

Zero Footprint SMT Spring Pin Sockets

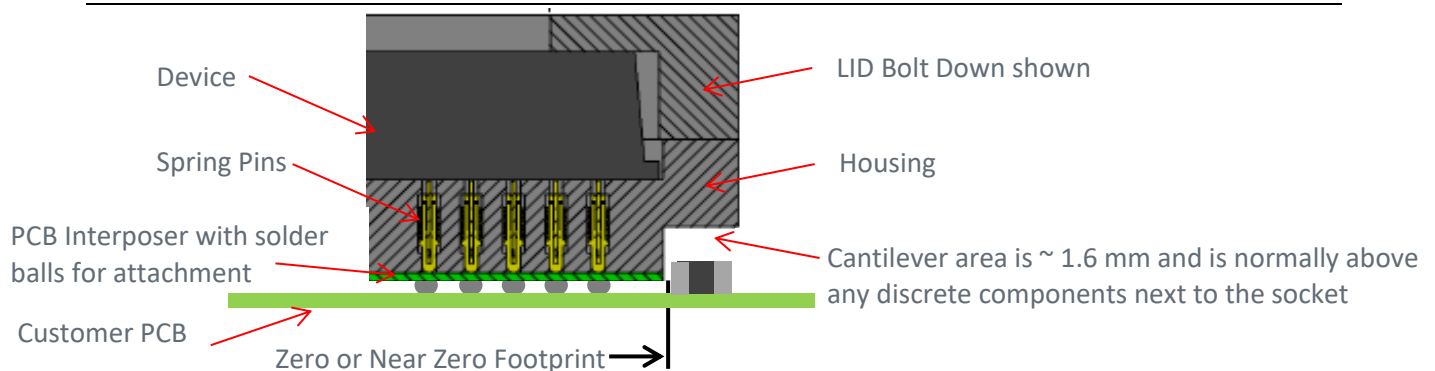
High Performance Zero Footprint Sockets for 0.35 + pitch devices.
Industry Standard Spring Pins in a Zero Footprint configuration

Ironwood Electronics Zero footprint (ZFP) sockets is a device size or near device size footprint test socket incorporating industry standard high performance spring pins. Ironwood can design a socket to work with any type IC packages; BGA- LGA - QFN- DFN and even leaded devices where you need to fit a socket in place of your device to allow fast, easy testing and development.

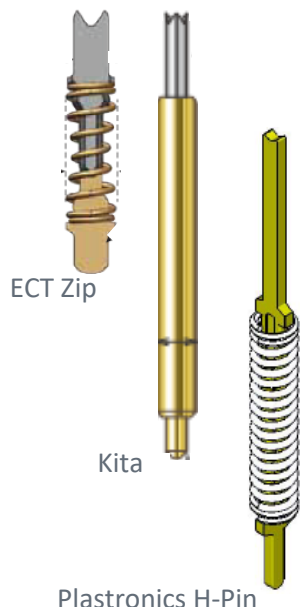
FEATURES AND BENEFITS

Near Zero PCB footprint	The socket footprint is only 1 mm larger (0.5 mm per side) than the device for Near Zero Configurations. Typically this footprint will fit into any end application allowing the Spring Pin socket to be directly reflowed into the same location as the device. Depending on the ball configuration (BGA only) some designs can be made to a true Zero Foot Print.
Industry Standard Spring Pins	Ironwood Electronics has partnered with several Spring Pin manufactures so we can provide designs based on mechanical and electrical requirements, and cost points.
Lid Options	The Bolt Down Lid (standard) is a simple way to push the device into the socket. Optional Sliding Lid or ½ turn Lid is also available for higher insertion applications.
Excellent signal performance	Depending on the electrical performance needed, the ZFP SMT Spring Pin sockets can be designed using the best type pin required for your electrical requirements.

METHODOLOGY



CONTACT – Spring Pin Construction – Relative Cost



Manufacture	Relative Cost	Pin Length @ Test Height (mm)
ECT – Z0 “ Zip pin”	\$\$\$\$	1.5
ECT – Z “ Zip Pin	\$\$\$	2.7
Kita – Standard Pitch	\$\$	2.7-2.8
Plastronics – “H-Pin”	\$	2.5-3.0
Other	S-SSSS	

The above list is Spring Pins we have designed into our sockets- any spring pin you are familiar with can also be designed into an Ironwood zero footprint (ZFP) SMT socket

ELECTRICAL / MECHANICAL SPECIFICATIONS - COMPARISON

Examples below for various manufacture’s Spring Pin for 0.4 pitch applications
 Specifications are the Listed manufacture’s published data
 Contact Ironwood for additional specifications, RF simulation and model reports, HFSS and S parameter files when available.

	ECT Z0-040	Kita KWH040	Plastronics H033
Loop inductance	0.50 nH	0.87 nH	0.80 nH
Current Carrying Capacity	2.5A	1.4A	1.8A
Capacitance	0.03 pF	N/D	0.067 pF
CRES	<70 mΩ	<100 mΩ	<50 mΩ
S21 Insertion loss (-1 dB) Field	>30 GHz	20.2 GHz	10.0 GH
Operating Temperature	-55C to +155C	-40C to +120C	-55C to +180C
Mechanical Life	500,000	300,000	50,000
Insertion Force @ Test Height	19g	22 g	14.3 g

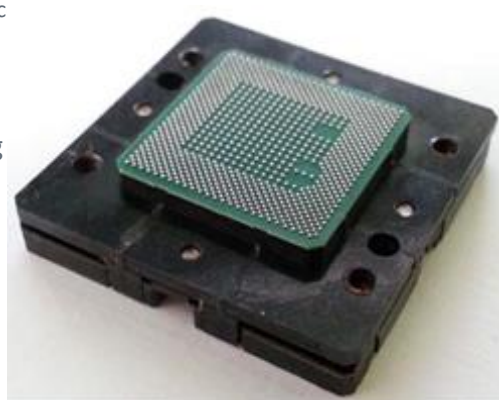
MATERIAL SPECIFICATIONS

Spring Pin (DUT end)	Homogenous	Copper alloy (Cu)	Copper alloy (Cu)
Spring Pin (PCB end)	Copper alloy (Cu)	Copper alloy (Cu)	Copper alloy (Cu)
Plating	n/a DUT - Au PCB	Au	Au
Housing	Ironwood Laminated Design using Polyimide (Cirlex®)		

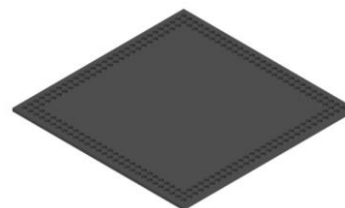
SOCKET CONFIGURATIONS/ OPTIONS

The BGA designed sockets are typically supplied with SAC 305 or Eutectic Solder balls to allow socket attachment using the same methods and processes used to reflow your BGA device. For QFN and other pad type applications, the pads replicate your device pads and are attached using the same process used to attach your device

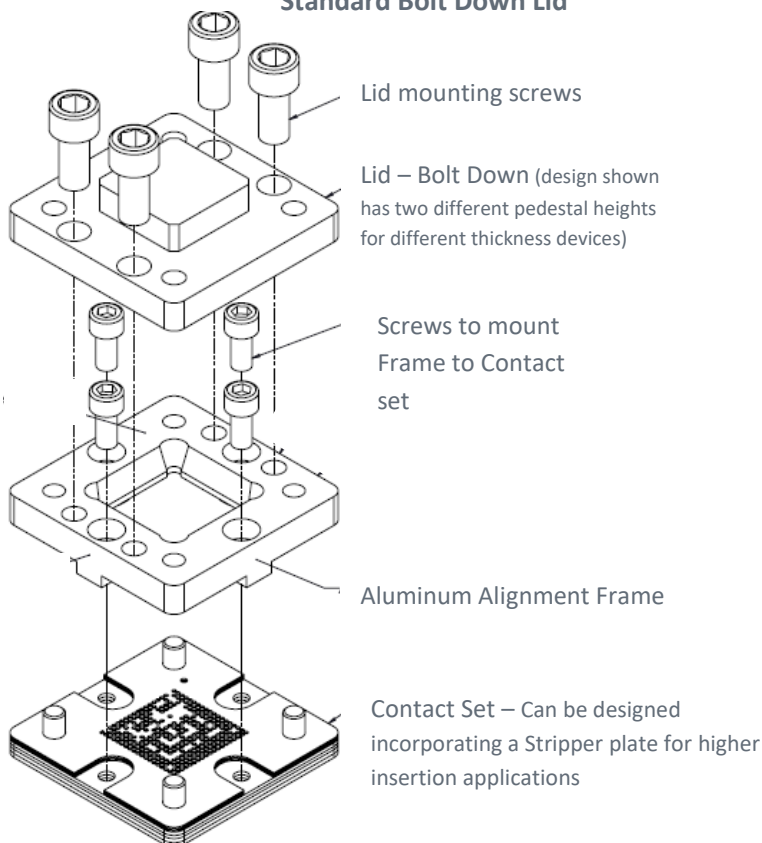
BGA Socket with solder balls
Bottom Pedestal (Device Size Footprint)
Cantilever area to allow cover mounting



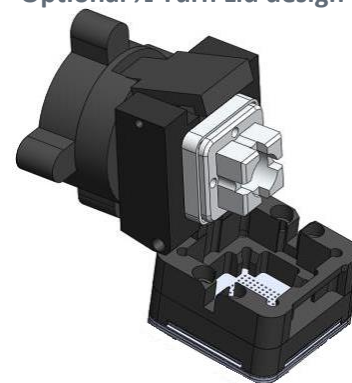
Stencils available for applying solder paste for sockets that do not have solder balls attached



Standard Bolt Down Lid



Optional ½ Turn Lid design



Optional Sliding Lid design

