

# PIN GRID ARRAY SOCKETS

MPAS, MVAS, MHAS, MSAS

Mates with:  
MPAT, MVAT, MHAT, MSAT

## SPECIFICATIONS

For complete specifications see [www.samtec.com?MPAS](http://www.samtec.com?MPAS) or [www.samtec.com?MVAS](http://www.samtec.com?MVAS)

**MPAS, MVAS**  
Insulator Material:  
Black G.F. Polyester



**Contact:** BeCu  
**Shell:** Brass except Style K Phosphor Bronze  
**Operating Temp Range:**  
-55°C to +105°C with Tin  
-55°C to +125°C with Gold  
**Plating:** Au over 50µ" (1,27µm)  
Ni or Sn over 100µ" (2,58µm)  
Cu or 50µ" (1,27µm) Ni  
**Current Rating:** 1A  
**Contact Resistance:**  
10mΩ max

**Lead Size Range:**  
.015" (0,38mm) to .022" (0,56mm) DIA except  
Style ZL = .015" (0,38mm) to .020" (0,51mm) DIA;  
ZM = .016" (0,41mm) to .021" (0,53mm) DIA;  
ZN = .016" (0,41mm) to .020" (0,51mm) DIA

**Insertion Force:**  
(Single contact only) Style ZU = 1.5oz (0,42N) max, all others = 2.5 oz (0,69N) avg, 5.5 oz (1,53N) max, except Styles J & K = 9 oz (2,50N) avg, 16 oz (4,45N) max

**Withdrawal Force:**  
(Single contact only) Style ZU = 1.5oz (0,42N) max, all others = 2.0 oz (0,56N) avg, 0.35 oz (0,97N) min, except Styles J & K = 2.5 oz (0,69N) avg, 1.5 oz (0,42N) min

**Lead-Free Solderable:**  
Wave, only

BODY STYLE	PIN COUNT	LEAD STYLE	PLATING OPTION	PIN OUT CODE	OPTION
<p><b>MPAS</b> = Standard Polyester</p> <p><b>MVAS</b> = Open Body Polyester</p> <p><b>MSAS</b> = Hi-Temp LCP Open Body</p>	<p>— "XXX"</p> <p>= Total Number of Filled Positions</p>	<p><b>GG</b> = 30µ" (0,76µm) Gold Contact, 10µ" (0,25µm) Gold Shell</p> <p><b>GT</b> = 30µ" (0,76µm) Gold Contact, Tin Shell</p> <p><b>TT</b> = Tin Contact and Shell (Styles -ZS &amp; ZW Only)</p> <p><b>ST</b> = 10µ" (5,08µm) Gold Contact, Tin Shell (Style -ZS only)</p>	<p><b>-2</b> = (9,14).360 Wire-Wrap (-ZW Only)</p> <p><b>-3</b> = (6,60).260 Wire-Wrap (-ZW Only)</p> <p><b>-L</b> = Locking Socket (-ZS Only)</p>	<p>Diagram showing pin grid layout with dimensions: No. of Positions X .100 (2,54) SQ</p>	<p><b>Diagram showing pin grid layout with dimensions: No. of Positions X .100 (2,54) SQ</b></p> <p><b>Diagram showing pin grid layout with dimensions: No. of Positions X .100 (2,54) SQ</b></p>
<p><b>MHAS</b> = Low Profile</p>	<p><b>Diagram showing pin grid layout with dimensions: No. of Positions X .100 (2,54) SQ</b></p>	<p><b>Diagram showing pin grid layout with dimensions: No. of Positions X .100 (2,54) SQ</b></p>	<p><b>Diagram showing pin grid layout with dimensions: No. of Positions X .100 (2,54) SQ</b></p>	<p><b>Diagram showing pin grid layout with dimensions: No. of Positions X .100 (2,54) SQ</b></p>	<p><b>Diagram showing pin grid layout with dimensions: No. of Positions X .100 (2,54) SQ</b></p>

**ALSO AVAILABLE**  
RoHS compliant options. Call Samtec.

*New! Ultra-LIF*  
1.5oz (0,42N) Max Insertion Force  
45g (0,44N) Normal Force  
Specify Style -ZU

**Note:** Some sizes, styles and options are non-standard, non-returnable.

## SPECIFICATIONS

For complete specifications see [www.samtec.com?MHAS](http://www.samtec.com?MHAS)

**MHAS**  
Same as MPAS except:  
**Insulator Material:**  
Black High Temp. Plastic



-ZS, -ZU, -ZA, -J, -K = Printed Circuit	-ZW = Wire-Wrap	-ZE or -ZH = Elevated																																			
<p>Locking lead (-L) available. See OPTION.</p> <p>Diagram showing lead dimensions: (0,76) .030, (1,32) .052 DIA, Z, X, Y</p> <table border="1"> <thead> <tr> <th>LEAD STYLE</th> <th>X DIA</th> <th>Y TAIL</th> <th>Z OAL</th> </tr> </thead> <tbody> <tr> <td>-ZS, -ZU</td> <td>(0,51) .020</td> <td>(3,18) .125</td> <td>(7,62) .300</td> </tr> <tr> <td>-ZA</td> <td>(0,51) .020</td> <td>(4,57) .180</td> <td>(8,89) .350</td> </tr> <tr> <td>-J</td> <td>(0,64) .025</td> <td>(10,41) .410</td> <td>(15,24) .600</td> </tr> <tr> <td>-K</td> <td>(0,89) .035</td> <td>(12,95) .510</td> <td>(17,86) .703</td> </tr> </tbody> </table> <p>Insertion Depth = .095" to .145", Style ZS Component Part No. = EZ-1P1, Style ZA Component Part No. = EZ-6P1, Option L Component Part No. = SC-1L1 or EZ-1L1, Insertion Depth = .095" to .138", Style J Component Part No. = SC-1P3, Insertion Depth = .095" to .157", Style K Component Part No. = SC-2P1</p>	LEAD STYLE	X DIA	Y TAIL	Z OAL	-ZS, -ZU	(0,51) .020	(3,18) .125	(7,62) .300	-ZA	(0,51) .020	(4,57) .180	(8,89) .350	-J	(0,64) .025	(10,41) .410	(15,24) .600	-K	(0,89) .035	(12,95) .510	(17,86) .703	<p>MHAS NOT AVAILABLE Shorter w/w tail lengths available. See OPTION.</p> <p>Diagram showing lead dimensions: (4,90) .052 .193 DIA, (0,76) .030, (12,95) .510, (0,64) .025 SQ, Insertion Depth = .125" to .157", Style ZW Component Part No. = EZ-1W(1), Style ZW-2 Component Part No. = EZ-1W(1)(2), Style ZW-3 Component Part No. = EZ-1W(1)(3)</p>	<p>MHAS NOT AVAILABLE</p> <p>Diagram showing lead dimensions: (0,76) .030, (1,32) .052 DIA, (0,89) .035 DIA, Z, X, Y, W</p> <table border="1"> <thead> <tr> <th>LEAD STYLE</th> <th>X DIA</th> <th>W TAIL</th> <th>Y</th> <th>Z OAL</th> </tr> </thead> <tbody> <tr> <td>-ZE</td> <td>(0,51) .020</td> <td>(4,32) .170</td> <td>(8,86) .349</td> <td>(13,77) .542</td> </tr> <tr> <td>-ZH</td> <td>(0,46) .018</td> <td>(3,81) .150</td> <td>(12,95) .510</td> <td>(17,86) .703</td> </tr> </tbody> </table> <p>Insertion Depth = .125" to .170", Style ZE Component Part No. = EZ-2P3, Insertion Depth = .125" to .145", Style ZH Component Part No. = EZ-2P2</p>	LEAD STYLE	X DIA	W TAIL	Y	Z OAL	-ZE	(0,51) .020	(4,32) .170	(8,86) .349	(13,77) .542	-ZH	(0,46) .018	(3,81) .150	(12,95) .510	(17,86) .703
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## SPECIFICATIONS

For complete specifications see [www.samtec.com?MSAS](http://www.samtec.com?MSAS)

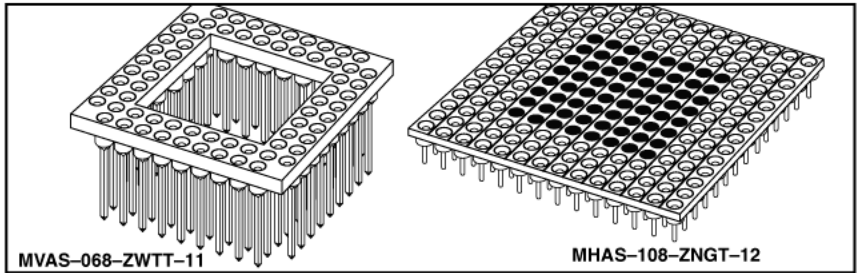
**MSAS**  
Same as MPAS except:  
**Insulator Material:**  
Black Liquid Crystal Polymer  
**Max Processing Temp:**  
230°C for 30 to 60 seconds



-ZL = Low Profile	-ZM = Low Profile	-ZN or ZC = Micro Socket	-ZP = Short Tail															
<p>Diagram showing lead dimensions: (0,76) .030, (1,32) .052 DIA, (0,76) .030 DIA, (3,10) .122, (5,33) .230 ±.010 (0,25), Insertion Depth = .105" to .170", Component No. = EZ-3P1</p>	<p>MHAS &amp; CHAS SERIES ONLY.</p> <p>Diagram showing lead dimensions: (0,51) .020, (1,32) .052 DIA, (0,51) .020 DIA, (3,35) .132, (6,10) .240 ±.010 (0,25), Insertion Depth = .080" to .105", Component No. = EZ-4P1</p>	<p>MHAS &amp; CHAS SERIES ONLY.</p> <table border="1"> <thead> <tr> <th>LEAD STYLE</th> <th>X DIA</th> <th>W HEAD</th> <th>Y</th> <th>Z OAL</th> </tr> </thead> <tbody> <tr> <td>-ZN</td> <td>(0,76) .030</td> <td>(0,51) .020</td> <td>(2,41) .095</td> <td>(4,83) .190</td> </tr> <tr> <td>-ZC</td> <td>(0,74) .029</td> <td>(0,25) .010</td> <td>(2,11) .083</td> <td>(4,19) .165</td> </tr> </tbody> </table> <p>ZN Insertion Depth = .080" to .150", ZN Component No. = EZ-5P1, ZC Insertion Depth = .080" to .140", ZC Component No. = EZ-6P1</p>	LEAD STYLE	X DIA	W HEAD	Y	Z OAL	-ZN	(0,76) .030	(0,51) .020	(2,41) .095	(4,83) .190	-ZC	(0,74) .029	(0,25) .010	(2,11) .083	(4,19) .165	<p>Diagram showing lead dimensions: (0,76) .030, (1,32) .052 DIA, (0,51) .020 DIA, (5,08) .200, ZP Insertion Depth = .125" to .145", ZP Component No. = EZ-1M1</p>
LEAD STYLE	X DIA	W HEAD	Y	Z OAL														
-ZN	(0,76) .030	(0,51) .020	(2,41) .095	(4,83) .190														
-ZC	(0,74) .029	(0,25) .010	(2,11) .083	(4,19) .165														

Due to technical progress, all designs, specifications and components are subject to change without notice.

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**MORE STANDARD PIN-OUTS AVAILABLE.  
CALL SAMTEC.**

<p><b>-21=273 Pins</b></p> <p>MSAS only.</p>	<p><b>-18=191 Pins</b></p> <p>MSAS only.</p>	<p><b>-18=179 Pins</b></p> <p>MSAS only.</p>	<p><b>-17=240 Pins</b></p> <p>MVAS &amp; MSAS not available.</p>	<p><b>-17=209 Pins</b></p> <p>MSAS not available.</p>
<p><b>-17=169 Pins</b></p> <p>MSAS only.</p>	<p><b>-17=168 Pins</b></p> <p>MSAS only.</p>	<p><b>-16=172 Pins</b></p> <p>MVAS &amp; MSAS not available.</p>	<p><b>-16=156 Pins</b></p> <p>MSAS only.</p>	<p><b>-15=181 Pins</b></p> <p>MVAS not available.</p>
<p><b>-15=176 Pins</b></p> <p>MSAS not available.</p>	<p><b>-15B=149 Pins</b></p> <p>MVAS &amp; MSAS not available.</p>	<p><b>-15=145 Pins</b></p> <p>MVAS not available.</p>	<p><b>-14=132 Pins</b></p> <p>MVAS &amp; MSAS not available.</p>	<p><b>-13A=133 Pins</b></p> <p>MVAS &amp; MSAS not available.</p>
<p><b>-13B=132 Pins</b></p> <p>MVAS &amp; MSAS not available.</p>	<p><b>-13A=124 Pins</b></p> <p>MVAS &amp; MSAS not available.</p>	<p><b>-13A=121 Pins</b></p> <p>MSAS not available.</p>	<p><b>-13=114 Pins</b></p> <p>MVAS &amp; MSAS not available.</p>	<p><b>-13=101 Pins</b></p> <p>MVAS &amp; MSAS not available.</p>
<p><b>-11=085 Pins</b></p> <p>MVAS &amp; MSAS not available.</p>	<p><b>-11C=084 Pins</b></p> <p>MSAS not available.</p>	<p><b>-11=069 Pins</b></p> <p>MSAS not available.</p>	<p><b>-11=068 Pins</b></p> <p>MVAS &amp; MSAS not available.</p>	<p><b>-10=084 Pins</b></p> <p>MVAS &amp; MSAS not available.</p>
<p><b>-10=068 Pins</b></p> <p>MSAS not available.</p>				

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