smiths interconnect

0.075" Centers

Standard Spring Probes

Board Test Fixture Probes & Receptacles

Board Test Spring Probes

Smiths Interconnect offers a wide range of spring contact probes to meet your testing requirements and has long been recognized as the world's largest probe manufacturer. With over 60 different probe series that includes our standard Board Test Fixture Probes as well as our Specialty Test Probes, we provide a full portfolio designed for general purpose test on bare boards, loaded printed circuit boards, surface mount assemblies and other forms of test.

MICRO SERIES PROBES

The Micro probe series range in pitch from 0.20" (0.51 mm) to 0.030" (0.76 mm) pitch and are typically between half an inch to an inch in length.

ROTATOR PROBES

Ideal for non-clean and lead-free applications, this aggressive probe rotates 90° at the rated travel, virtually drilling through contaminants with a low spring force.

STANDARD PROBES

Our standard probes range in pitch from 0.039" (1.00 mm) to 0.187" (4.75 mm). Within most series, there are multiple length and travel options, including more aggressive probes dimensionally equivalent to the standard probes.

HIGH CURRENT PROBES

We offer two different high current probe designs in four different pitches. The SH series features a bias ball, which is the most aggressive biasing technique to aid in assuring a low and consistent resistance, cycle after cycle. The SHE Series features a bias spring, an effective biasing technique for many applications.

DOUBLE-ENDED PROBES & RECEPTACLES

Double-ended probes feature both a top-side and bottom-side compliant plunger. Double-ended receptacles are available with a permanent bottom-side plunger and a replaceable probe on the top side. They are also available with both a top and bottom-side replaceable probe.

SWITCH PROBES

A Switch Probe is a spring contact probe and receptacle that has two individual current paths. One current path is closed, the other is open and after a designated travel the second current path closes.

LEAD FREE PROBES

The Lead Free probe series is based on our ICT Probe Series. The plunger material, plating and tip geometry have been optimized to provide less wear and contamination build-up while using a moderate spring force of 7 to 8 ounces.

THERMOCOUPLE PROBES

The Thermocouple Probe is an ungrounded, thermally conductive probe used for the measurement of variations in temperature. We offer two Thermocouple Probes: Type T for up to 220°F, and Type K for up to 350°F.

ICT PROBES

The ICT probe design features a bifurcated barrel with four separate fingers. The barrel is compliant and formed against the plunger, thus eliminating any gap between the plunger and barrel. ICT probes are more accurate and stable in resistance than standard designs.

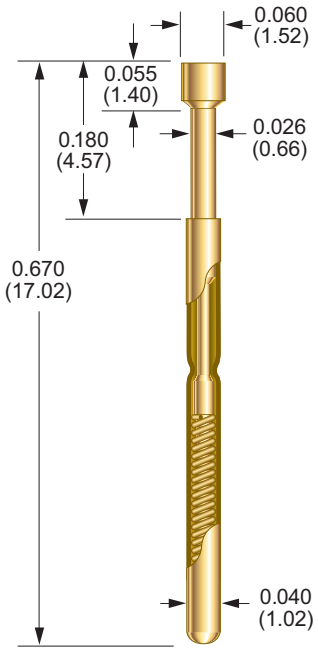
COAXIAL PROBES

Our Coax Probes provide a low noise, controlled impedance signal path with reliable, easy connect/disconnect options. Our designs include a spring-loaded signal probe and a spring-loaded shielding plunger for the ground.

S-1 Series

0.075 (1.91) Centers

For R-1 Series Receptacles see pg. 8



BeCu Tips	Diameter
90° A	0.060 (1.52)
30° B	0.026 (0.66)
C	0.026 (0.66)
D	0.040 (1.02)
90° E	0.060 (1.52)
F	0.060 (1.52)
H	0.060 (1.52)
J	0.026 (0.66)
45° K	0.060 (1.52)
60° U	0.026 (0.66)

Probe Specifications

Minimum Centers	0.075 (1.91)
Current Rating	3 A continuous
Spring Force	2.00 oz (57 g), 3.80 oz (108 g), or 6.60 oz (187 g) @ 0.070 (1.78) travel
Preload Force	0.80 oz (23 g) *(2.00 oz spring/stainless steel)* 1.50 oz (43 g) *(3.80 oz spring/stainless steel)* 2.00 oz (57 g) *(6.60 oz spring/music wire)*
Typical Resistance	< 25 mΩ
Maximum Travel	0.100 (2.54)
Working Travel	0.070 (1.78)

Materials

Barrel	Nickel/silver, gold plated
Spring	Stainless steel, or music wire, gold plated
Plunger	Beryllium copper, gold plated over nickel, or Duralloy™

How to Order

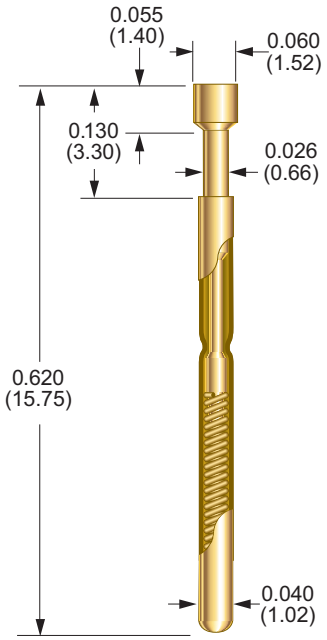
S - 1 - A - 3.8 - G
1 2 3 4 5

1	Series	S SX (1)
2	Size	1
3	Tip Style	A, B, C, D, E, F, H, J, K, U
4	Spring Force	2 oz 3.8 oz 6.6 oz
5	Plunger Plating	G Gold D Duralloy™

SS-75 Series

0.075 (1.91) Centers

For R-1 Series Receptacles see pg. 8



BeCu Tips	Diameter
90° A	0.060 (1.52)
30° B	0.026 (0.66)
C	0.026 (0.66)
D	0.040 (1.02)
90° E	0.060 (1.52)
F	0.060 (1.52)
H	0.060 (1.52)
J	0.026 (0.66)
45° K	0.060 (1.52)
60° U	0.026 (0.66)

Probe Specifications

Minimum Centers	0.075 (1.91)
Current Rating	3 A continuous
Spring Force	2.40 oz (68 g) or 4.90 oz (139 g) @ 0.050 (1.27) travel
Preload Force	1.70 oz (48 g) *(2.40 oz spring/stainless steel)* 3.10 oz (88 g) *(4.90 oz spring/stainless steel)*
Typical Resistance	< 25 mΩ
Maximum Travel	0.050 (1.27)
Working Travel	0.050 (1.27)

Materials

Barrel	Nickel/silver, gold plated
Spring	Stainless steel, gold plated
Plunger	Beryllium copper, gold plated over nickel or Duralloy™

How to Order

SS - 75 - A - 2.4 - G

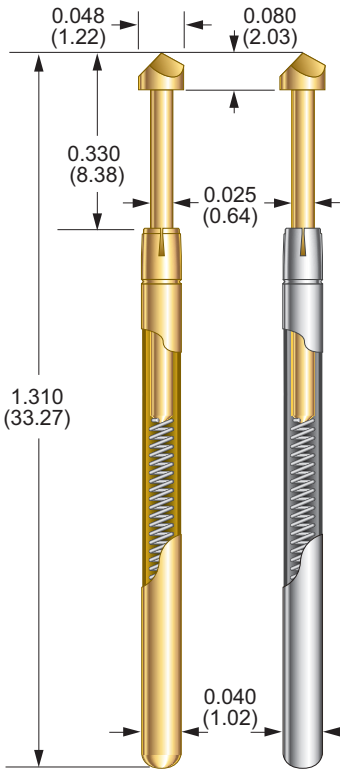
1 2 3 4 5

1	Series	SS SSX (1)
2	Size	75
3	Tip Style	A, B, C, D, E, F, H, J, K, U
4	Spring Force	2.4 oz 4.9 oz
5	Plunger Plating	G Gold D Duralloy™

ICT-075 & S-075 Series

0.075 (1.91) Centers

For R-075 Series Receptacles see pg. 9
For R-075-J-DE Wireless Series Receptacles see pg. 10



BeCu Tips	Diameter
90° A	0.048 (1.22)
30° B	0.025 (0.64)
H	0.048 (1.22)
J	0.025 (0.64)
60° T	0.048 (1.22)
60° U	0.025 (0.64)
V8	0.048 (1.22) 8 Pts.

Steel Tips	Diameter
30° B	0.025 (0.64)
SP	0.025 (0.64)
60° U	0.025 (0.64)

Probe Specifications

Minimum Centers	0.075 (1.91)
Current Rating	3 A continuous
Spring Force	3.00[1] oz (85 g), 5.00 oz (142 g), 7.00 oz (198 g), or 10.00 oz (283 g) @ 0.170 (4.32) travel
Preload Force	1.20 oz (34 g) *(3.00[1] oz spring)* 2.00 oz (57 g) *(5.00 oz spring)* 2.90 oz (82 g) *(7.00 oz spring)* 3.30 oz (94 g) *(10.00 oz spring)*
Typical Resistance	< 25 mΩ
Maximum Travel	0.250 (6.35)
Working Travel	0.170 (4.32)

Materials

Barrel	ICT Series: Gold lined S Series: Gold plated I.D. and O.D.
Spring	Music wire, nickel plated
Plunger	Beryllium copper, or steel, gold plated over nickel

How to Order

ICT - 075 - T - 5 - G - S
1 2 3 4 5 6

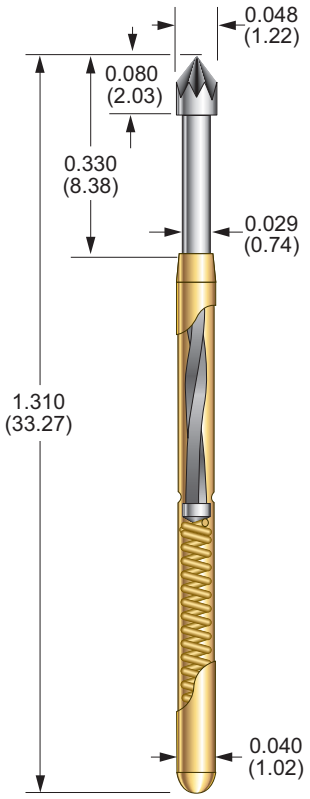
1	Series	ICT[2] S
2	Size	075
3	Tip Style	A, B, H, J, SP, T, U V8
4	Spring Force	3 oz[1] 5 oz 7 oz 10 oz
5	Plunger Plating	G Gold
6	Steel Plunger Option	S Steel

1 3.00 oz spring for S-075 Series only
2. High performance

S-075 Rotator Series

0.075 (1.91) Centers

For R-075 Series Receptacles see pg. 9



BeCu Tips	Diameter
90° LM	0.048 (1.22)
60° S	0.029 (0.74)

Probe Specifications

Minimum Centers	0.075 (1.91)
Current Rating	3 A continuous
Spring Force	3.80 oz (108 g) or 6.60 oz (187 g) @ 0.170 (4.32) travel
Preload Force	0.50 oz (14 g) *(3.80 oz spring)* 1.60 oz (45 g) *(6.60 oz spring)*
Typical Resistance	< 25 mΩ
Maximum Travel	0.225 (5.72)
Working Travel	0.170 (4.32)
Rotation	90° @ 0.170 (4.32) travel

Materials

Barrel	G2
Spring	Music wire, gold plated
Plunger	Beryllium copper, Duralloy™ plated

How to Order

S - 075 - LM - 3.8 - RT

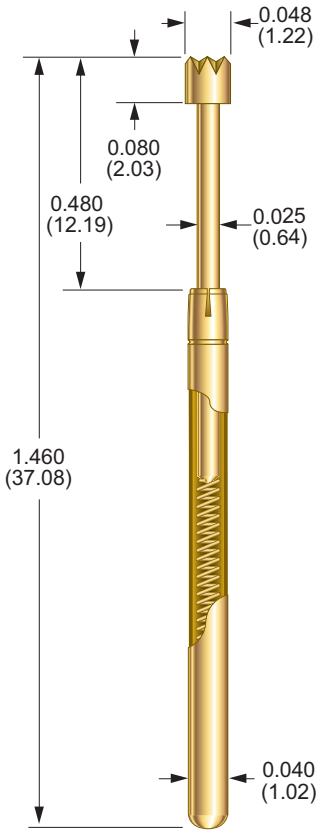
1 2 3 4 5

1	Series	S
2	Size	075
3	Tip Style	LM, S
4	Spring Force	3.8 oz 6.6 oz
5	Rotator	RT

ICT-L075 Series

0.075 (1.91) Centers

For R-075 Series Receptacles see pg. 9
For R-075-J-DE Wireless Series Receptacles see pg. 10



BeCu Tips	Diameter
 H	0.048 (1.22) 
 J	0.025 (0.64) 

Probe Specifications

Minimum Centers	0.075 (1.91)
Current Rating	3 A continuous
Spring Force	4.30 oz (122 g) @ 0.317 (8.05) travel
Preload Force	1.80 oz (51 g)
Typical Resistance	< 15 mΩ
Maximum Travel	0.400 (10.16)
Working Travel	0.317 (8.05)

Materials

Barrel	G2
Spring	Music wire, gold plated
Plunger	Beryllium copper, gold plated over nickel

How to Order

ICT	-	L075	-	H	-	4.3	-	G	-	S
1		2		3		4		5		6

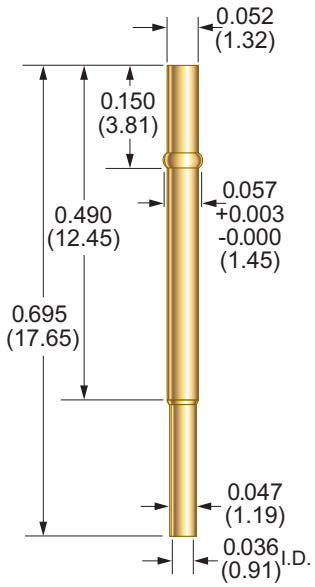
1	Series	ICT
2	Size	L075
3	Tip Style	H, J
4	Spring Force	4.3 oz
5	Plunger Plating	G Gold
6	Steel Plunger Option	S Steel

R-1 Series

0.075 (1.91) Centers

For S-1 Series Probes see pg. 3
For SS-75 Series Probes see pg. 4

Part Number	Style/Termination	Receptacle or Terminal Length	Probe/Receptacle Combined Length		Notes
			S-1	SS-75	
R-1-CR	Crimp	0.695 (17.65)	0.875 (22.23)	0.825 (20.96)	—
R-1-SC	Solder Cup	0.695 (17.65)	0.875 (22.23)	0.825 (20.96)	—
R-1-RP	Round Post	1.070 (27.18)	1.250 (31.75)	1.200 (30.48)	0.375 post length – 0.025 dia.
R-1-WW-429	Wire Wrap	1.124 (28.55)	1.304 (33.12)	1.254 (31.85)	0.429 post length – 0.025 dia.



Probe Specifications

Minimum Centers	0.075 (1.91)
Drill Size	1.45 mm
Mounting Hole Size	0.055/0.057 (1.40/1.45)
Recommended Wire	24-28 gage
Materials	Nickel/silver, gold plated, gold plated post

Tools

Crimping Pliers	CP-1 *(for 24-28 gage solid conductor)*
Insertion Tool	RT-1

How to Order

R - 1 - WW - 429
1 2 3

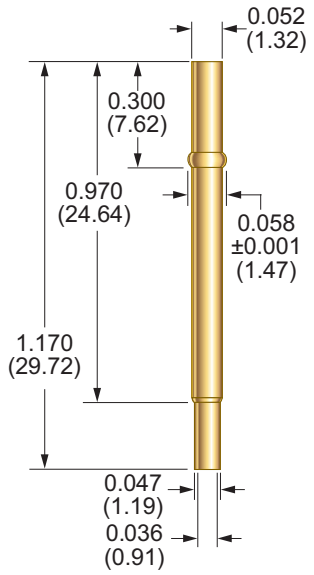
1	Series	R	
2	Size	1	
3	Termination	CR	Crimp
		SC	Solder Cup
		RP	Round Post
		WW-429	Wire wrap 0.429 post length

R-075 Series

0.075 (1.91) Centers

For ICT-075/S-075 Series Probes see pg. 5
For S-075 Rotator Series Probes see pg. 6
For ICT-L075 Series Probes see pg. 7

Part Number	Style/Termination	Receptacle or Terminal Length	Probe/Receptacle Combined Length		Notes
			ICT-075/S-075	ICT-L075	
R-075-CR	Crimp	1.170 (29.72)	1.500 (38.10)	1.650 (41.91)	—
R-075-SC	Solder Cup	1.170 (29.72)	1.500 (38.10)	1.650 (41.91)	—
R-075-RP	Round Post	1.545 (39.24)	1.875 (47.63)	2.025 (51.44)	0.375 post length – 0.025 dia.
R-075-WW-429	Wire Wrap	1.599 (40.61)	1.929 (49.00)	2.079 (52.81)	0.429 post length – 0.025 dia.



Probe Specifications

Minimum Centers	0.075 (1.91)
Drill Size	1.45 mm
Mounting Hole Size	0.055/0.057 (1.40/1.45)
Recommended Wire	24-28 gage
Materials	Nickel/silver, gold plated, gold plated post

Tools

Crimping Pliers	CP-1 *(for 24-28 gage solid conductor)*
Insertion Tool	RT-1

How to Order

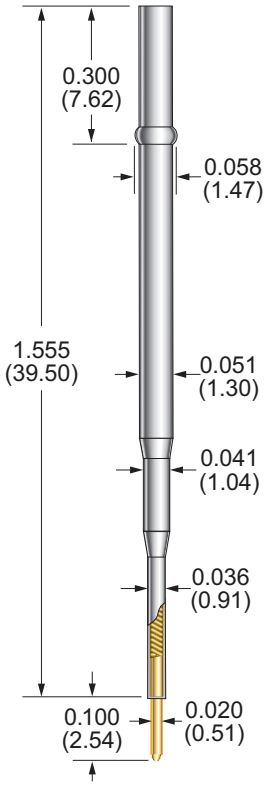
R - 075 - WW - 429
1 2 3

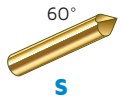
1 Series	R	
2 Size	075	
3 Termination	CR	Crimp
	SC	Solder Cup
	RP	Round Post
	WW-429	Wire wrap 0.429 post length

R-075-J-DE Series

0.075 (1.91) Centers | Wireless Receptacle

For ICT-075/S-075 Series Probes see pg. 5
For ICT-L075 Series Probes see pg. 8



BeCu Tips	Diameter
 J	0.020 (0.51) 
 60° S	0.020 (0.51) 

Probe Specifications

Minimum Centers	0.075 (1.91)
Drill Size	1.45 mm
Mounting Hole Size	0.055/0.057 (1.40/1.45)
Spring Force	2.70 oz (77 g) @ 0.070 (1.77) travel
Maximum Travel	0.100 (2.54)
Working Travel	0.070 (1.77)

Materials

Receptacle	Nickel/silver, gold lined inside
Spring	Music wire, gold plated
Plunger	Beryllium copper, gold plated over nickel

TOOLS

Insertion Tool	RT-1

How to Order

R - 0 7 5 - J - D E
1 2 3 4

1	Series	R
2	Size	0 7 5
1	Tip Style	J, S
2	Termination	D E Double Ended

Worldwide Support

Connectors

Americas

Sales
connectors.uscsr@smithsinterconnect.com

Technical Support
connectors.ustechsupport@smithsinterconnect.com

Europe

Sales
connectors.emeacsr@smithsinterconnect.com

Technical Support
connectors.emeatechsupport@smithsinterconnect.com

Asia

Sales
asiacsr@smithsinterconnect.com

Technical Support
asiatechsupport@smithsinterconnect.com

Fiber Optics & RF Components

Americas

Sales
focom.uscsr@smithsinterconnect.com

Technical Support
focom.techsupport@smithsinterconnect.com

Europe

Sales
focom.emeacsr@smithsinterconnect.com

Technical Support
focom.techsupport@smithsinterconnect.com

Asia

Sales
focom.asiacsr@smithsinterconnect.com

Technical Support
focom.techsupport@smithsinterconnect.com

Semiconductor Test

Americas

Sales
semi.uscsr@smithsinterconnect.com

Technical Support
semi.techsupport@smithsinterconnect.com

Europe

Sales
semi.emeacsr@smithsinterconnect.com

Technical Support
semi.techsupport@smithsinterconnect.com

Asia

Sales
semi.asiacsr@smithsinterconnect.com

Technical Support
semi.techsupport@smithsinterconnect.com

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subsystems.csr@smithsinterconnect.com

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