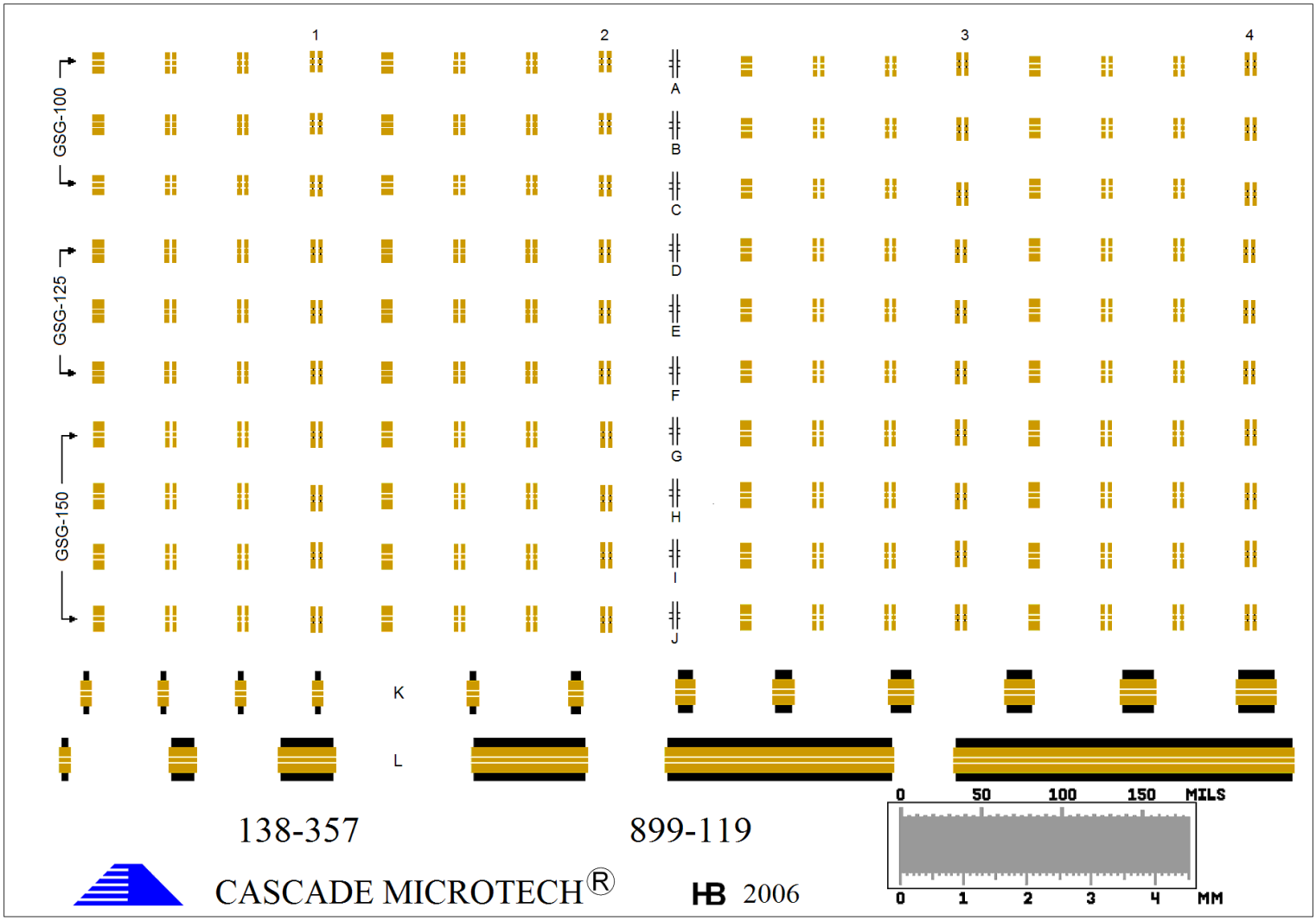
Cascade
Impedance Standard SubstrateMap

P/N: 138-357

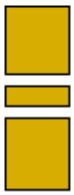
Pitch: **100 µm, 125 µm & 150 µm**

Configuration: **GSG**



Key to the 138-357 Map

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

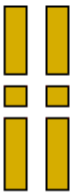


Thru

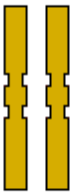
Thru delay: **0.5 ps**

Impedance: **50 Ohm** (Nominal)

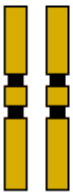
Note: Thru and Verification line lengths are signal conductor edge-to-edge dimension.



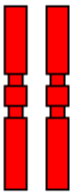
Open



Short



Load



Precision 50 Ohm Load

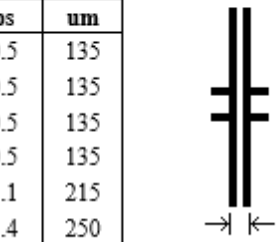
Note: Ensure the bias supply is turned **off** during calibration. Applying bias to the probe during calibration could cause the resistance of the load to change.

DC accuracy: **+/- 0.3 %**

Note: For optimum calibration accuracy **only** the **Red** - marked load standards should be used.

Verification Lines		
ID	**ps**	**um**
K1	0.5	135
K2	0.5	135
K3	0.5	135
K4	0.5	135
K5	1.1	215
K6	1.4	250
K7	1.9	315
K8	2.3	365
K9	2.7	420
K10	3.2	485
K11	3.8	570
K12	4.5	655

ID	**ps**	**um**
L1	1	200
L2	3	450
L3	7	900
L4	14	1800
L5	27	3500
L6	40	5250



65 um Alignment Marks

Note: ISS must be mounted on absorber material (such as ISS Holder PN 116-344) during calibration.

All of the above specifications are based on an overtravel (downward movement of probe after initial touchdown on the substrate) of 25-50 µm for Infinity style probes. This amount of overtravel can be 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 photographic images shown in Figure 2.

Figure 1: Alignment marks

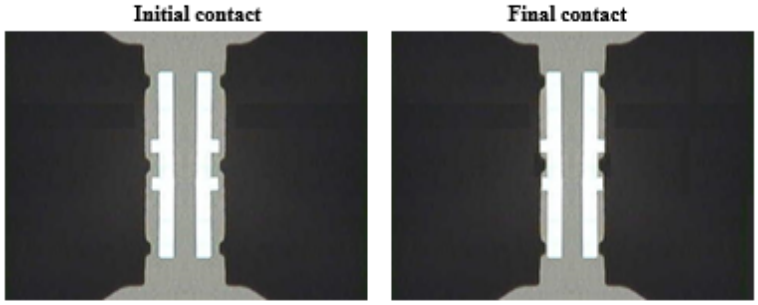


Figure 2: Images showing correct alignment and placement of probe tips of Infinity style probes.

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.

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