



## Formatting X-Y Data

X-Y data for guiding pick-and-place equipment should be in text or excel format and must include columns for reference designators, component footprint, X and Y coordinates, angle of component rotation, and whether the part will be installed on the top or bottom of the board.

The X and Y coordinates must be provided for the centroid of each component, not pin 1 or other measurements. The point of origin (X0,Y0) should be given as the lower left corner of the board.

An example of how X-Y data should be formatted appears below.

Designator	Footprint	Mid X	Mid Y	TB	Rotation
F1	12-1812	7340mil	1857.5mil	T	270
D15	SM/D0213AA_12	880mil	2482mil	T	90
R32	RES_1206	567.5mil	2630 mil	B	360
U7	SM/SOT89	7527.74mil	959.055mil	B	270
U3	EDR8651_REV3	3740mil	1030mil	T	0

Check out our [PCB Assembly Checklist](#) to keep your order on track.