

Semiconductor Pogo® Products

ZIP®

PRODUCT PORTFOLIO

Final Test Socket Applications

Burn-In Socket Applications

Test System Interface Applications



**Everett Charles
Technologies**

A **DOVER** COMPANY

The ZIP[®] advantage ...

Material Cost • Performance • Economy in Manufacturing
Application Versatility • Scalability for Tighter Pitches
Single Architecture for All Applications and Pitches

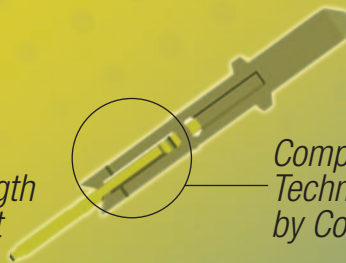
Longer Travel and Larger Contact Area in Shorter OAL

Go the Distance

ZIP[®] technology allows longer travel.



*Round Technology
Limited by Plunger Length
and Spring Dead Height*



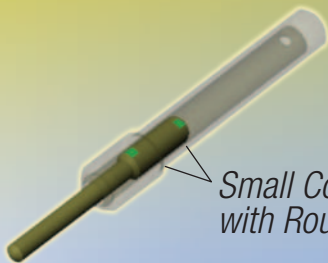
*Competitor Flat
Technology Limited
by Complex Features*



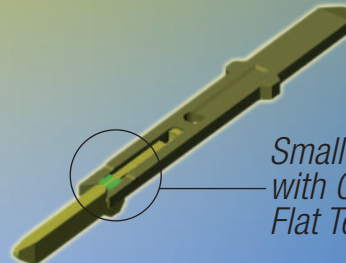
*Travel isn't Limited
by Spring or
Features.*

Stay in Contact

Large internal contact area results in low C-Res,
superior bandwidth, and excellent high current behavior.



*Small Contact Areas
with Round Technology*



*Small Contact Areas
with Competitor
Flat Technology*



*Large Internal
Contact Area*

Specification Superiority

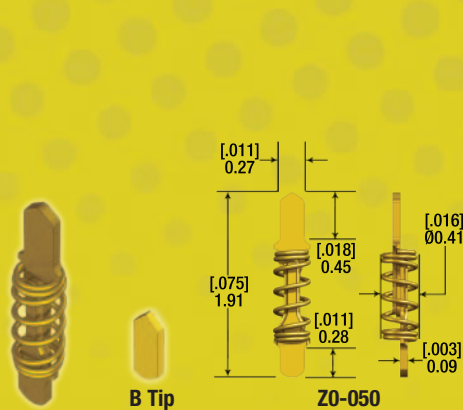
COMPARISON	Conventional Round Probe	ZIP [®] Z0 Flat Technology	ZIP [®] Z3 Flat Technology
Mechanical			
Overall Length:	7.62mm (0.3")	1.91mm (0.075")	6.70mm (0.263")
Test Height:	6.86mm (0.27")	1.51mm (0.06")	5.48mm (0.215")
Working Travel:	0.76mm (0.03")	0.40mm (0.016")	1.22mm (0.048")
Force			
Maximum Spring Force at Working Travel:	20g (0.7oz)	18g (0.65oz)	40g (1.41oz)
Electrical			
Average DC Resistance:	<100 mOhms	<50 mOhms	<70 mOhms
Bandwidth:	8.1GHz @ -1dB	40.0GHz @ -1dB	7.0GHz @ -1dB
Inductance:	1.50nH	0.56nH	1.3nH

High Frequency, Low Inductance, High Current

ECT's Z0 SuperShort and Z1 series takes advantage of the ZIP® scalable architecture to arrive at an ultra-compact design tailor-made for low impedance and high frequency testing in high volume production environments without sacrificing life and travel.

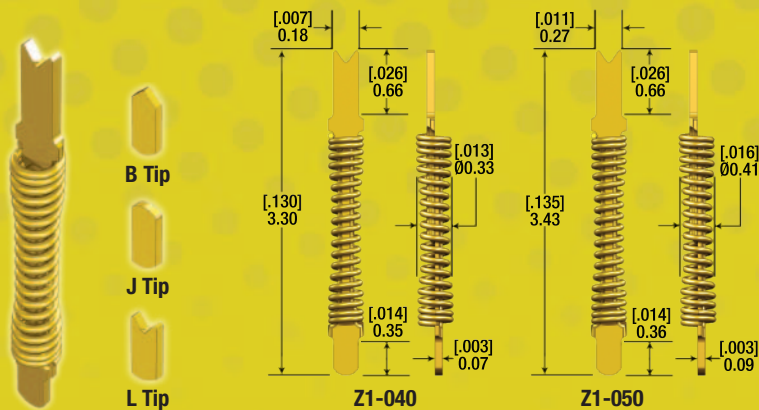
Z0 SERIES SUPERSHORT, 1,91MM OAL

Z1 SERIES 3,43/3.30 MM OAL



Z0-050	
Mechanical	
Pitch:	0.50/0.65mm
Overall Length:	1.91mm (0.075")
Test Height:	1.51mm (0.059")
Maximum Travel:*	0.40mm (0.016")
Spring Force:	18g (0.63oz)
Mechanical Life:**	1000k Cycles
Electrical	
Average DC Resistance:***	<50 mOhms
Current Capacity	1.90A (20°C T-Rise)
Bandwidth (GHz)	40.0GHz @ -1dB
Inductance (Ls)	0.56nH

HOW TO ORDER				
Series	Category	Minimum Pitch	DUT Tip Style	HIB Tip Style
Z	0	050	B	J

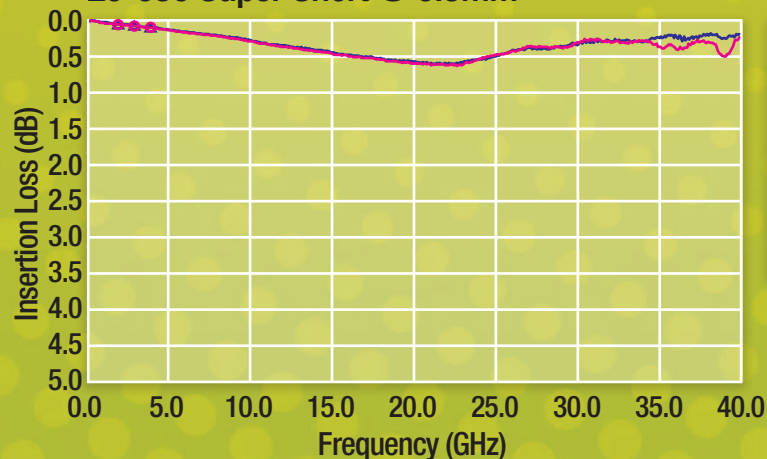


	Z1-030	Z1-040	Z1-050	Z1-080
Mechanical				
Pitch:	0.30mm	0.40mm	0.50/0.65mm	≥0.80mm
Overall Length:	3.43mm (0.135")	3.31mm (0.130")	3.43mm (0.135")	4.37mm (0.172")
Test Height:	2.67mm (0.105")	2.67mm (0.105")	2.79mm (0.110")	3.45mm (0.136")
Maximum Travel:*	0.67mm (0.026")	0.64mm (0.025")	0.64mm (0.025")	0.92mm (0.036")
Spring Force:	25g (0.88oz)	34g (1.20oz)	40g (1.40oz)	28g (0.98oz)
Mechanical Life:**	TBA	1000k Cycles	1000k Cycles	1000k Cycles
Electrical				
Average DC Resistance:***	Coming in Q4 2011	<50 mOhms	<40 mOhms	Coming in Q2 2011
Current Capacity:		2.60A (20°C T-Rise)	3.00A (20°C T-Rise)	
Bandwidth (GHz):		34.6GHz @ -1dB	31.3GHz @ -1dB	
Inductance (Ls):		0.95nH	1.00nH	

HOW TO ORDER				
Series	Category	Minimum Pitch	DUT Tip Style	HIB Tip Style
Z	1	030, 040, 050 or 080	B, J or L	J

BANDWIDTH

Z0-050 Super Short @ 0.5mm

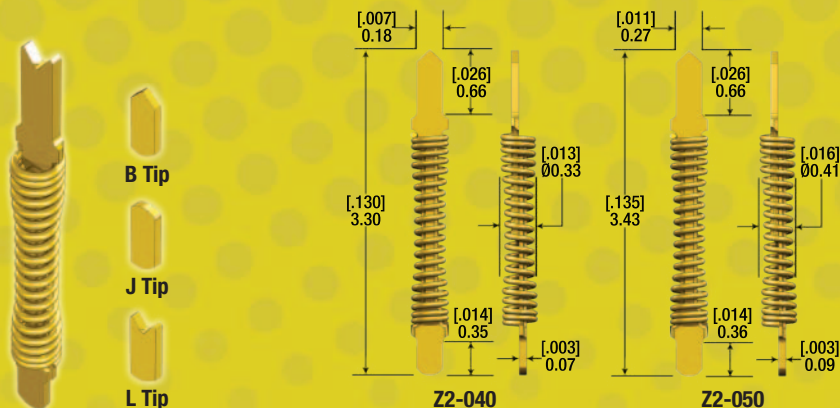


Markers S-12		Markers S-21	
GHz	dB	GHz	dB
1.0	0.00	1.0	0.01
2.0	-0.03	2.0	-0.01
3.0	-0.04	3.0	-0.04
4.0	-0.07	4.0	-0.06
40.00	-1.0	40.00	-1.0
40.00	-3.0	40.00	-3.0

	@ -1dB	@ -3dB
Z0-050	>40 GHz	>40 GHz
Z1-040	34.6 GHz	40.0 GHz
Z1-050	31.3 GHz	32.2 GHz
Z1-080	TBA	TBA

* Includes both DUT and board side travel
 ** Life specifications are based on lab results but are dependent on cleaning frequency and the specific customer application, including DUT materials, handler kit, maintenance, etc.
 *** Contact resistance will increase over time due to solder build-up and wear
 Specifications subject to change without notification

Z2 STANDARD PERFORMANCE SERIES FOR HVM, LOW COST-OF-TEST

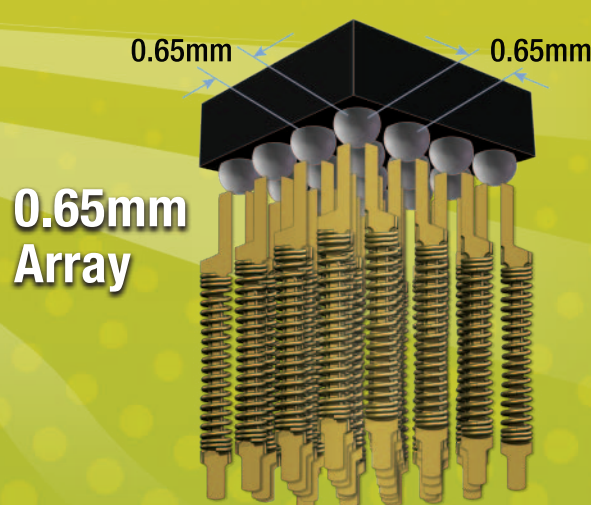
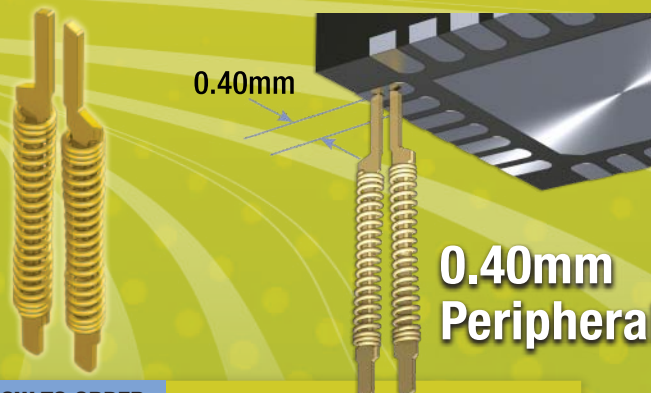


	Z2-030	Z2-040	Z2-050	Z2S-050	Z2-080	Z2S-080
Mechanical						
DUT Side Tip Material:	BeCu	BeCu	BeCu	Steel	BeCu	Steel
Pitch:	0.30mm	0.40mm	0.50/0.65mm		≥ .80mm	
Overall Length:	3.43mm (0.135")	3.31mm (0.130")	3.43mm (0.135")		4.37mm (0.172")	
Test Height:	2.67mm (0.105")	2.67mm (0.105")	2.79mm (0.110")		3.45mm (0.136")	
Maximum Travel*:	0.67mm (0.026")	0.64mm (0.025")	0.64mm (0.025")		0.92mm (0.036")	
Spring Force:	25g (0.88oz)	34g (1.20oz)	40g (1.40oz)		28g (0.98 oz)	
Mechanical Life**:	TBA	1000k Cycles	1000k Cycles	TBA	1000K Cycles	TBA
Electrical						
Average DC Resistance***:	Coming in Q4 2011	<70 mOhms	<70 mOhms	Coming in Q2 2011	<100mOhms	Coming in Q2 2011
Current Capacity		2.20A (20°C T-Rise)	2.80A (20°C T-Rise)		3.3A (20°C T-Rise)	
Bandwidth (GHz)		7.00GHz @ -1dB	8.10GHz @ -1dB		7.60GHz @ -1dB	
Inductance (Ls)		0.95nH	1.00nH		1.00nH	

HOW TO ORDER

Series	Category	DUT Tip Material	Minimum Pitch	DUT Tip Style	HIB Tip Style
Z	2	Blank = BeCu S = Steel	030, 040, 050 or 080	B, J or L	J

Z2 KELVIN FOR SUB 1-OHM RESISTANCE MEASUREMENTS



HOW TO ORDER

Series	Category	DUT Tip Material	Minimum Pitch	DUT Tip Style	HIB Tip Style
Z	2	Blank = BeCu S = Steel	040	K	J

** Includes both DUT and board side travel
 ** Life specifications are based on lab results but are dependent on cleaning frequency and the specific customer application, including DUT materials, handler kit, maintenance, etc.
 *** Contact resistance will increase over time due to solder build-up and wear
 Specifications subject to change without notification

Dedicated Solutions for Lead-Free Packages

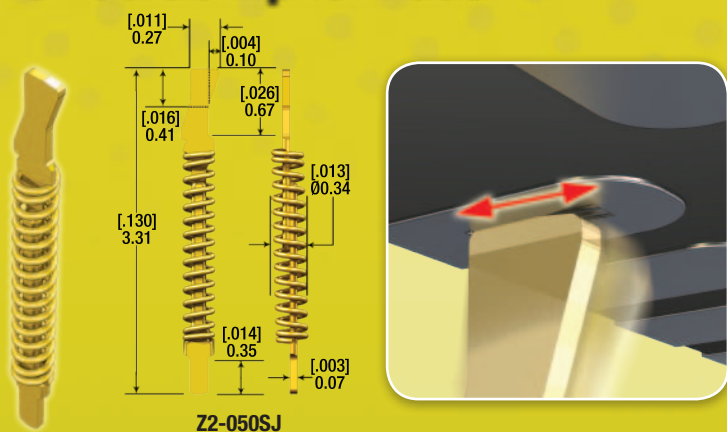
Whether your challenges are: • Solder Transfer from Matt Tin • Increasing Probe Tip Life
• Reduce Time Between Probe Cleaning • The Hardness of PdNiAu Plating
Our steel base material and scrub tips will give you the result that you want . . .

Lowering the Cost of Test!

Z2 SCRUB TO ELIMINATE SOLDER TRANSFER AND FREQUENT CLEANING

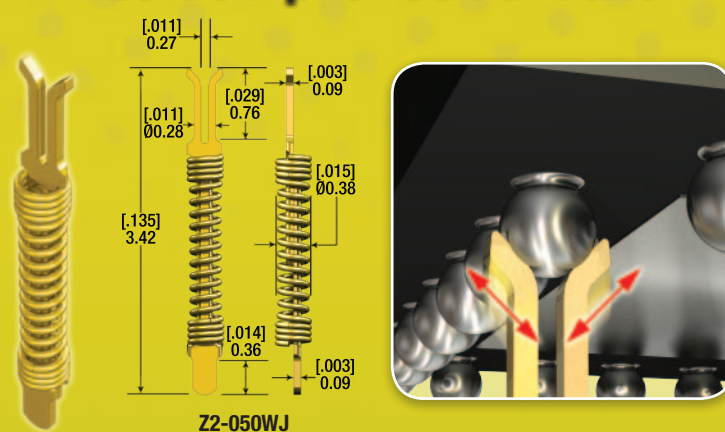
We provide positive "Scrub" action which doesn't damage your DUT or PCB pads!

"S" Scrub Tip for Pads



HOW TO ORDER						
Series	Category	DUT Tip Material	Minimum Pitch	DUT Tip Style	HIB Tip Style	Spring Force
Z	2	Blank = BeCu S = Steel	050	S	J	1

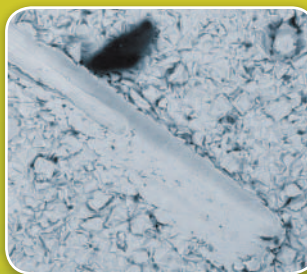
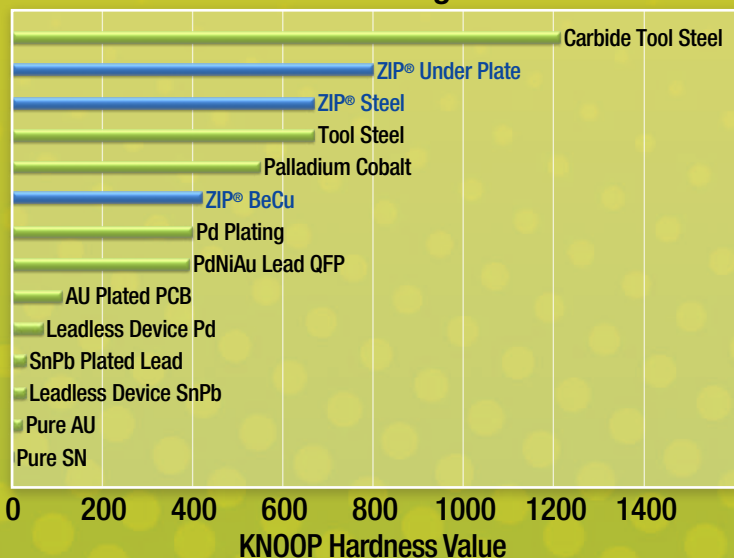
"W" Scrub Tip for Solder Balls



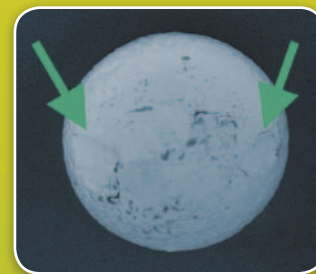
HOW TO ORDER					
Series	Category	DUT Tip Material	Minimum Pitch	DUT Tip Style	HIB Tip Style
Z	2	Blank = BeCu S = Steel	050	W	J

ZIP is Tougher Than What You Are Testing!

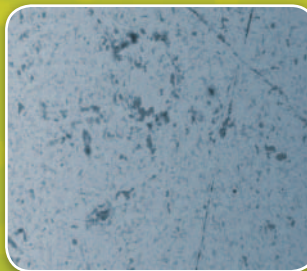
Common Materials And Plating Hardness



Single Cycle Scrub Marks on Pad at 800X



Scrub Marks on Solder Ball at 300X



HIB Pad after 500K Cycles at 500X



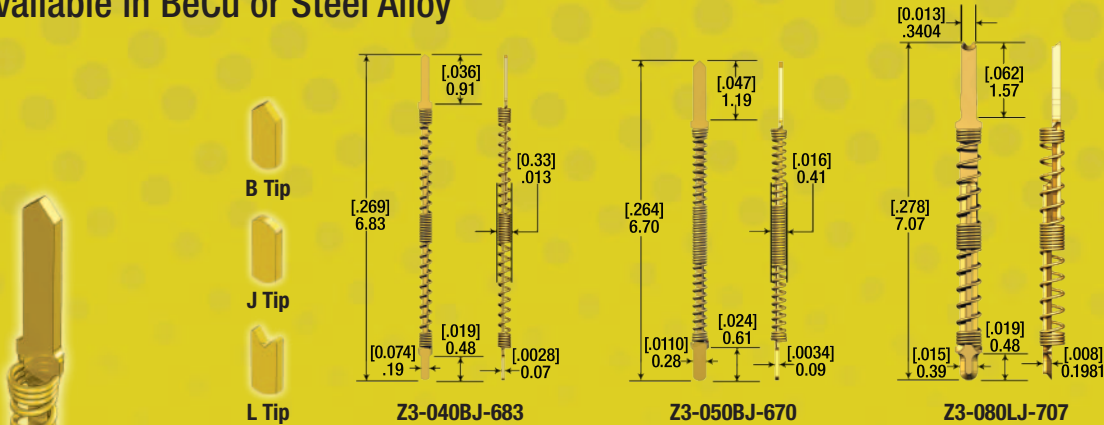
Socket after 500K Cycles at 300X

The Z3 Advantage

With MINIMAL TIME and COST, Z3 Long Travel Series can be supplied in different Overall Lengths (OAL)
 0.40mm pitch from 3.47mm to 6.83mm • 0.50mm pitch from 4.23mm to 6.70mm
 • 0.80mm pitch from 4.48mm to 7.07mm • Contact your local CPG Sales Representative for details!

Z3 STANDARD PERFORMANCE LONG TRAVEL SERIES FOR LARGE ARRAY AND STRIP TEST

Available in BeCu or Steel Alloy



	Z3-040	Z3-050	Z3S-050	Z3-080	Z3S-080
Mechanical					
DUT Side Tip Material:	BeCu	BeCu	Steel	BeCu	Steel
Pitch:	0.40mm	0.50/0.65mm		≥ .80mm	
Overall Length:	6.83mm (0.268")	6.70mm (0.263")		7.07mm (0.278")	
Test Height:	5.81mm (0.228")	5.48mm (0.215")		5.86 mm (0.23")	
Maximum Travel:*	1.02mm (0.04")	1.22mm (0.048")		1.21mm (0.047")	
Spring Force:****	40g (1.40oz)	40g (1.40oz)		40g (1.40oz)	
Mechanical Life:**	TBA	1000k Cycles		TBA	
Electrical					
Average DC Resistance***:	Coming in Q2 2011	<70mOhms	Coming in Q2 2011	Coming in Q2 2011	Coming in Q2 2011
Current Capacity		3.00A (20°C T-Rise)			
Bandwidth (GHz)		7.0GHz @ -1dB			
Inductance (Ls)		1.3nH			

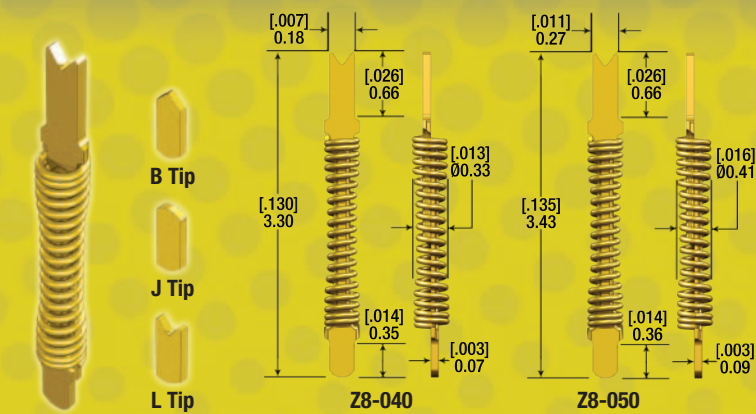
HOW TO ORDER					
Series	Category	DUT Tip Material	DUT Tip Style	HIB Tip Style	OAL
Z	3	Blank = BeCu	B, J or L	J	XXX
		S = Steel			

GENERAL ZIP CHARACTERISTICS FOR ALL ZIP PRODUCTS

		Z0	Z1	Z2	Z2-S	Z3	Z3-S	Z8
Materials and Finishes								
Contacts:	DUT Side	BeCu Alloy with Proprietary Plating	BeCu Alloy with Proprietary Plating	BeCu Alloy with Proprietary Plating	High Performance Steel Alloy with Proprietary Plating	BeCu Alloy with Proprietary Plating	High Performance Steel Alloy with Proprietary Plating	Copper Alloy with Proprietary Plating
	HIB Side	BeCu Alloy with Proprietary Plating	BeCu Alloy with Proprietary Plating	BeCu Alloy with Proprietary Plating	BeCu Alloy with Proprietary Plating	BeCu Alloy with Proprietary Plating	BeCu Alloy with Proprietary Plating	BeCu Alloy with Proprietary Plating
Spring:		Stainless Steel Alloy with Gold Plating	Stainless Steel Alloy with Gold Plating	Stainless Steel Alloy with Gold Plating	Stainless steel alloy with gold plating	Stainless Steel Alloy with Gold Plating	Stainless steel alloy with gold plating	Stainless Steel Alloy with Gold Plating
Environmental								
Operating Temperature		-55°C to +155°C	-55°C to +155°C	-55°C to +155°C	-55°C to +155°C	-55°C to +155°C	-55°C to +155°C	-55°C to +155°C

* Includes both DUT and board side travel
 ** Life specifications are based on lab results but are dependent on cleaning frequency and the specific customer application, including DUT materials, handler kit, maintenance, etc.
 *** Contact resistance will increase over time due to solder build-up and wear
 Specifications subject to change without notification

Z8 “BURN-IN” PRICE POINT REPLACEABLE COMPLIANT PIN



	Z8-040	Z8-050	Z8-080
Mechanical			
Pitch:	0.40mm	0.50/0.65mm	.80mm
Overall Length:	3.31mm (0.130")	3.43mm (0.135")	4.37mm (0.172")
Test Height:	2.7mm (0.106")	2.79mm (0.110")	3.45mm (0.136")
Maximum Travel:*	0.64mm (0.025")	0.64mm (0.025")	0.92mm (0.036")
Spring Force:	34g (1.20oz)	40g (1.40oz)	28g (0.98 oz)
Mechanical Life:**	10K	10K	10K
Electrical			
Average DC Resistance:***	<100mOhms	<100mOhms	<100mOhms
Current Capacity:	3.00A (20°C T-Rise)	3.00A (20°C T-Rise)	3.00A (20°C T-Rise)
Bandwidth (GHz):	4.50GHz @ -1dB	4.50GHz @ -1dB	4.50GHz @ -1dB
Inductance (Ls):	0.95nH	1.00nH	1.00nH

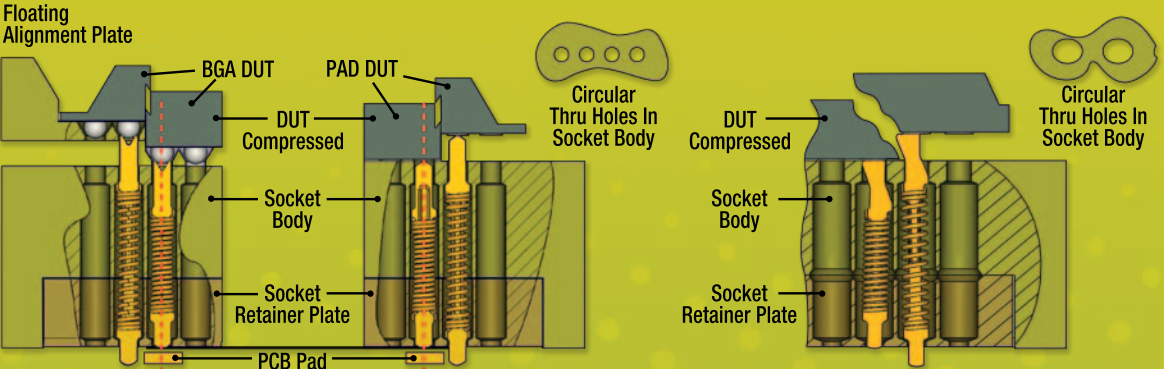
HOW TO ORDER				
Series	Category	Minimum Pitch	DUT Tip Style	HIB Tip Style
Z	8	040, 050 or 080	B, J or L	J

* Includes both DUT and board side travel
** Life specifications are based on lab results but are dependent on cleaning frequency and the specific customer application, including DUT materials, handler kit, maintenance, etc.
*** Contact resistance will increase over time due to solder build-up and wear
Specifications subject to change without notification

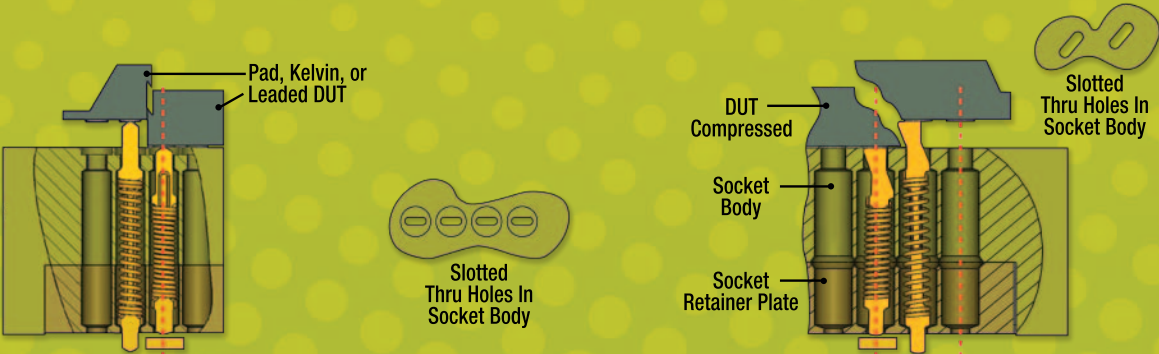
Socket Design Considerations

Whether your application is: • Solder ball, pad or lead • Array or peripheral access • 0.3mm, 0.4mm, 0.5mm, 0.8mm pitch • Standard single point contact • Kelvin or Scrub
Your ECT CPG Authorized Contactor Partner has a solution for you!

Standard Accuracy (Circular Guide Plate)



High Accuracy (Slotted Guide Plate)



Call us and learn what **ZIP®** can do for you!

WHAT THEY'RE SAYING ABOUT ZIP®...

"One Year ago, I was still very uneasy about this new interconnect, and its performance. However, after testing over 18 million devices with ZIP, I now realize that this is the "go-to" interconnect for challenging new designs for years to come."

RF Test Manager, Leading Broadband Device Manufacturer

"The ZIP Z8-050 pin by ECT has allowed us to be competitive in a niche market requiring fast-turn, custom machined sockets capable of burn-in temp ranges at a reasonable price and in high volumes."
Market leader in the medical device burn-in, production environment; utilizing an ECT Interconnect.

Sales Manager, Test Socket Integrator-Total Solutions Provider

"With its low profile, high-speed performance, and low cost, the ZIP pin by ECT has allowed us to expand into new market segments."

Business Development Manager, ATE Test Contactor Integrator

"In developing a socket solution, we felt the pin would resolve oxide build-up issues to the point that we guaranteed its success; if it didn't work then we would buy them back! This part is now moving into high volume and they will want many more of these sockets customized for their auto handler."
A leading power amplifier device manufacturer using a heavily oxidized titanium finish causing build-up has solved their intermittent contact reliability issue with ECT's ZIP SCRUB Technology.

Sales Manager, Test Socket Integrator-Total Solutions Provider

Contact your CPG Sales Representative for a list of the nearest CPG approved Contactor Suppliers!

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Everett Charles Technologies

A DOVER COMPANY

ECT & OB Test probes zijn verkrijgbaar in de Benelux via Romex BV, Remmerden 5, 3911 TZ, Rhenen, NL.
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