



Ironwood
ELECTRONICS
www.ironwoodelectronics.com

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

Toll Free: (800) 404-0204 U.S. Only

Tel: (952) 229-8200

Fax: (952) 229-8201

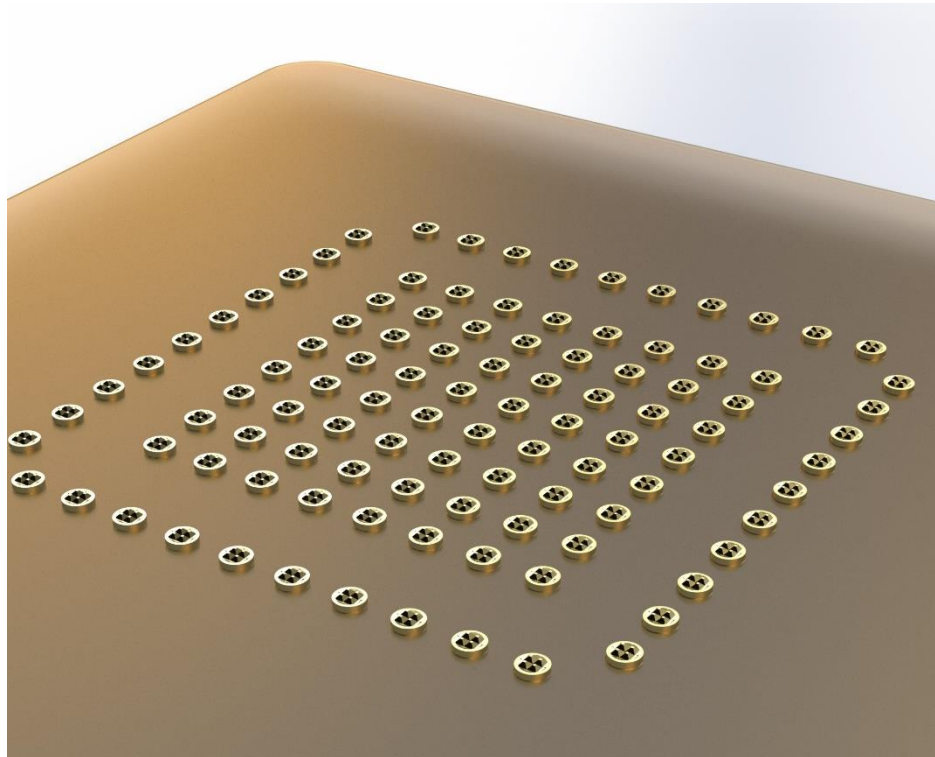
email: info@ironwoodelectronics.com

Test Applications demanding high bandwidth and high mechanical life, followed by high compliance, low resistance and high temperature.

- *Elastomers have high bandwidth*
- *Elastomers with p-layer have high mechanical life*
- *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 - GTP Contact

GTP is a new elastomer technology with a p-layer based on our high performance GT technology. GTP has the same high frequency and temperature performance of GT while increasing the mechanical life to 200k+ cycles. GTP is available for BGA, LGA, QFN, PoP and other packages from 0.35mm to 1.27mm pitch.



GTP Contact - Typical Characteristics

- Contact resistance 25-100 mOhms
- Bandwidth >93.7GHz @-1dB
- Current 7.8A @ 20C rise
- Force 40-70 grams per contact
- Operating temperature -55° to +160° C
- Insertion/Extraction cycles >200k*
- Contact length (compressed): 0.29mm
- Compliance: 0.15mm

*Cycle life shown at room temperature. Reduced cycle life is expected when used at extreme temperatures, thermal cycling, improper force, cleaning and handling.

GTP Contact

Bandwidth Data – 0.4mm Pitch

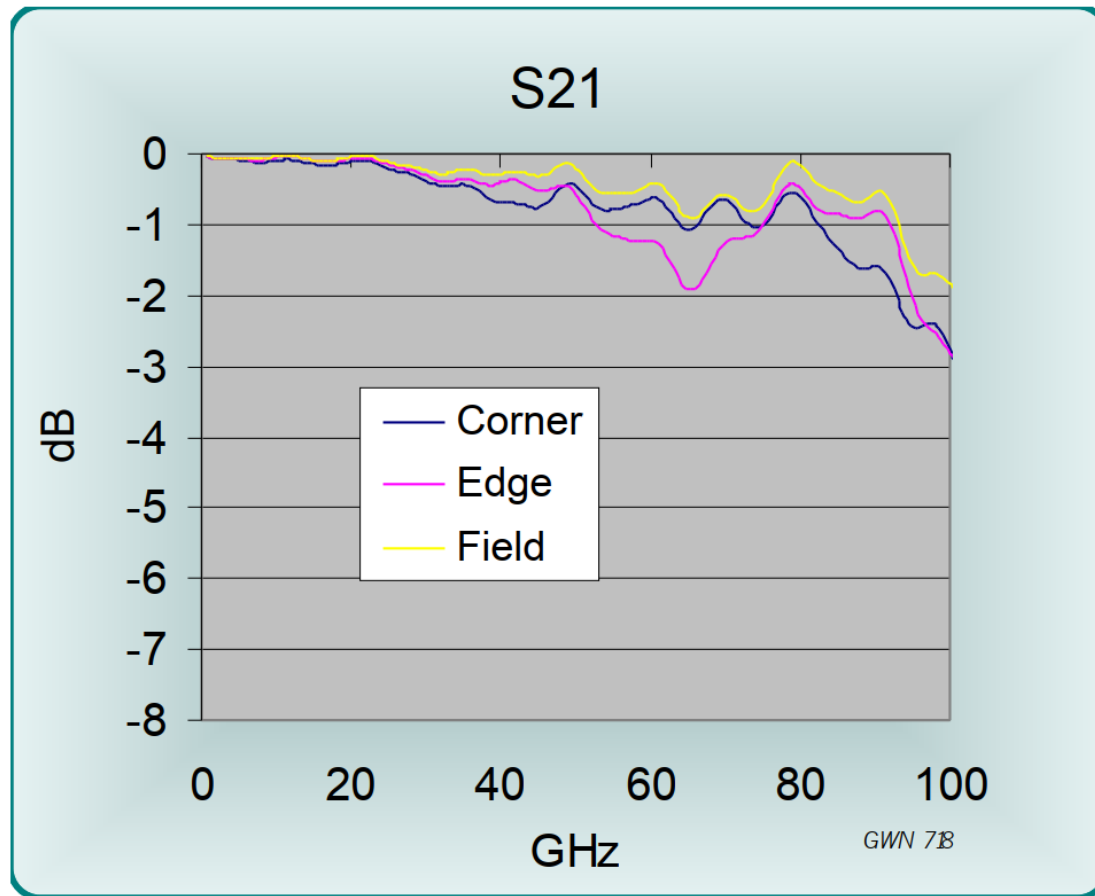
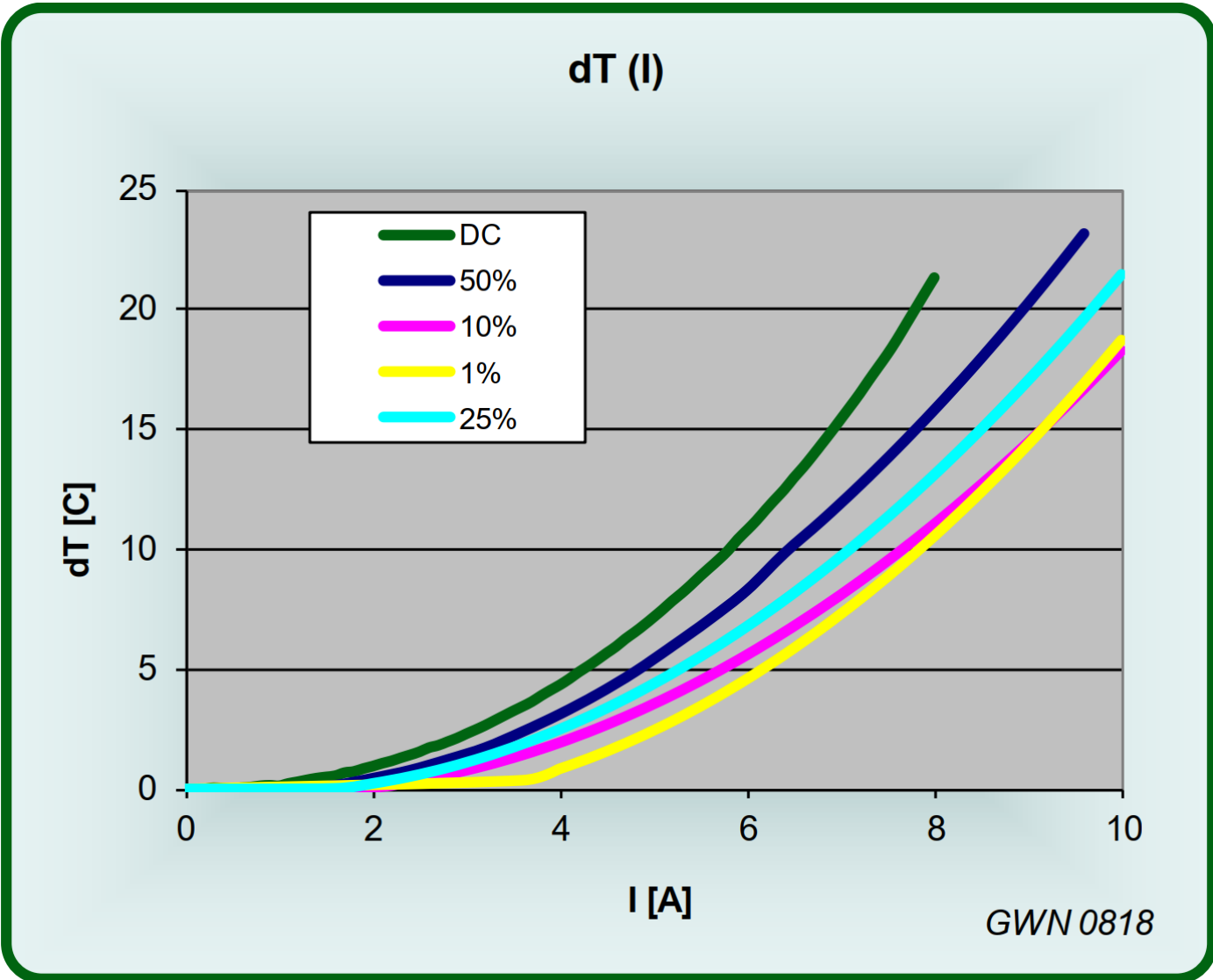


Figure 17 Insertion loss S21 (f)

Bandwidth Data – 0.4mm Pitch

	Corner	Edge	Field	
Delay	1.2	1.6	1.5	ps
Risetime open	28.5	28.5	28.5	ps
Risetime short	27	27	27	ps
Risetime thru, 50 Ω	12	12	12	ps
Insertion loss (1dB)	64.3	52.8	93.7	GHz
Insertion loss (3dB)	>100	>100	>100	GHz
VSWR (2:1)	90.4	>100	109.5	GHz

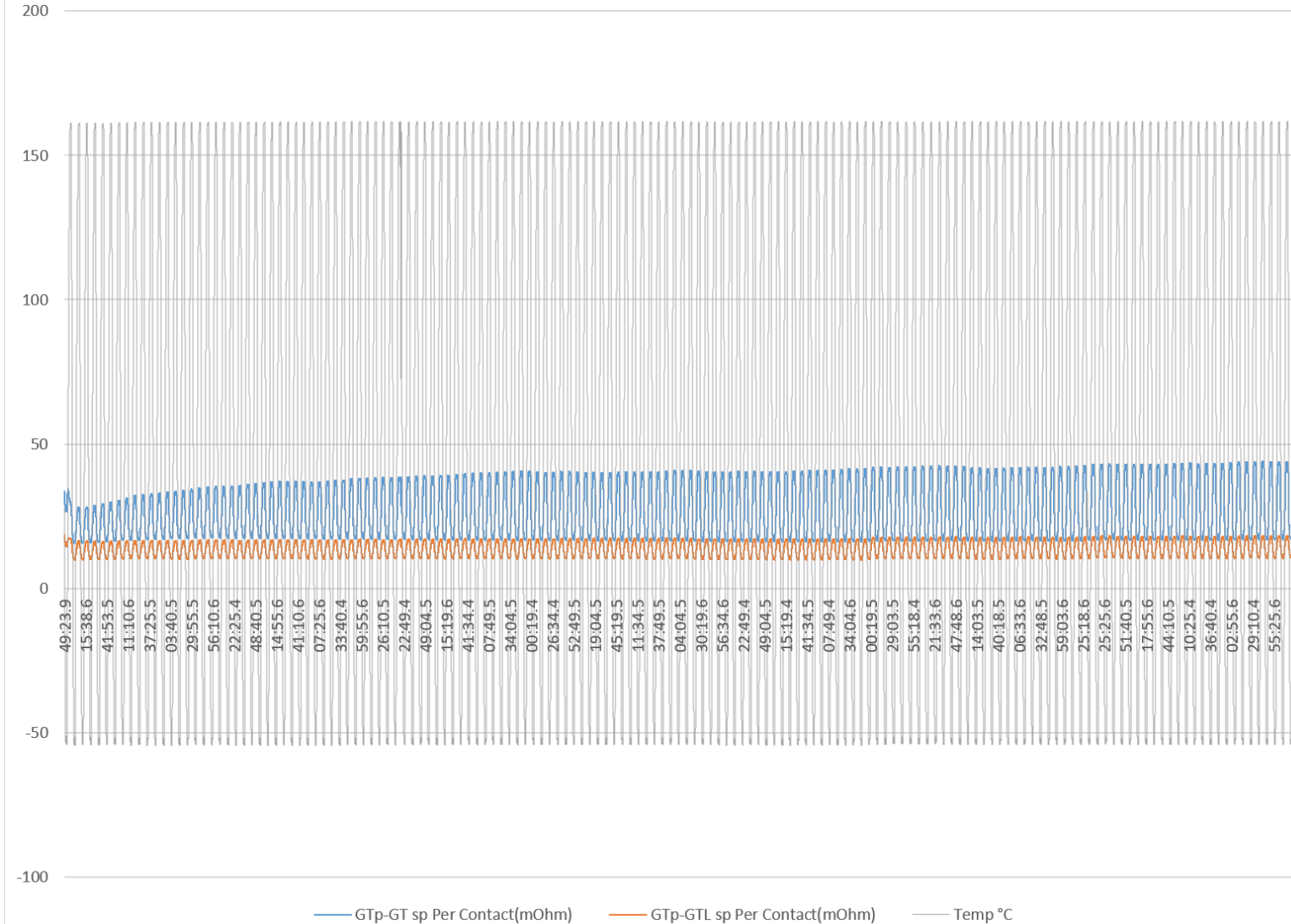
GTP Contact 0.5mm Pitch - Current Capability



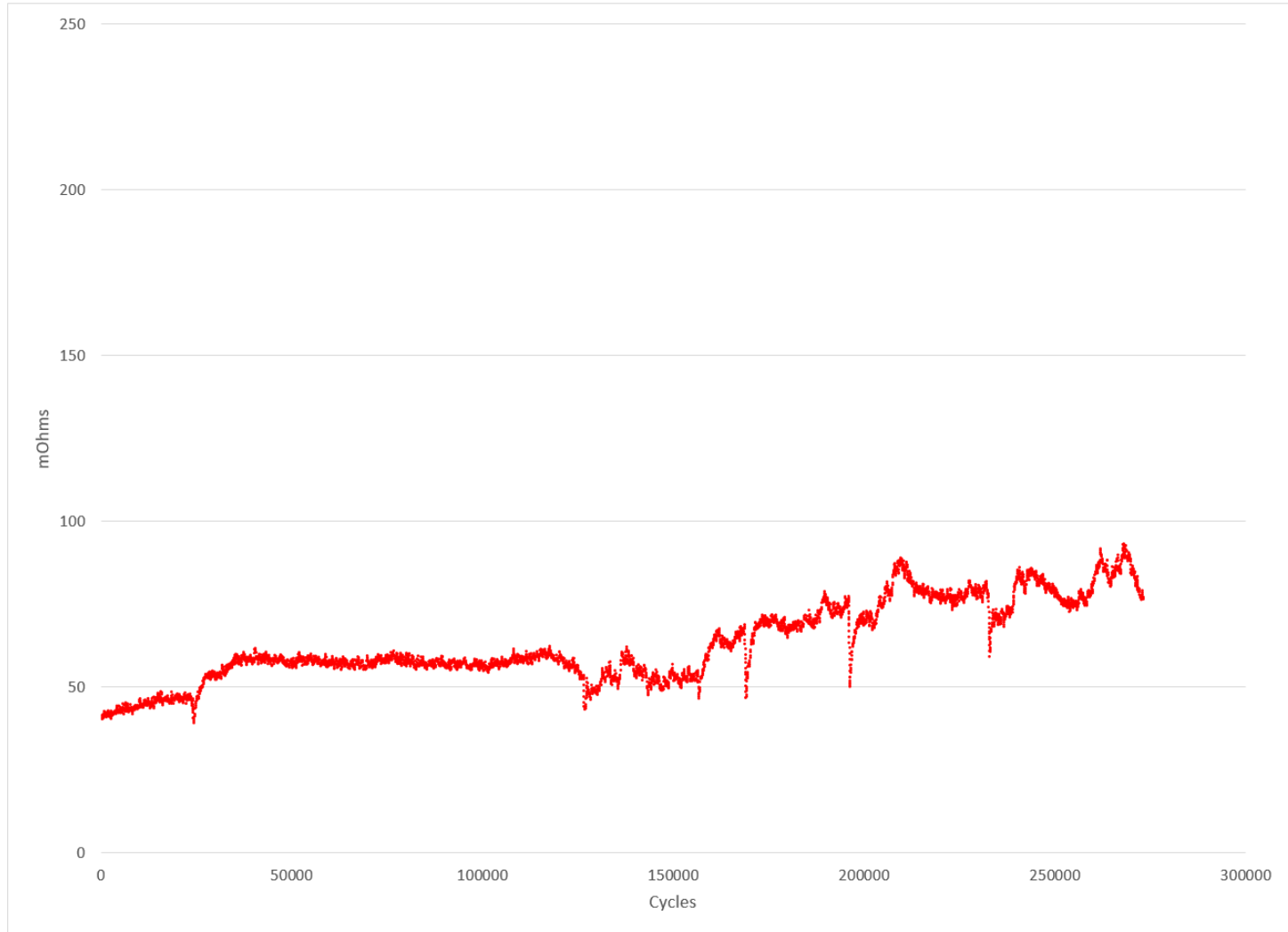
20C rise at 7.79A

GTP Contact

Thermal Cycling -55°C to 160°C – One Month



GTP Contact 0.4mm pitch- Endurance Data



GTP Value Proposition

- High performance elastomer solution for 0.35mm to 1.27mm pitch devices
- Extreme temperature solutions (-55° to +160°C)
- High speed digital and RF applications (excellent bandwidth >93.7GHz)
- 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
- GTP contact provides superior solution in all lab, ATE and evaluation applications due to individual button technology
- GTP sockets with wide temperature range are available in same footprint as other Ironwood sockets
- Custom test socket can be produced using GTP contact in less than 5 weeks when standard socket is not available
- GTP sockets are robust and can be used in demonstration products for multiple handling process without contact degradation
- GTP sockets high cycle life along with high bandwidth provide a solution for next gen ATE production testing