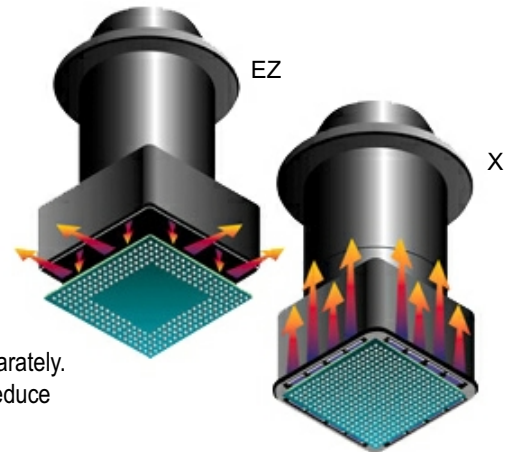


**Nozzle Data Sheet for:**

# Super Ball Grid Arrays

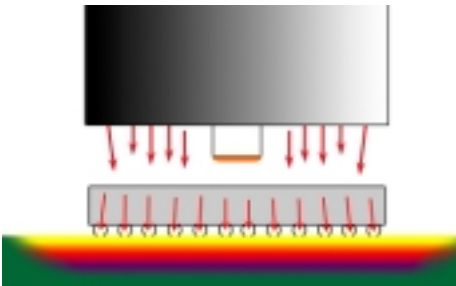


Component Identification: SBGA, ESBGA  
 Nozzle Designation: EZ, X  
 Heating Methodology: Heat Through

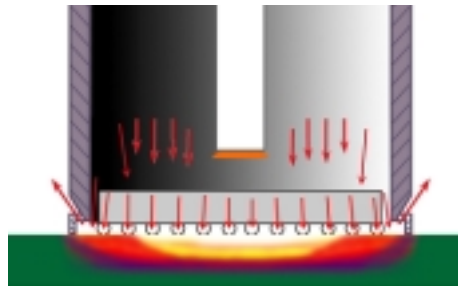


- SBGAs listed utilize eutectic solder for the formation of the sphere. ESBGA: E = "enhanced".
- EZ nozzles require zero adjacent clearance. EZ nozzles do not include a component insertion tool as they are not package specific. Component insertion tools can be ordered separately.
- X nozzles require .100" adjacent clearance. X nozzles include a component insertion tool to reduce handling and simplify insertion of the component into the nozzle.

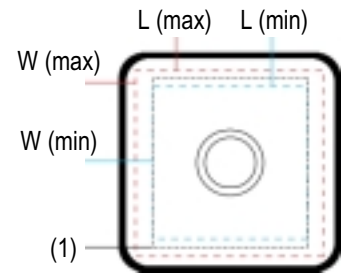
**EZ Nozzle Heat Flow**



**X Nozzle Heat Flow**



**EZ Nozzle Sizing**



(1) - rectangular components within min-max size.

<b>EZ Nozzle #</b>	<b>Part Size (mm)</b>	<b>X Nozzle #</b>	<b>Part Size (mm)</b>	<b>Industry Reference</b>
N15EZ15	13 sq - 15.5 sq	NA525X525	13.1 sq x 1.51 H	SBGA-36/64 Amkor
	13 sq - 15.5 sq	NA604X604	15.1 sq x 1.51 H	SBGA-40/72
N21EZ21-1	19 sq - 21.5 sq	NA762X762	19.1 sq x 1.51 H	SBGA-52/96/132 Amkor
N25EZ25	21 sq - 25.5 sq	NA919X919	23.1 sq x 1.51 H	SBGA-64/120/168
	21 sq - 25.5 sq	NA998X998	25.1 sq x 1.51 H	SBGA-136/192 Amkor
	21 sq - 25.5 sq	NA998X998	25.1 sq x 1.58 H	ESBGA-136/192/240 Amkor
N27EZ27	25 sq - 27.5 sq	NA1081X1081D	27.2 sq x 1.51 H	SBGA-144/204 Amkor
	25 sq - 27.5 sq	NA108X1081D	27.2 sq x 1.58 H	ESBGA-144/204/256 Amkor
N31EZ31EB	27 sq - 31.5 sq	NA1238X1238D	31.2 sq x 1.51 H	SBGA-168/240
	27 sq - 31.5 sq	NA1159X1159	29.1 sq x 1.58 H	ESBGA-152/216/272
	27 sq - 31.5 sq	NA1238X1238D	31.2 sq x 1.58 H	ESBGA-168/240/304
N35EZ35EB	31 sq - 35.5 sq	NA1397X1397	35.2 sq x 1.51 H	SBGA-192/276/356 Amkor, 416 ProLinx
	31 sq - 35.5 sq	NA1397X1397	35.2 sq x 1.58 H	ESBGA-192/276/352 Amkor/Intel960
N40EZ40EB	35 sq - 40.5 sq	NA1490X1490	37.6 sq x 1.51 H	SBGA-312
	35 sq - 40.5 sq	NA1589X1589	40.1 sq x 1.51 H	SBGA-336
	35 sq - 40.5 sq	NA1490X1490	37.6 sq x 1.58 H	ESBGA-312/400/480
	35 sq - 40.5 sq	NA1589X1589	40.1 sq x 1.58 H	ESBGA-336/432/520 Amkor
N44EZ44EB	40 sq - 44.5 sq	NA1685X1685	42.6 sq x 1.51 H	SBGA-360 Amkor
	40 sq - 44.5 sq	NA1685X1685	42.6 sq x 1.58 H	ESBGA-360/464/560 Amkor
N46EZ46EB	44 sq - 46.5 sq	NA1786X1786	45.1 sq x 1.51 H	SBGA-384 Amkor
	44 sq - 46.5 sq	NA1786X1786	45.1 sq x 1.58 H	ESBGA-384/496/600 Amkor
N48EZ48EB	46 sq - 48.5 sq	NA1884X1884	47.6 sq x 1.51 H	SBGA-408 Amkor
	46 sq - 48.5 sq	NA1884X1884	47.6 sq x 1.58 H	ESBGA-408/528/640 Amkor
N50EZ50EB	48 sq - 50.5 sq	NA1982X1982	50.1 sq x 1.51 H	SBGA-432 Amkor
	48 sq - 50.5 sq	NA1982X1982	50.1 sq x 1.58 H	ESBGA-432/560/680 Amkor

*Air-Vac recommends the EZ style nozzle for the highest thermal performance, balance and efficiencies.*

*X style nozzles are package specific.*