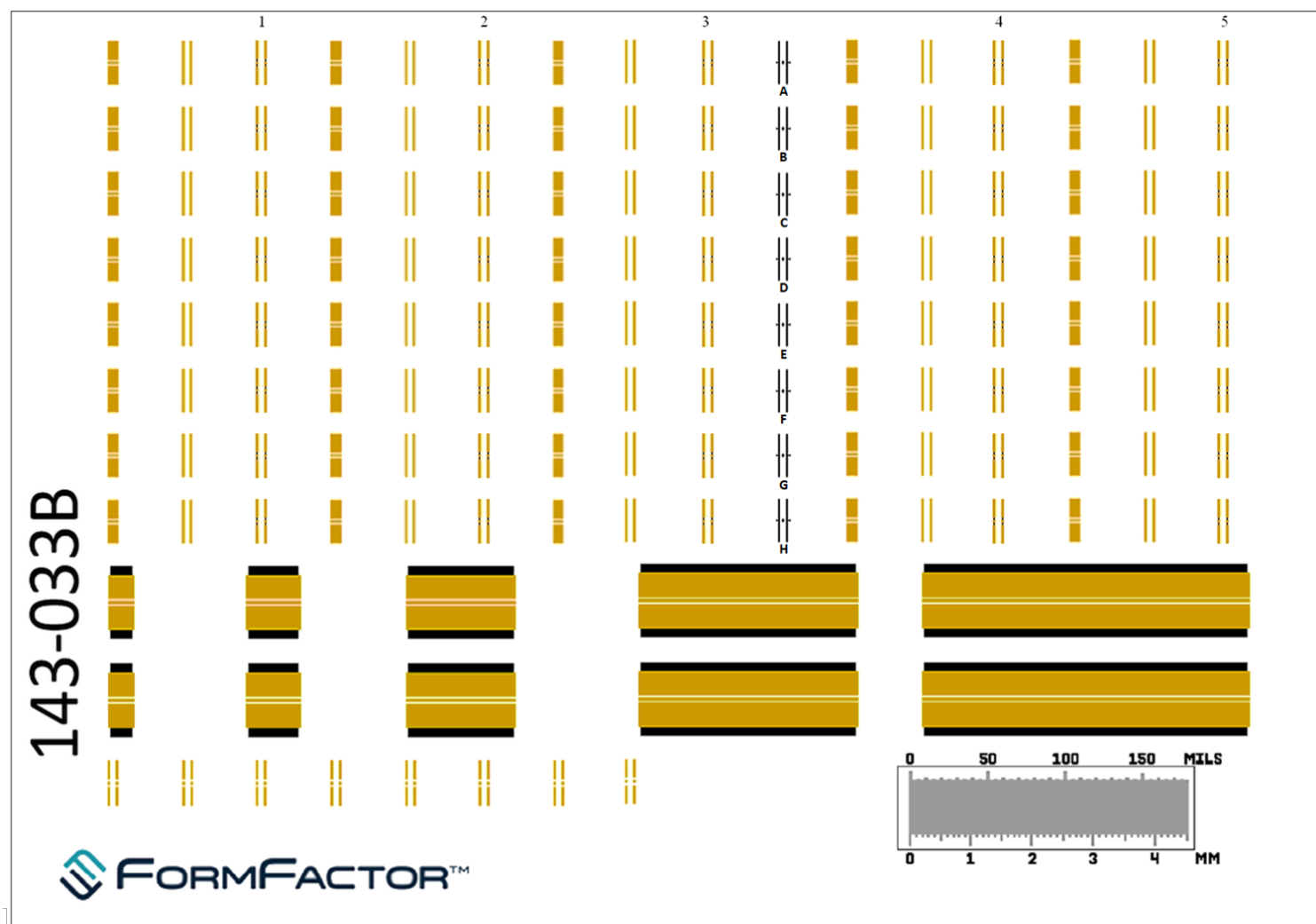


Cascade Impedance Standard SubstrateMap

► **P/N: 143-033**

Pitch: 100 μm - 250 μm




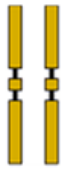
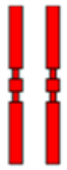

Configuration: **GSG**



Key to Map

Key to the 143-033 Map

Substrate specifications: Material: Alumina; Thickness: 10 mils (254 μm); Dielectric constant: 9.9

					Verification Lines		 Alignment Marks
					ps	um	
 Thru delay: 1.0 ps Impedance: 50 Ohm (Nominal) Note: Verification line lengths are signal conductor edge-to-edge dimension.	 Short Recommended Overtravel: ACP 75 - 125 μm Infinity 50 - 75 μm	  Precision 50 Ohm Load	Note: Ensure the bias supply is turned off during calibration. DC accuracy: $\pm 0.3\%$ Note: For optimum calibration accuracy only the Red - marked load standards should be used.		3	449	 Open (On Substrate)
					7	897	
					14	1799	
					27	3499	
					40	5249	

All the above specifications are based on an end probe tip separation of 130 μm set by the probe alignment marks. Recommended overtravel (downward movement of probe after initial touchdown on the substrate) listed above. This amount of overtravel is set before calibration on the Impedance Standard Substrate (ISS) using the alignment marks (allows precise setting of probe separation and overtravel). *Figure 1* shows that initial contact with the edge of the probe tips should be made at reference plane X. The desired overtravel and thus skate (forward movement of probe tips after initial contact with substrate) is then achieved by adjusting the Z height on the positioner to move the edge of the probe tips to reference plane Y. This can also be seen from the images shown in *Figure 2*.

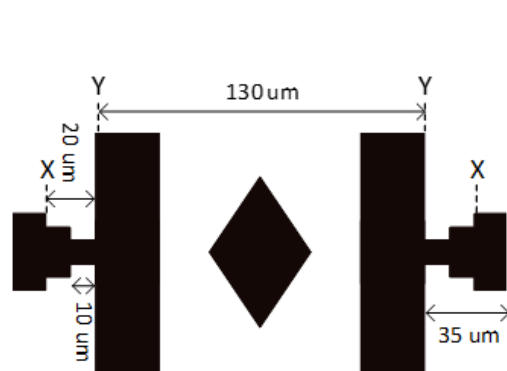


Figure 1: Alignment marks

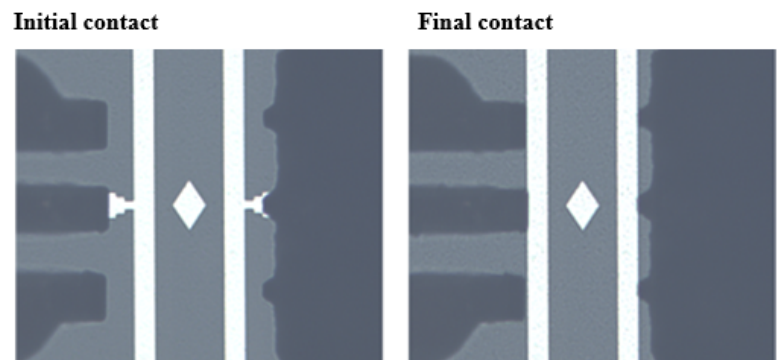


Figure 2: Correct alignment and placement of ACP (left probe) and Infinity (right probe) style probe tips

Calibration Coefficients are dependent on the probe tip configuration, placement on a standard, and the standard configurations. This leads to unique calibration coefficients for a unique pair of probe and ISS. Therefore, the calibration coefficients are supplied with the probe not with the ISS.