PogoPlus® High Performance Probe
Achieve Higher Test Productivity – Overnight!
A variety of innovative tip styles give you the flexibility to match the PogoPlus® to your specific test application.

Interaction of the captured ball, bias-cut plunger end and applied spring force guarantees uninterrupted electrical contact with the probe barrel sidewall, virtually eliminating probe related false opens.

A shorter plunger permits more spring volume, higher spring force and longer spring life.

Available steel tips, manufactured with ECT’s MicroSharp™ technology, offer the ultimate in long-lasting tip sharpness and contact integrity.

A double-roll close offers the industry’s best pointing accuracy that helps you hit the smallest test targets with high repeatability.

ECT’s precious metal plating process, together with enhanced bias contact, provides highly repeatable conductivity.

Available steel tips, manufactured with ECT’s MicroSharp™ technology, offer the ultimate in long-lasting tip sharpness and contact integrity.
Objective
Measure the resistance of the PogoPlus and a standard high performance probe as they are compressed and decompressed. For reliable results, a probe should have a resistance of less than 10 milliohms (with a standard deviation of <5 milliohms) throughout the compression/decompression cycle.

Method
Each probe is placed in a calibrated test station that dynamically measures resistance relative to probe displacement. Displacement resolution is 0.0001 inch. For each increment in displacement, resistance is simultaneously measured with a resolution of 1 milliohm.

Results
Test results for the PogoPlus and a competitor’s high performance probe are shown in the graph above.

Discussion
As the displacement vs. resistance graph clearly shows, the bias design of the PogoPlus outperforms the competitor’s probe by demonstrating more repeatable resistivity across its travel range. Because false opens occur when large changes in resistivity occur over short displacements, a steeper slope in the displacement/resistivity curve indicates a greater likelihood of a false reject.

For a more detailed discussion of the test method and results, please ask your ECT salesperson for a copy of the complete test report.
Specifications

POGO-25

Test Centers
.100" (2.54)

Specifications

Mechanical
Full Travel: .250 (6.35) 2/3 travel
Recommended Working Travel: .167 (4.24) 2/3 travel
Mechanical Life Exceeds: 1 x 10^6 cycles

Operating Temperature
-55°C to +105°C Consult factory for other temperature requirements, and other applications below -40°C

Electrical (Static Conditions)
Current Rating: 8 amps
Maximum continuous current, non-inductive at working travel

Probe Resistance
8mΩ With a standard deviation of <1 mΩ @ 25 mA test current

Materials and Finishes
Steel Plunger: Heat-treated tool steel, gold plated over hard nickel
BeCu Plunger: Heat-treated beryllium copper, gold plated over hard nickel
Barrel: Work hardened phosphor bronze, HPA-GOLD™ plated (I.D. and O.D.) over hard nickel
Spring: Music wire
Ball: Stainless steel

Spring Force in oz. (grams)

<table>
<thead>
<tr>
<th>Probe Model</th>
<th>Order Code</th>
<th>Preload</th>
<th>2/3 travel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light</td>
<td>-2</td>
<td>0.99 (20)</td>
<td>2.0 (57)</td>
</tr>
<tr>
<td>Standard</td>
<td>-4</td>
<td>1.46 (41)</td>
<td>4.0 (114)</td>
</tr>
<tr>
<td>Alternate</td>
<td>-6</td>
<td>3.59 (96)</td>
<td>6.0 (170)</td>
</tr>
<tr>
<td>High</td>
<td>-8</td>
<td>2.98 (84)</td>
<td>8.0 (227)</td>
</tr>
<tr>
<td>Ultra High</td>
<td>-10</td>
<td>2.60 (74)</td>
<td>10.0 (283)</td>
</tr>
<tr>
<td>Super</td>
<td>-16</td>
<td>4.49 (127)</td>
<td>16.0 (465)</td>
</tr>
</tbody>
</table>

Receptacle Specifications

HPR-25W (Crimp termination)
HPR-25W-1 (Solder cup termination)
HPR-25W-2 (Wire wrap, square post)
HPR-25W-3 (Connector pin/round post)

POGO-1

Test Centers
.075" (1.91)

Specifications

Mechanical
Full Travel: .250 (6.35) 2/3 travel
Recommended Working Travel: .167 (4.24) 2/3 travel
Mechanical Life Exceeds: 1 x 10^6 cycles

Operating Temperature
-55°C to +105°C Consult factory for other temperature requirements, and other applications below -40°C

Electrical (Static Conditions)
Current Rating: 6 amps
Maximum continuous current, non-inductive at working travel

Probe Resistance
10mΩ With a standard deviation of <3 mΩ @ 25 mA test current

Materials and Finishes
Steel Plunger: Heat-treated tool steel, gold plated over hard nickel
BeCu Plunger: Heat-treated beryllium copper, gold plated over hard nickel
Barrel: Work hardened phosphor bronze, HPA-GOLD™ plated (I.D. and O.D.) over hard nickel
Spring: Music wire
Ball: Stainless steel

Spring Force in oz. (grams)

<table>
<thead>
<tr>
<th>Probe Model</th>
<th>Order Code</th>
<th>Preload</th>
<th>2/3 travel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light</td>
<td>-2</td>
<td>0.94 (27)</td>
<td>2.0 (57)</td>
</tr>
<tr>
<td>Standard</td>
<td>-4</td>
<td>0.33 (9)</td>
<td>4.0 (114)</td>
</tr>
<tr>
<td>Alternate</td>
<td>-6</td>
<td>2.88 (82)</td>
<td>6.0 (170)</td>
</tr>
<tr>
<td>High</td>
<td>-8</td>
<td>2.04 (58)</td>
<td>8.0 (227)</td>
</tr>
<tr>
<td>Ultra High</td>
<td>-10</td>
<td>3.65 (103)</td>
<td>10.0 (283)</td>
</tr>
</tbody>
</table>

Receptacle Specifications

LTR-1W-1 (Crimp termination)
LTR-1W-1 (Solder cup termination)
LTR-1W-2 (Wire wrap, square post)

POGO-72

Test Centers
.050" (1.27)

Specifications

Mechanical
Full Travel: .250 (6.35) 2/3 travel
Recommended Working Travel: .167 (4.24) 2/3 travel
Mechanical Life Exceeds: 1 x 10^6 cycles

Operating Temperature
-55°C to +105°C Consult factory for other temperature requirements, and other applications below -40°C

Electrical (Static Conditions)
Current Rating: 3 amps ± .002
Maximum continuous current, non-inductive at working travel

Probe Resistance
15mΩ With a standard deviation of <2 mΩ @ 25 mA test current

Materials and Finishes
Steel Plunger: Heat-treated tool steel, gold plated over hard nickel
BeCu Plunger: Heat-treated beryllium copper, gold plated over hard nickel
Barrel: Work hardened beryllium copper, HPA-GOLD™ plated (I.D. and O.D.) over hard nickel
Spring: Music wire
Ball: Stainless steel

Spring Force in oz. (grams)

<table>
<thead>
<tr>
<th>Probe Model</th>
<th>Order Code</th>
<th>Preload</th>
<th>2/3 travel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light</td>
<td>-2</td>
<td>0.55 (10)</td>
<td>2.0 (57)</td>
</tr>
<tr>
<td>Standard</td>
<td>-4</td>
<td>1.05 (30)</td>
<td>4.0 (114)</td>
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<tr>
<td>Alternate</td>
<td>-6</td>
<td>2.63 (75)</td>
<td>6.0 (170)</td>
</tr>
<tr>
<td>High</td>
<td>-8</td>
<td>1.48 (42)</td>
<td>8.0 (227)</td>
</tr>
<tr>
<td>Ultra High</td>
<td>-10</td>
<td>3.32 (94)</td>
<td>10.0 (283)</td>
</tr>
</tbody>
</table>

Receptacle Specifications

HPR-72W (Crimp termination)
HPR-72W-1 (Solder cup termination)
HPR-72W-4 (FASTITE® wire termination)
HPR-72W-28 (Pretermined with 28 AWG wire)
HPR-72W-30 (Pretermined with 30 AWG wire)

HOW TO ORDER
1. For each probe, specify the probe model, spring force and tip material (if applicable) as shown in the example.
Example: POGO-72J-2-S

2. Place your order via phone or fax.
Phone 909-625-9390    Fax 909-624-9746

probe | model | tip | style | Spring force | tip material
--- | --- | --- | --- | --- | ---
POGO-72 | J | S | Light | 0.94 (27) | 2.0 (57)
POGO-72 | J | S | Standard | 0.33 (9) | 4.0 (114)
POGO-72 | J | S | Alternate | 2.88 (82) | 6.0 (170)
POGO-72 | J | S | High | 2.04 (58) | 8.0 (227)
POGO-72 | J | S | Ultra High | 3.65 (103) | 10.0 (283)
Beryllium copper plunger with gold plating

Steel plunger with gold plating (add -S to order number)

World Headquarters
Contact Products Group
700 East Harrison Avenue
Pomona, CA 91767
Tel: 909-625-9390
Fax: 909-624-9746

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www.ectinfo.com
Application Examples:
Bare Board Test
Loaded Board Test
Connector / Wire Harness
Package Test

Benefits:
Hands Free Operation
No Hazardous Consumables
Durable
> 50000 Cycles before Tip Replacement
Easy to Fixture

Features:
- Permanent Mark
- Controllable Mark Intensity
- Driven by Test Program
- MicroGrain Carbide Tip
- Replaceable Tip

Requirements:
15 VDC Power Source
.050" Diameter Flat area for Mark
Component Clearance for Loaded Board Test

BMP-1
BMP-2

The BMP-1 Board Marker Probe patented design is for installation on bare board or loaded board test fixtures. When your tester is equipped with the appropriate electronics and software, the BMP-1 scribes a permanent .050" circle on every “passed” PCB tested. Boards that fail the test are not marked. The risk of human error is eliminated in PCB testing and sorting.

The unit requires less than .500” of fixture area. It is designed to mark board areas of bare glass (FR4), solder mask over glass or copper, or bare tinned copper.

The BMP-1 includes a mounting receptacle with press ring, and a motor/transmission assembly. It can be easily removed from the receptacle for use in other fixtures. Spare receptacles and tip replacement assemblies are available. The thread between receptacle and housing is 7/16-20 UNF.

Probe Specifications BMP-1 BMP-2

<table>
<thead>
<tr>
<th>Mechanical</th>
<th>BMP-1</th>
<th>BMP-2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Marker Tip Travel:</td>
<td>.062 (1.57)</td>
<td>.062 (1.57)</td>
</tr>
<tr>
<td>Recommended Working Travel:</td>
<td>.050 (1.27)</td>
<td>.050 (1.27)</td>
</tr>
<tr>
<td>Direction of Rotation:</td>
<td>CCW</td>
<td>CCW</td>
</tr>
<tr>
<td>Scribed Diameter:</td>
<td>.050 (1.27)</td>
<td>.050 (1.27)</td>
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<tr>
<td>Special diameters available.</td>
<td></td>
<td></td>
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<table>
<thead>
<tr>
<th>Electrical</th>
<th>BMP-1</th>
<th>BMP-2</th>
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<tbody>
<tr>
<td>Current Rating:</td>
<td>50 mA</td>
<td>50 mA</td>
</tr>
<tr>
<td>Voltage Rating:</td>
<td>15VDC</td>
<td>15VDC</td>
</tr>
<tr>
<td>Recommended Duty Cycle:</td>
<td>1 sec. On (min.), 1 sec. Off</td>
<td>1 sec. On (min.), 5 sec. Off</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Materials and Finishes</th>
<th>BMP-1</th>
<th>BMP-2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plunger Tip:</td>
<td>Carbide</td>
<td>Carbide</td>
</tr>
<tr>
<td>Receptacle:</td>
<td>Stainless steel</td>
<td>Stainless steel</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mounting Hole Size:</th>
<th>BMP-1</th>
<th>BMP-2</th>
</tr>
</thead>
<tbody>
<tr>
<td>468/469 (11.89/11.91)</td>
<td>468/469 (11.89/11.91)</td>
<td></td>
</tr>
</tbody>
</table>

HOW TO ORDER
Specify model number of components or tools you require:
BMP-1, -2: Probe and receptacle, wires and connector attached, mating connector supplied, (-red, + black).
BMR-1, -2: Receptacle only.
BMT-1: Tip replacement assembly for both BMT-1 and BMT-2.
RIT-BMP: Receptacle insertion tool for BMR-1.
EXT-BMP: Receptacle extraction tool for BMR-1.