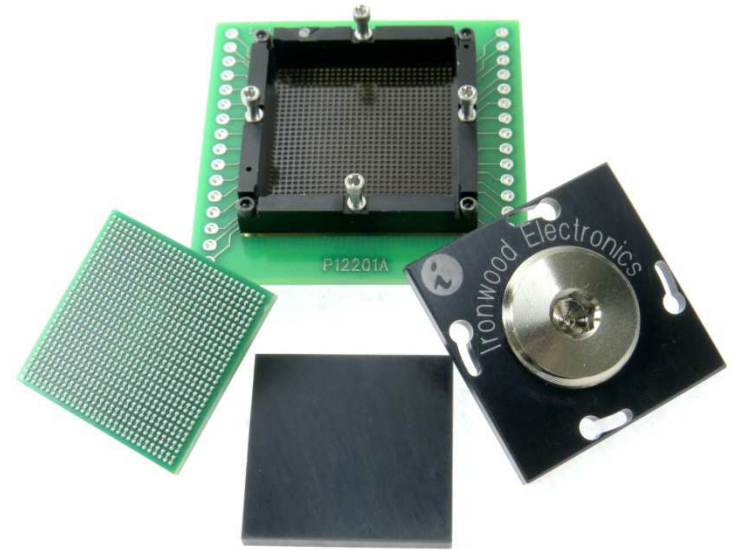




Ironwood
ELECTRONICS
www.ironwoodelectronics.com



SG 9000 Series

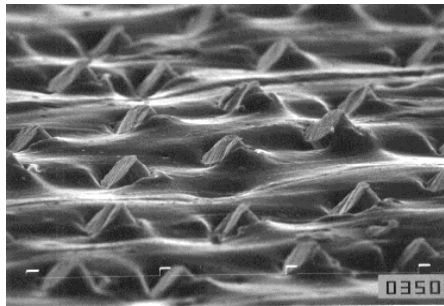
**High Performance
IC Sockets And
Test Adaptors**

Application Need & Solution

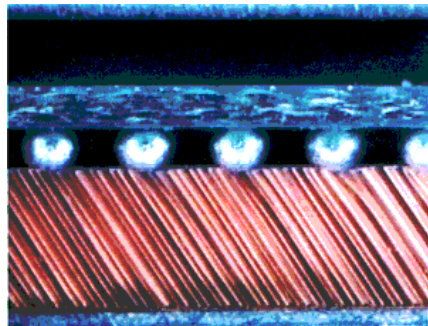
- Low cost for small quantity
- High bandwidth
- Low inductance
- Low contact resistance
- Low cycle count



GHz BGA socket technology provide >40GHz bandwidth in a small, cost effective ZIF socket for prototype and test applications. The GHz BGA socket is a simple mechanical socket based on elastomer contact technology.



Protruded wire
from elastomer



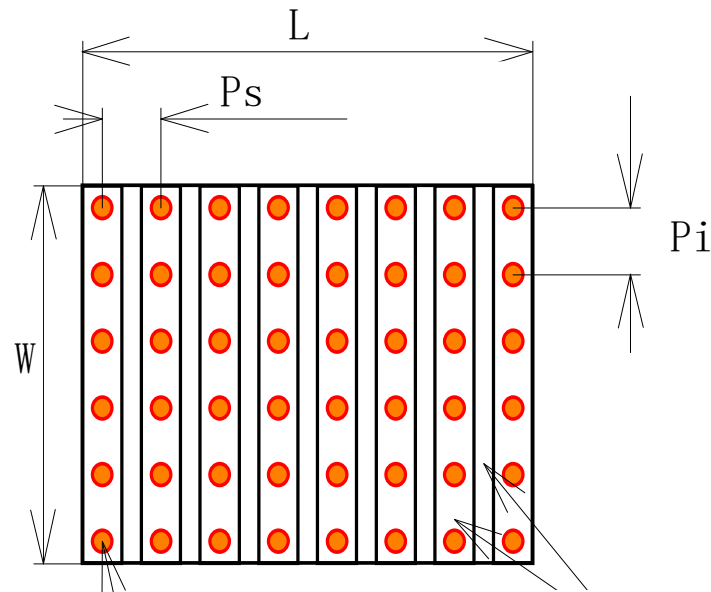
BGA compressed on Elastomer



Wire marks on BGA

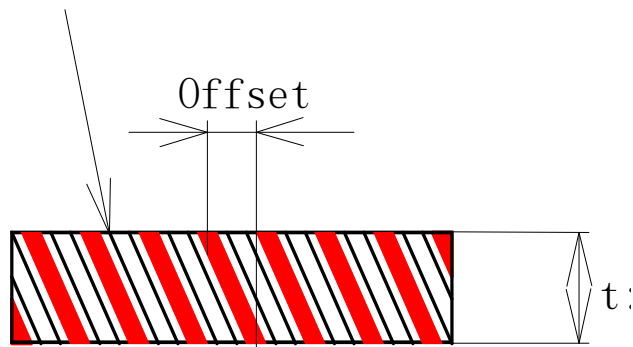
The elastomer consists of a fine pitch wire matrix which are embedded at a 63-degree angle in a soft insulating sheet of silicone rubber. The insulation resistance between connections with 500V DC is 1000 M Ω . The elastomer is ideal for high-current (30mA to 50mA per filament) applications where a thin, high-density anisotropic connector is required. The gold-plated brass filaments protrude several microns from the top and bottom surfaces of the silicone sheet to penetrate heavily oxidized solder ball. The operating temperature range for the elastomer is -35° to 100° C.

Elastomer Classification



Insulation Silicone Rubber

Inclined Gold plated brass wire



SG-6000 series

$P_s, P_i = 0.1\text{mm}$
 $L, W = 1\text{mm to } 50\text{mm}$
 $t = 0.75\text{mm}$
 BGA, QFN, etc, $\geq 0.75\text{mm}$ pitch

SG-7000 series

$P_s, P_i = 0.05\text{mm}$
 $L, W = 1\text{mm to } 50\text{mm}$
 $t = 0.5\text{mm}$
 BGA, QFN, etc, $\geq 0.5\text{mm}$ pitch

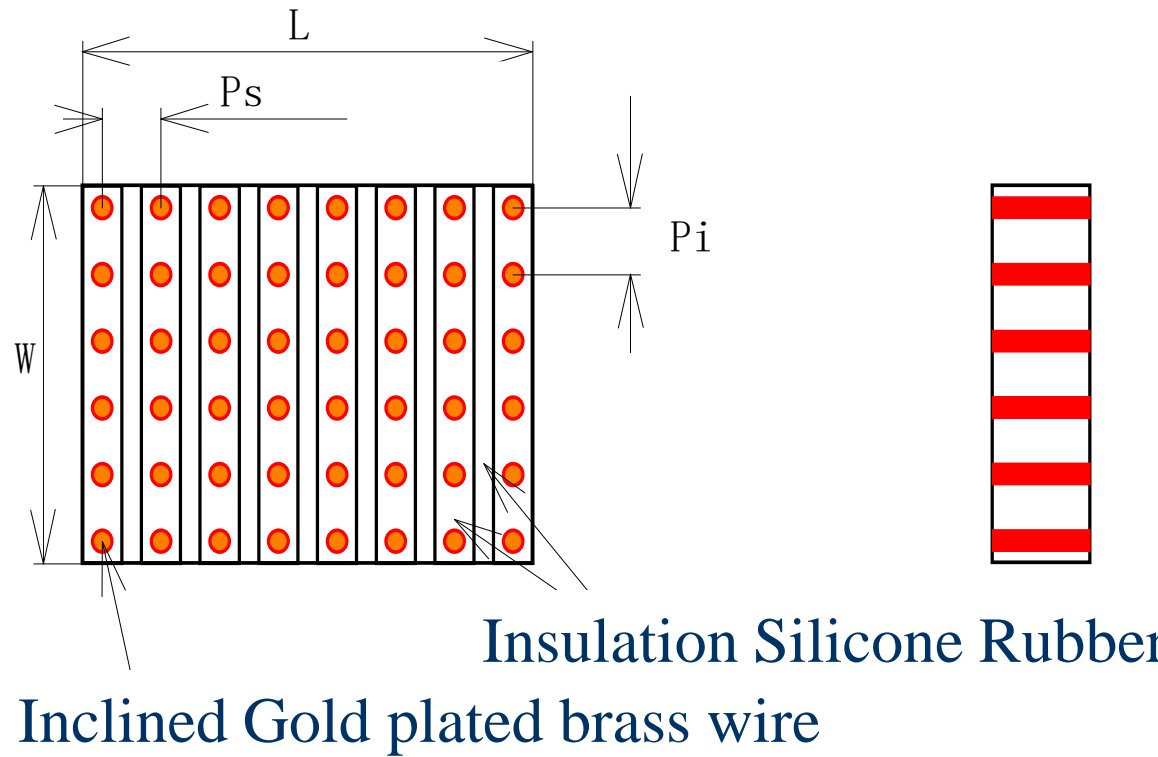
SG-8000 series

$P_s, P_i = 0.1\text{mm}$
 $L, W = 1\text{mm to } 50\text{mm}$
 $t = 0.5\text{mm}$
 BGA, QFN, etc, $\geq 0.75\text{mm}$ pitch

SG-9000 series

$P_s, P_i = 0.075\text{mm}$
 $L, W = 1\text{mm to } 50\text{mm}$
 $t = 0.5\text{mm}$
 BGA, QFN, etc, $\geq 0.4\text{mm}$ pitch

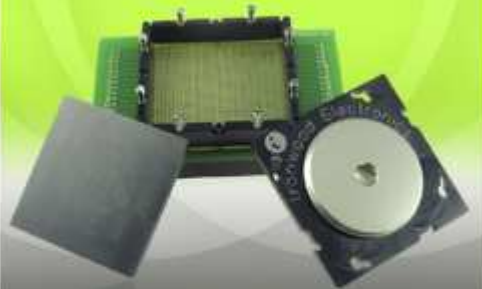
Elastomer Classification



- SG25 - series**
Ps, Pi = 0.05mm
L, W = 1mm to 25mm
t = 0.25mm
BGA, QFN, etc, >=0.3mm pitch
- SG15 - series**
Ps, Pi = 0.05mm
L, W = 1mm to 25mm
t = 0.15mm
BGA, QFN, etc, >=0.3mm pitch

Socket Lid Options

IMPROVED SWIVEL LID



- Easier-to-use swivel lid
- Maintains low-profile design
- Quick IC installation

SNAP LID WITH ADJUSTABLE PRESSURE SCREW SOCKET



- No tools required
- Reliable installation
- Available for all IC's

LEVER LID SOCKET



- Fully removable lid
- Optional heat sink
- Easy access to IC

HEAT SINK LID SOCKET



- Easy 2-in-1 installation
- Up to 100 watts
- Optional fan available

CLAM-SHELL ADJUSTABLE HARD STOP SOCKET



- Easy to use snap lid
- Quick IC installation
- Low profile designs available

OPEN TOP LID SOCKET

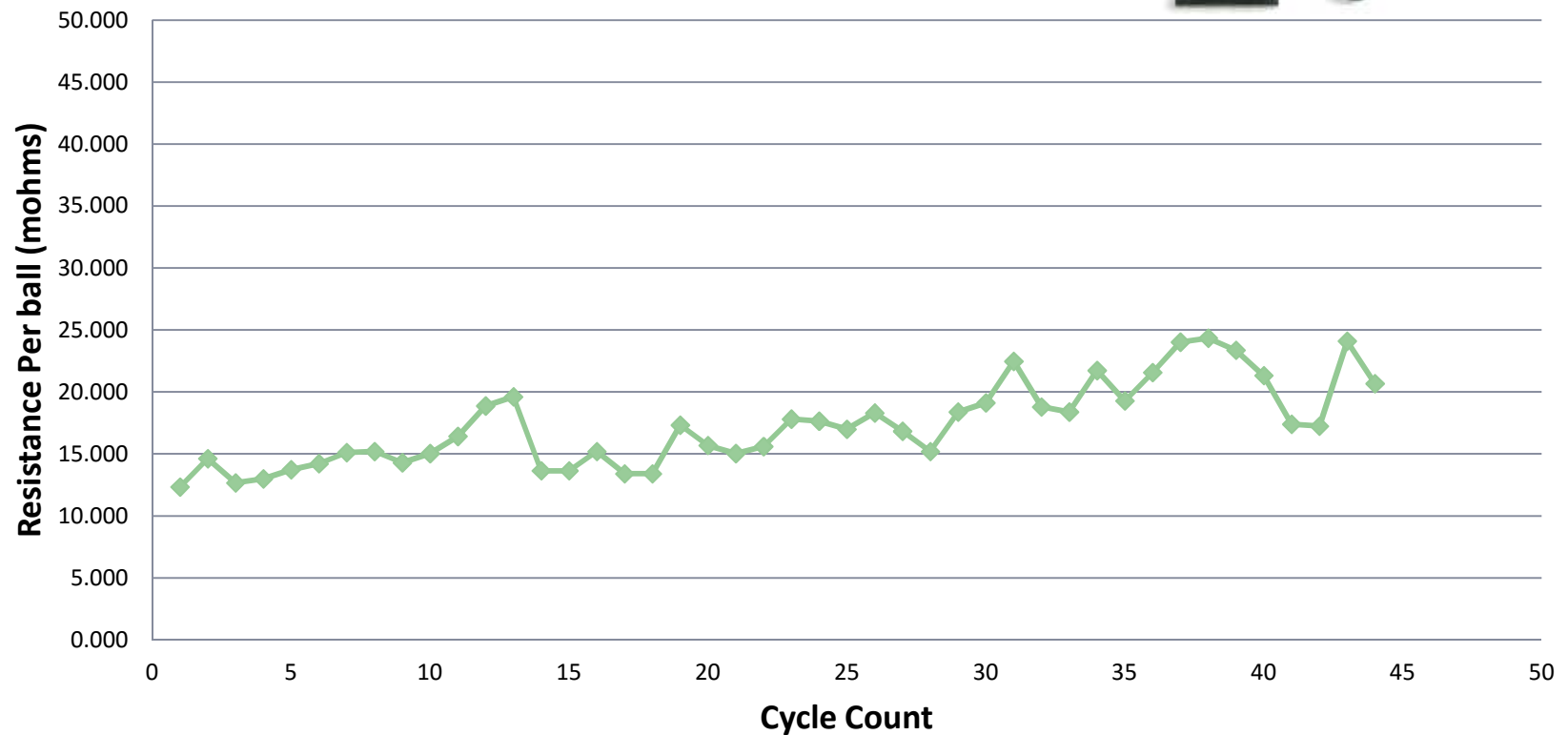
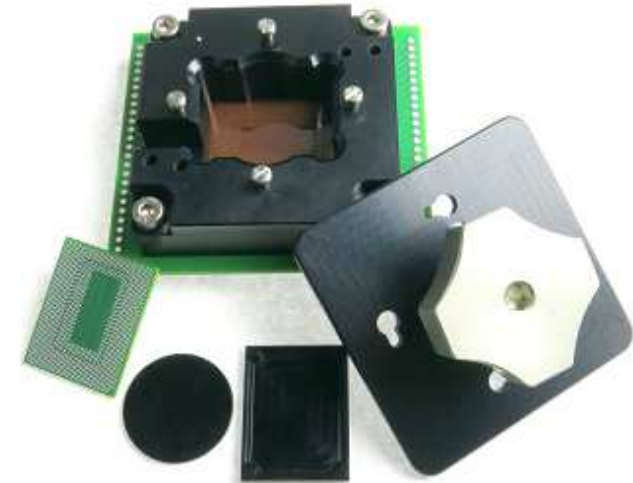


- Optical applications
- Easy access to chip
- Thermal applications

SG 9000 Test Data

BGA1224, 31x24mm, 0.65mm pitch
interstitial ball array

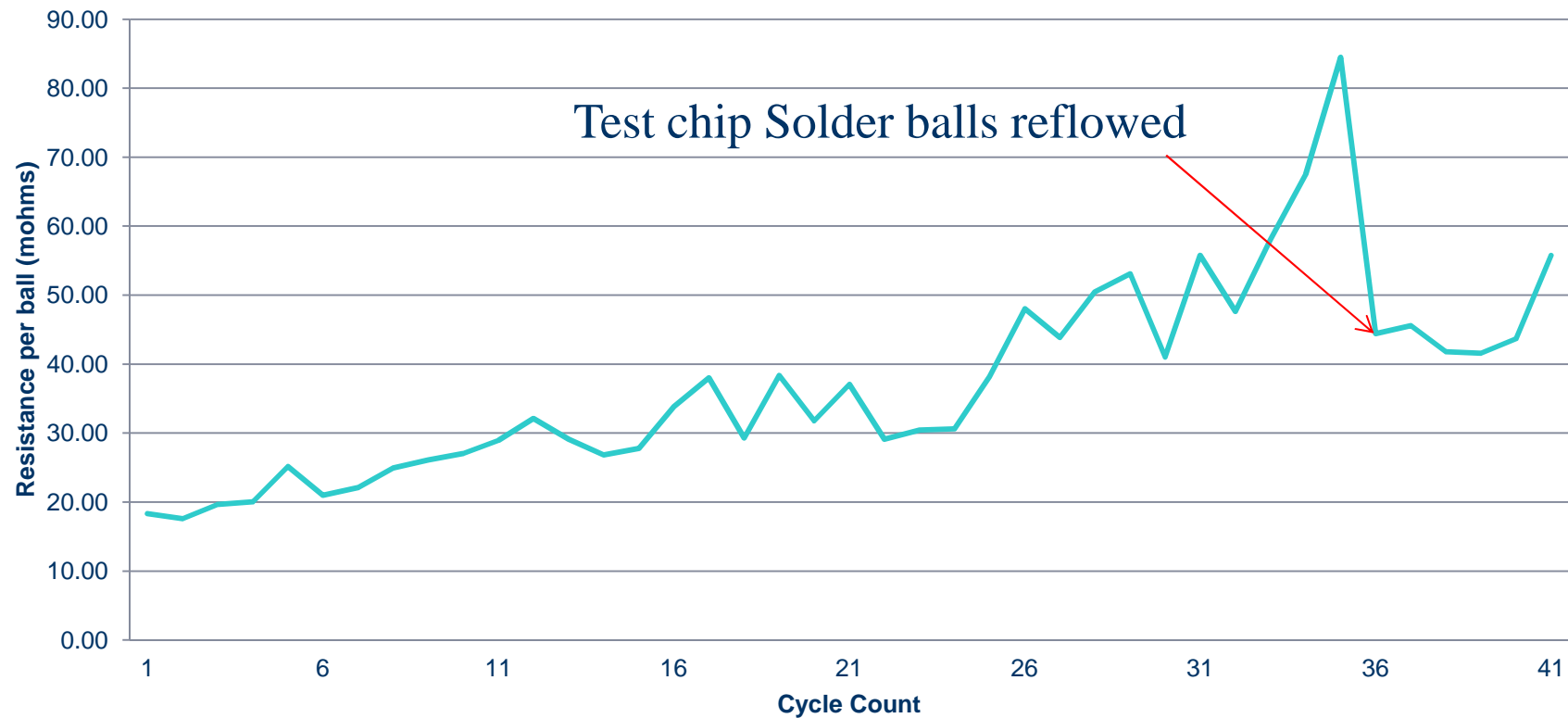
1. Socket assembled to daisy chain test PCB.
2. Daisy chain device simulator placed inside the socket.
3. Recommended torque applied.
4. Contact resistance measured using multi-meter.
5. Un-tighten the compression screw.
6. Step 3-5 repeated.



SG 9000 Test Data

BGA529, 10x10mm, 0.4mm pitch
23x23 ball array

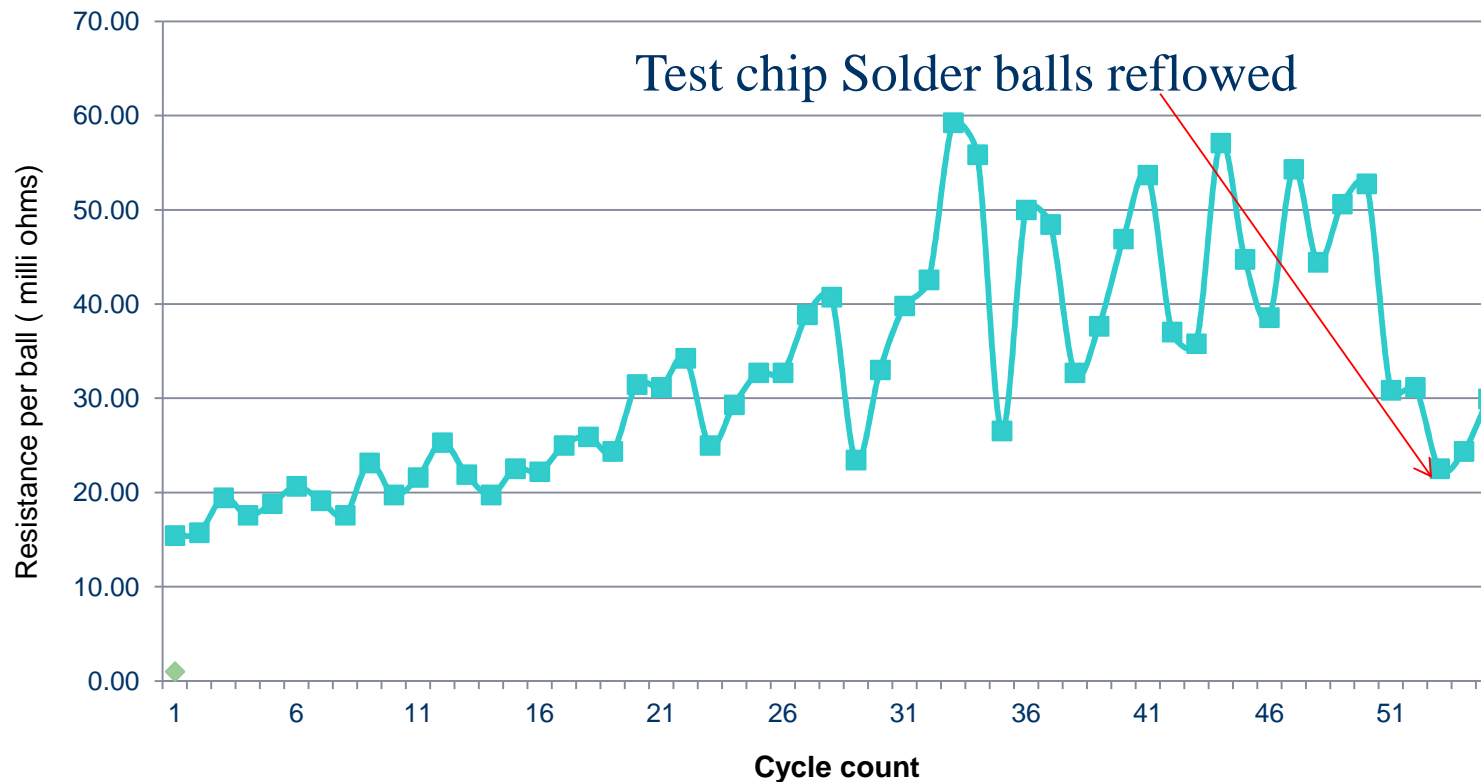
1. Socket assembled to daisy chain test PCB.
2. Daisy chain device simulator placed inside the socket.
3. Recommended torque applied.
4. Contact resistance measured using multi-meter.
5. Un-tighten the compression screw.
6. Step 3-5 repeated.



SG 9000 Test Data

BGA324, 10x10mm, 0.5mm pitch
18x18 ball array

1. Socket assembled to daisy chain test PCB.
2. Daisy chain device simulator placed inside the socket.
3. Recommended torque applied.
4. Contact resistance measured using multi-meter.
5. Un-tighten the compression screw.
6. Step 3-5 repeated.



Elastomer Current Data

- 40 Micron Diameter Cu wire fusing limit is 750mA/wire.
Recommended safe amount = 50mA/wire
- 23 Micron Diameter BeCu wire fusing limit is 350mA/wire.
Recommended safe amount = 30mA/wire
- Maximum amount should not be reached, but higher limits can be achieved as long as the test can handle higher temperature ranges.
- For example: a couple of hundred mA per wire would be fine for a short term test (< 5 sec), but if the test is being held for hours, a heat sink may be necessary to pull off excess heat that may be produced from pushing large amounts of current through each wire.