

# Zero Profile Solderless Sockets on Reel **Holtite® Series**



322-HCS5P2-100

## HOLTITE® SIP PATTERN REELS

Part Number	Contact Plating	Number of Contacts per Pattern	Contact Style	Part Number	Contact Plating	Number of Contacts per Pattern	Contact Style
322-HCS5P2-100	Gold	2500 Contacts per Reel	5P2	322-HCS8P2-100	Gold	2500 Contacts per Reel	8P2
322-HCS5P3-100	Tin/Lead		5P3	322-HCS8P3-100	Tin/Lead		8P3
322-HCS6P2-100	Gold		6P2	322-HCS14P2-100*	Gold		14P2
322-HCS6P3-100	Tin/Lead		6P3	322-HCS14P3-100*	Tin/Lead		14P3



322-HCS5P2-314

## HOLTITE® DIP PATTERN REELS

Part Number	Contact Plating	Number of Contacts per Pattern	Number of Patterns per Reel	Row Spacing	Contact Style	Contacts per Reel
322-HCS5P2-300	Gold	Universal on .100"	—	.300"	5P Series	5000
322-HCS5P3-300	Tin/Lead					
322-HCS5P2-308	Gold	8 Positions on .100"	625			
322-HCS5P3-308	Tin/Lead					
322-HCS5P2-314	Gold	14 Positions on .100"	357			
322-HCS5P3-314	Tin/Lead					
322-HCS5P2-316	Gold	16 Positions on .100"	313			
322-HCS5P3-316	Tin/Lead					
322-HCS5P2-318	Gold	18 Positions on .100"	278			
322-HCS5P3-318	Tin/Lead					
322-HCS5P2-320	Gold	20 Positions on .100"	250			
322-HCS5P3-320	Tin/Lead					
322-HCS5P2-400	Gold	Universal on .100"	—	.400"	5P Series	5000
322-HCS5P3-400	Tin/Lead					
322-HCS5P2-422	Gold	22 Positions on .100"	227			
322-HCS5P3-422	Tin/Lead					
322-HCS5P2-424	Gold	24 Positions on .100"	208			
322-HCS5P3-424	Tin/Lead					
322-HCS5P2-600	Gold	Universal on .100"	—	.600"	5P Series	5000
322-HCS5P3-600	Tin/Lead					
322-HCS5P2-624	Gold	24 Positions on .100"	208			
322-HCS5P3-624	Tin/Lead					
322-HCS5P2-628	Gold	28 Positions on .100"	179			
322-HCS5P3-628	Tin/Lead					
322-HCS5P2-632	Gold	32 Positions on .100"	156			
322-HCS5P3-632	Tin/Lead					
322-HCS5P2-636	Gold	36 Positions on .100"	139			
322-HCS5P3-636	Tin/Lead					
322-HCS5P2-640	Gold	40 Positions on .100"	125			
322-HCS5P3-640	Tin/Lead					

Application notes and tooling information appear on page E10 & E11.

### Need more technical information?

Contact your local ABE office or  
<http://www.AboveBoardElectronics.com>

# Holtite® Application Notes

## OVERVIEW

The Augat Holtite contact is a solderless, zero-profile contact designed to be contained within the barrel of a plated-thru hole.

The unique design allows the contact and the plated-thru hole to form a zero-profile component socket which provides both the normal forces and the low contact resistance required to mechanically retain and electrically interconnect a broad range of electronic parts and components.

The outer shape of the Holtite contact allows the plated-thru hole to elastically conform during insertion. The precision machined geometry allows for the controlled deformation of plated material without damaging the plated-thru hole or affecting the normal electrical and mechanical contact performance.

## MATERIALS AND DESIGN

Holtite contacts are precision machined from double-drawn solid beryllium-copper wire, and then heat treated. Beryllium copper is used because of its spring properties after heat treating. The copper affords excellent conductivity, while the beryllium lends hardness and durability to the finished contact.

The Holtite contact has been machined as a seamless heat treated part, which gives it more uniform and repeatable spring properties than those of a stamped contact used in an identical through hole diameter. This uniformity of normal forces minimizes variations in contact resistance and ensures the proper insertion/withdrawal forces on mating parts.

The Holtite contact has been designed to provide a solderless gas tight electrical connection with mating parts. The angled contact opening greatly facilitates lead entry (especially important when automatically inserting IC's), and reduces the possibility of lead or plating damage. Two locking collars provide contact retention through a controlled elastic deformation, and a machined groove between the collars provides a relief for the compressive radial forces of the plated-thru hole plating material. Concentration of the forces and elastic deformation in this manner locks the contact in place.

A transition region below the lower collar serves as a relief area for any plastic deformation of plating material that may occur as the contact is inserted into the plated-thru hole. This relief ensures the consistency of contact normal forces over slight variations in hole size, because plated-thru hole walls (under prescribed plating tolerances) will not come into contact with the beam of the Holtite fingers.

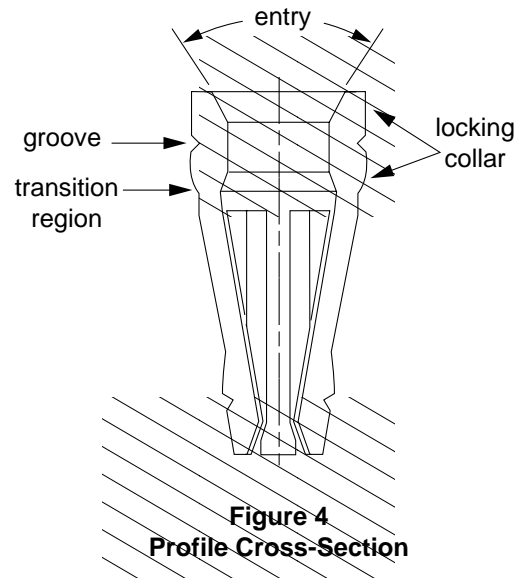


Figure 4  
Profile Cross-Section

## HOLE REQUIREMENTS

The fingers of 5P series Holtite contacts will protrude out of circuit boards that are less than 3/32" (2,38 mm) thick. Care in board handling should be exercised in this case to prevent damage to the exposed contact fingers. This is not a concern in board thicknesses of 3/32" or greater because the contact fingers are entirely contained within the plated-thru hole.

The press fit technology used for installing Holtite contacts is directly dependent on the hole size tolerance. The tolerances of the primary and finished hole sizes in a printed circuit board must be sufficiently narrow to ensure adequate compressive stress between the hole walls and the locking collars of the contact.

The primary (drilled) hole size is a very important dimension. Finished hole tolerances should NOT be maintained by drilling over-sized holes and then plating down to the correct size, because copper and tin/lead alone will not create the compressive forces necessary to retain the Holtite contact over time and temperature ranges. Drilling undersized holes, on the other hand, may introduce problems such as excessive contact insertion forces, board warpage and crazing around the hole. Holes should be drilled from the component insertion side of the board, whenever possible, to avoid creating drill-exit burrs on the press-fit portion of the thru-hole.