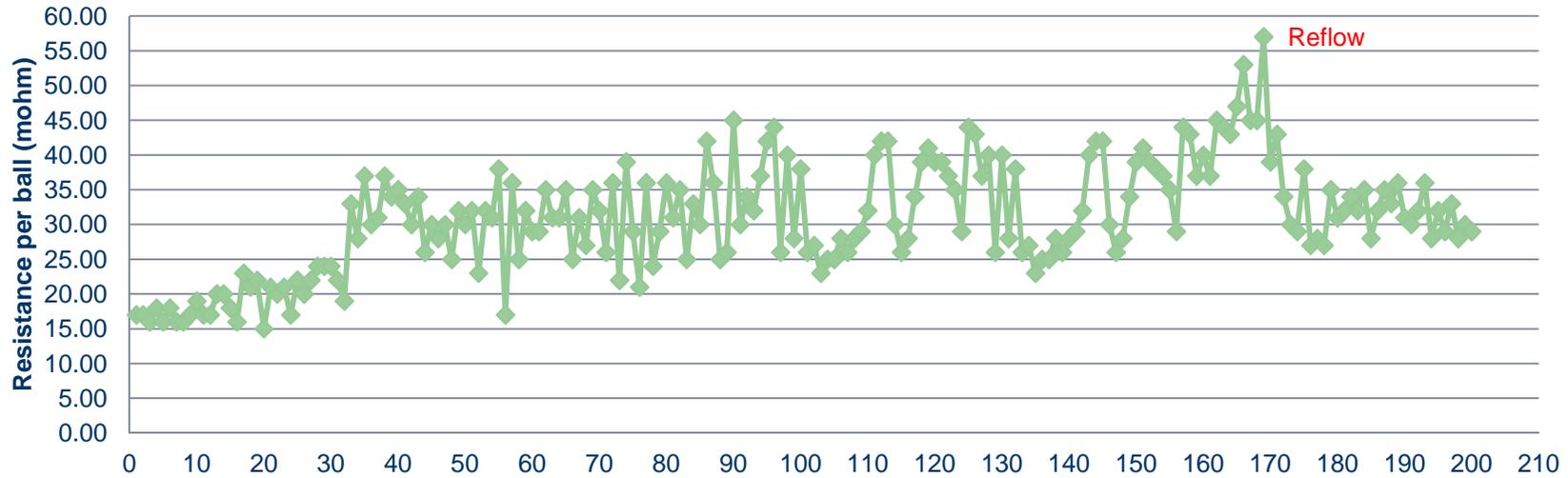
+160C Temperature Data



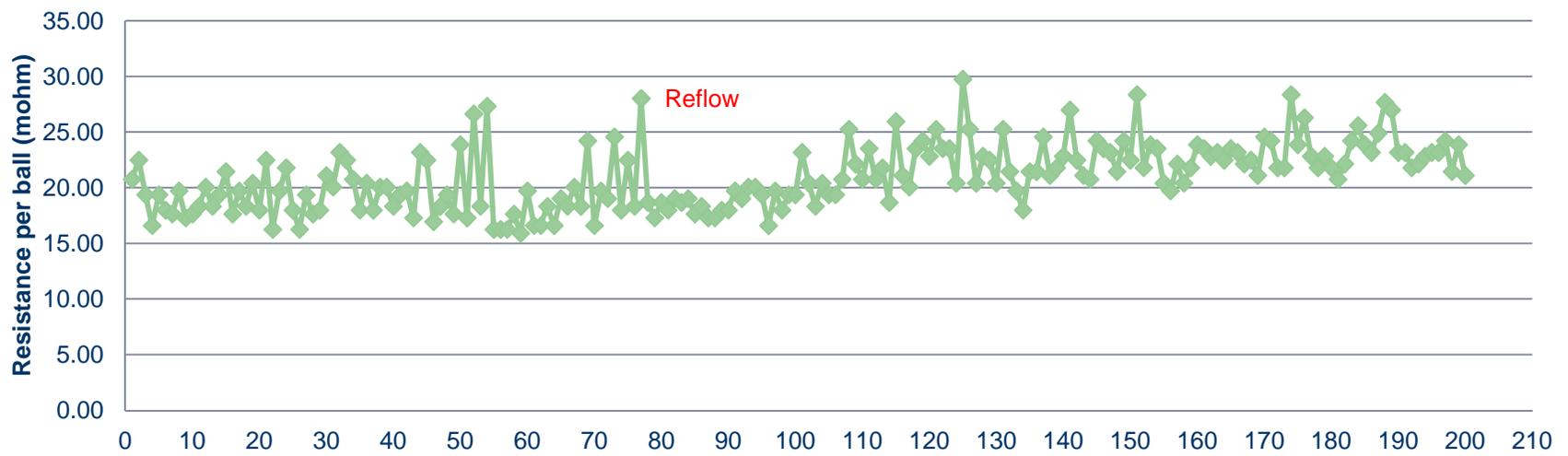
GT Contact - Endurance Data



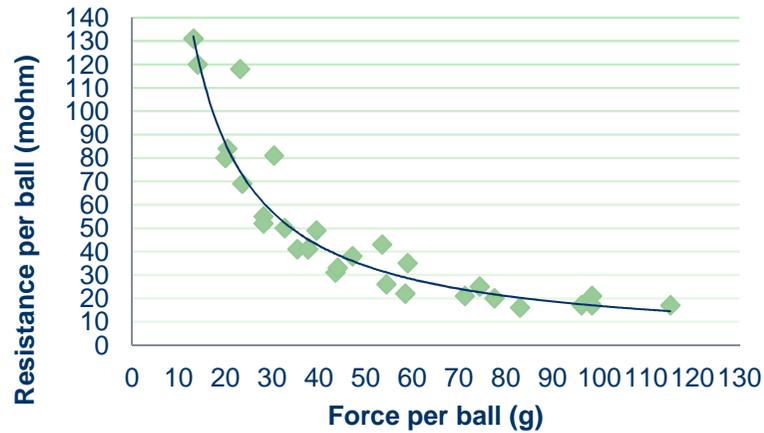
BGA100



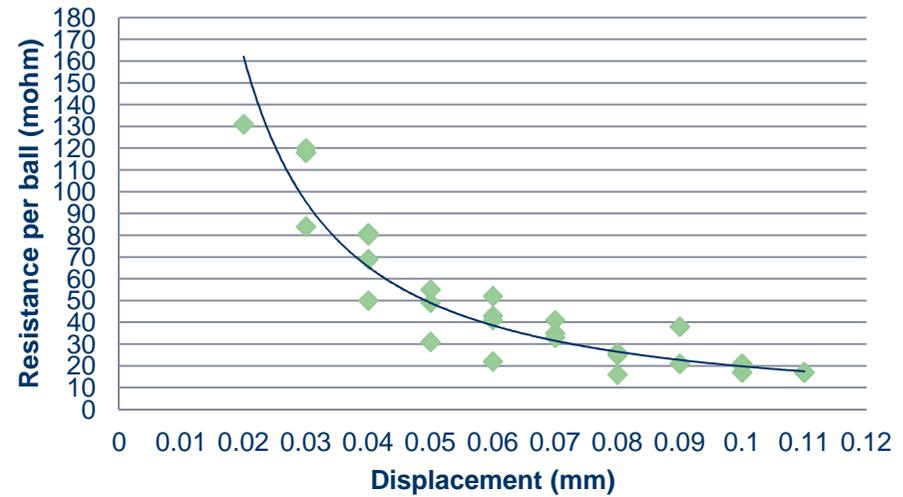
BGA289



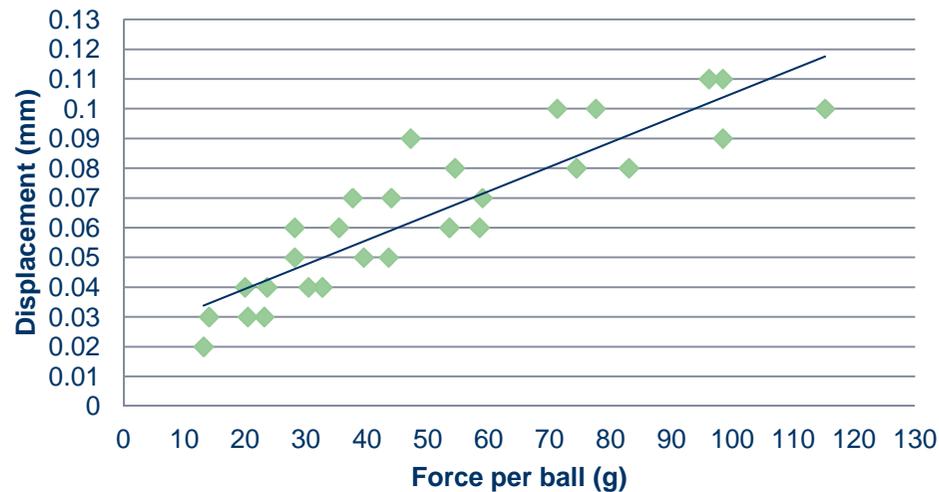
Resistance per ball VS force per ball



Resistance per ball VS displacement



Force VS Displacement



BGA100
0.8mm pitch
10x10 array



GT Value Proposition



- Low cost elastomer solution for 0.15mm to 1.27mm pitch devices
- Extreme temperature solutions (-55 to +160C)
- High speed digital and RF applications (excellent bandwidth >75GHz)
- Reliable testing due to stable contact resistance throughout life cycle
- Accommodates large packages with warpages
- Mixed pitch and non-conventional array solutions for densely populated devices at low cost
- GT contact provides superior solution in all lab and evaluation applications due to individual button technology at affordable cost
- GT sockets with wide temperature range are available in same footprint as other Ironwood sockets
- Custom test socket can be produced using GT contact in less than 3 weeks when standard socket is not available
- GT sockets are robust and can be used in demonstration products for multiple handling process without contact degradation



Tack Vielen Dank
Obrigado
Merci ありがとうございます
Bedankt 感謝您
Takk 谢谢
Grazie
Спасибо Thank You
Kiitos Tak
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