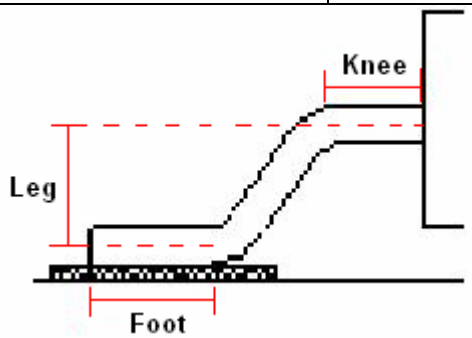
Package: CSP-100 SAC 105

Feature	Value [mm] (in)
Package length Fig 6	10.07 (0.3964)
Package width Fig 6	10.07 (0.3964)
Package thickness Fig 6	1.023 (0.0403)
Pitch Fig 5	0.8130 (0.032007)
Mass	2.49 g
CTE Strain Gauge Technique Temp range -50°C to 100°C Linear Correlation	5.018 ppm/°C (X - axis) 3.789 ppm/°C (Y- axis)
Die length Fig 6	5.608 (0.2208)
Die width Fig 6	5.608 (0.2208)
Die thickness Fig 6	0.2541 (0.0100)
Lead width	N/A
Lead thickness	N/A
Minimum lead gap	N/A
	
Lead foot length	N/A
Lead leg length	N/A
Lead knee length	N/A

Feature	Value
Lead/Termination Base Metal Alloy	Cu/25.40 [µm] Fig 7,11 (0.001)
Lead/Termination Metallization / thickness	Ni/11.33[µm] Fig 7,12 (0.000446)
Plating 1 metallization / thickness	N/A
Plating 2 metallization / thickness	N/A
Plating 3 metallization / thickness	N/A
Over-plate to protect during cross section?	No
Diameter of solder balls	0.468 Fig 9 (0.018425)
Solder ball alloy (SEM or XRF estimate)	SAC 105 Fig 10,13
Width of solder ball in contact w/ component pad	0.5396 Fig 9 (0.015577)
Width of component pad	0.5397 Fig 9 (0.021247)
Thickness of component pad	25.738[µm] Fig 11 (0.001007)
Diameter of solder mask opening	0.5396 Fig 9 (0.015577)

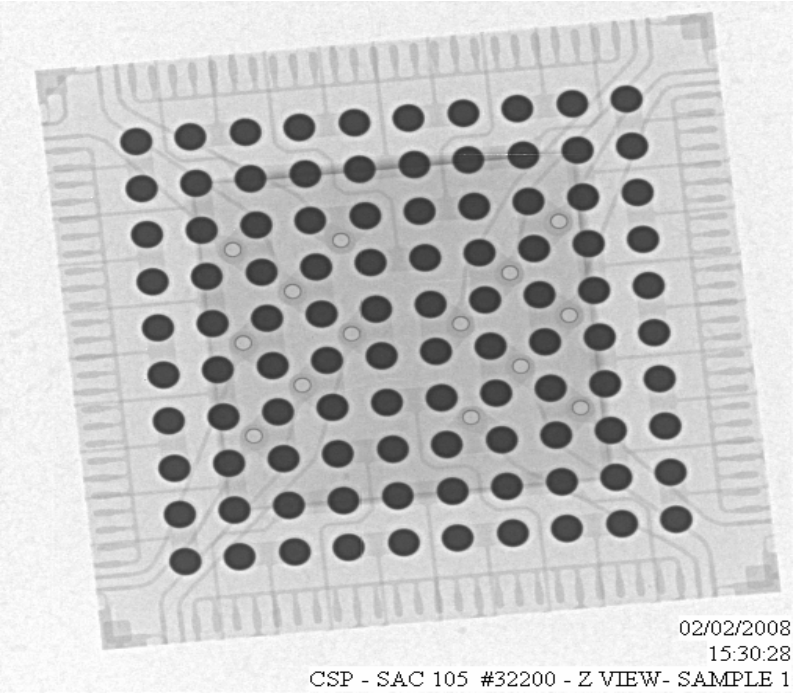


Fig.No.1 CSP-100 SAC 105, X-ray, View Z

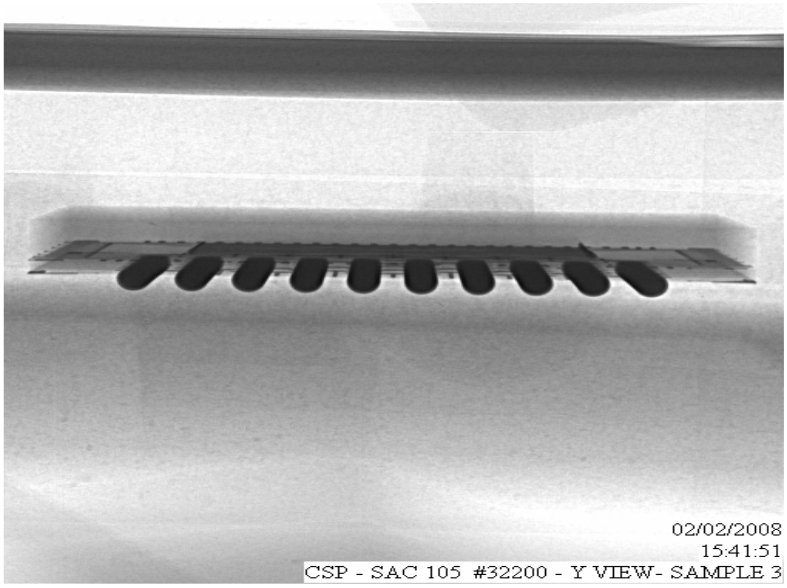


Fig.No.2 CSP-100SAC 105, X-ray, Inclined X-axis View

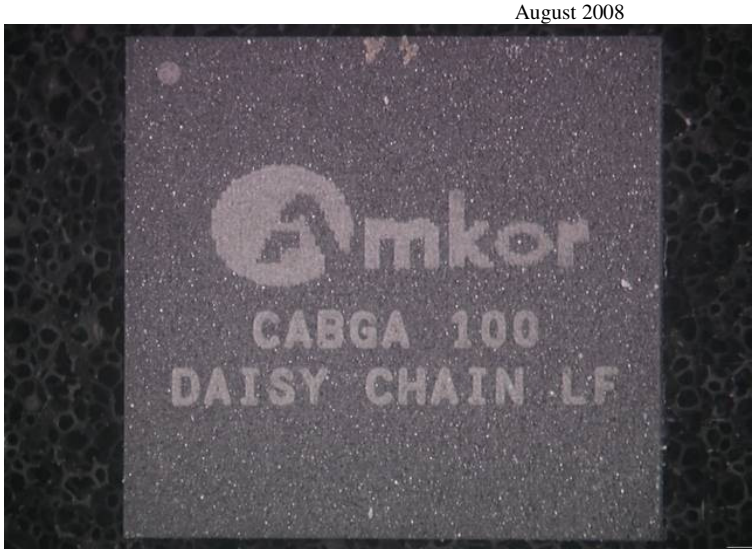


Fig No3. CSP-100SAC 105, Top View M~12X

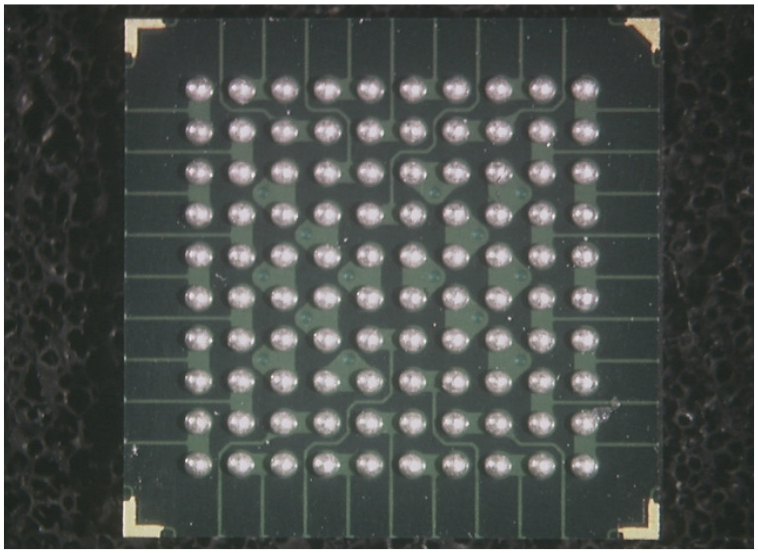


Fig No .4 CSP-100 SAC 105, Bottom View M~12X

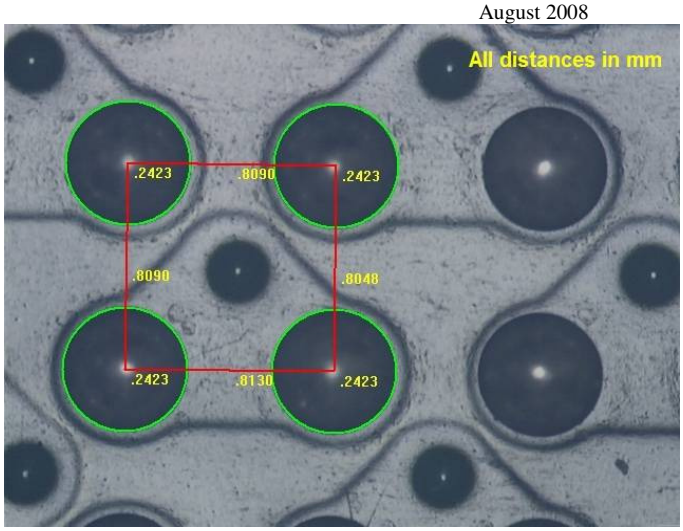


Fig No .5 CSP-100SAC 105, Bottom View M~64X

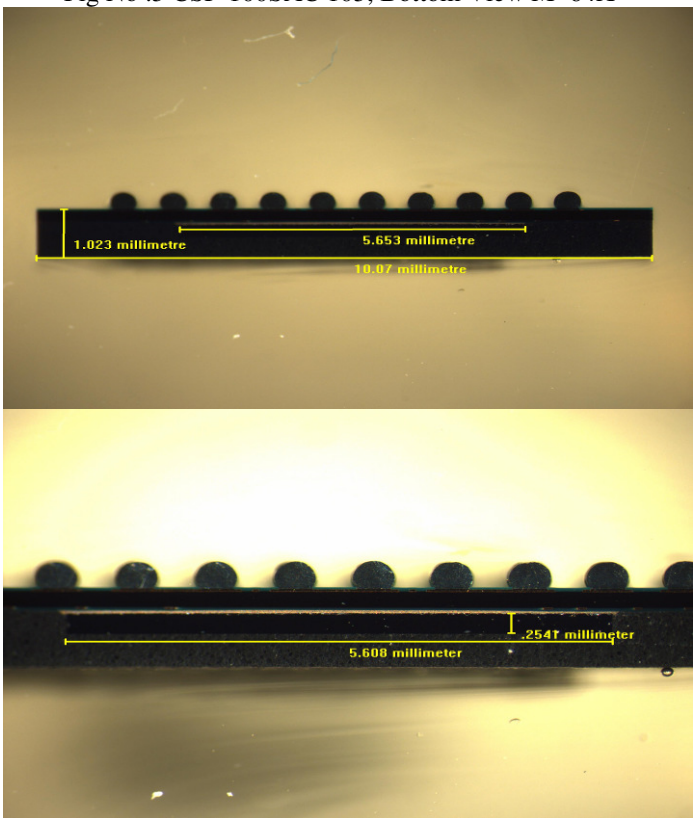


Fig No .6 CSP-100 SAC 100, Cross section, Overall M~15X and M~24X Typical View; adopted from SAC405 Component

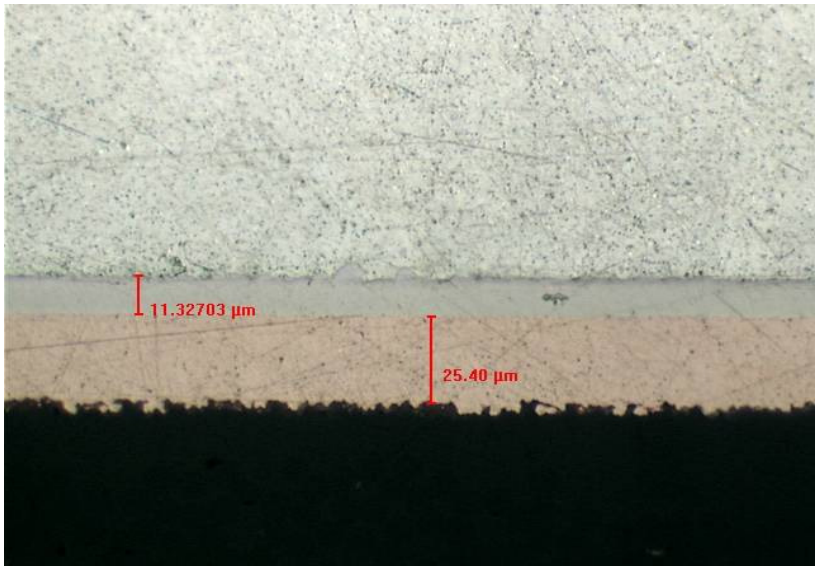


Fig No .7 CSP-100 SAC 105, Cross section, Pad/Plating/Solder M~768X

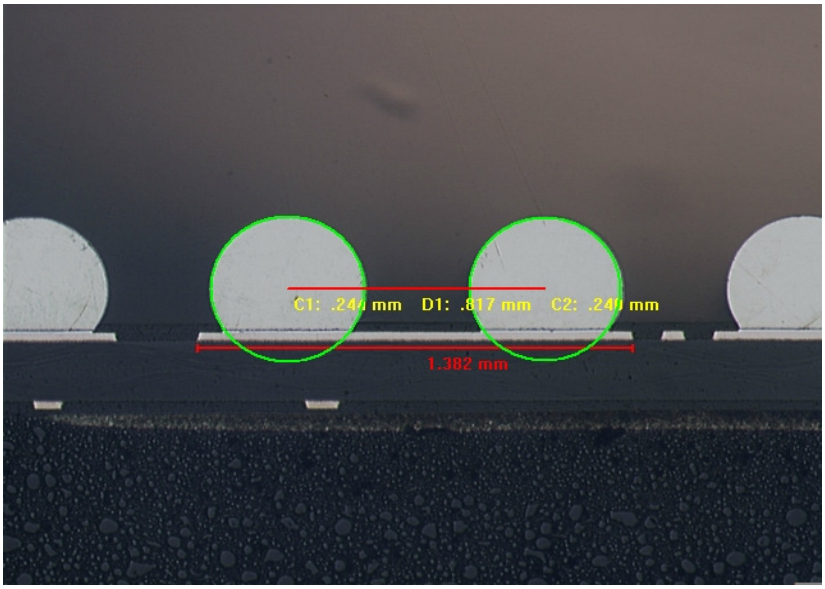


Fig No .8 CSP-100 SAC 105, Cross section, Ball to PCB Structure M~64X

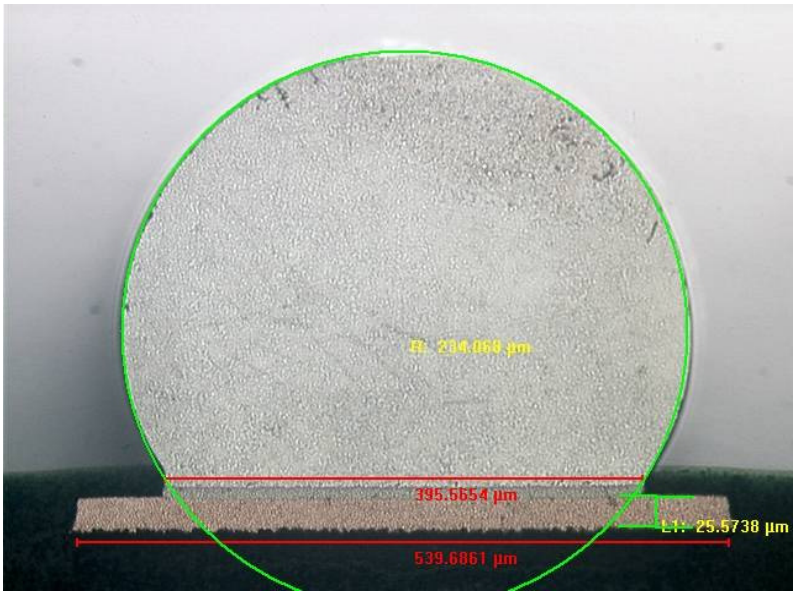
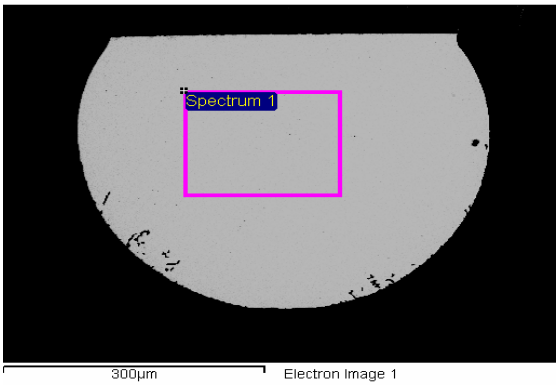
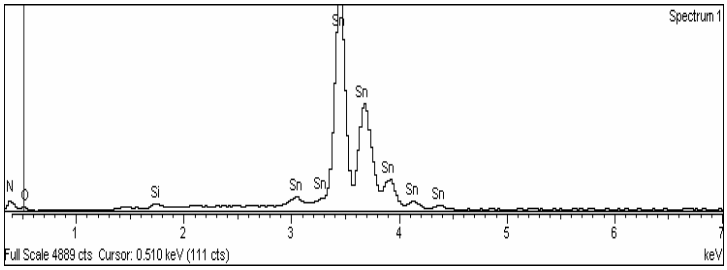


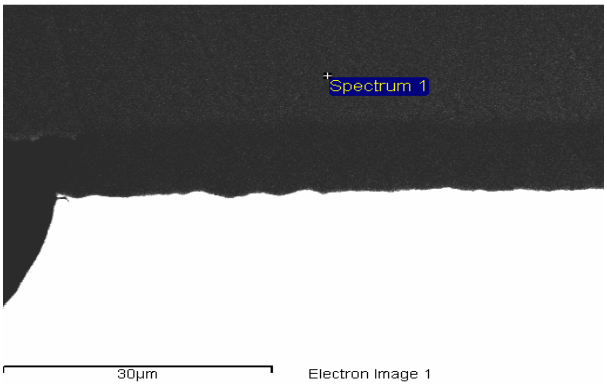
Fig No .9 CSP-100 SAC 105, Cross section, Ball, Pad, Solder Mask Opening Widths M~256X

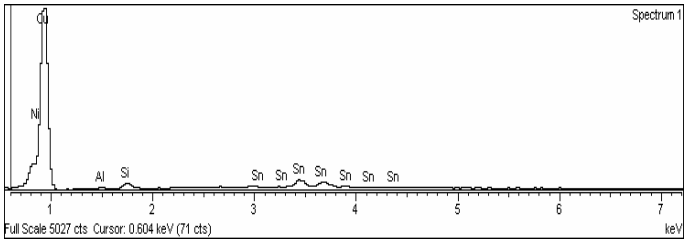




Element	App Conc.	Intensity Corrn.	Weight%	Weight% Sigma	Atomic%
C K	25.93	1.0168	5.98	0.63	26.65
N K	6.02	0.3836	3.68	2.02	14.06
O K	5.09	0.2001	5.96	1.52	19.94
Si K	2.05	0.5321	0.90	0.14	1.72
Sn L	346.61	0.9737	83.48	2.28	37.63
Totals			100.00		

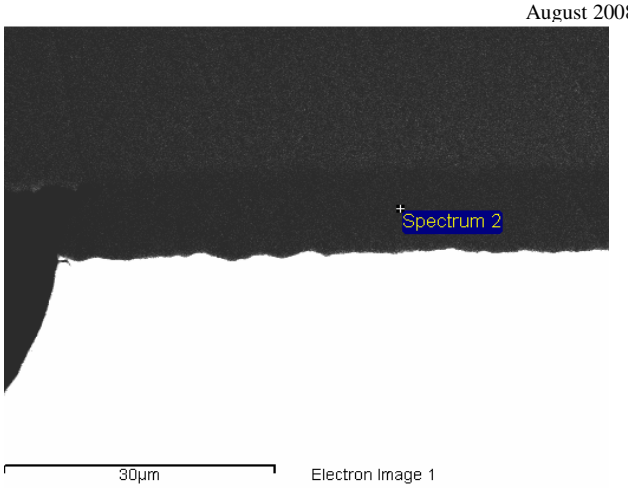
Fig No .10 CSP-100 SAC 105, Boll Material Analysis

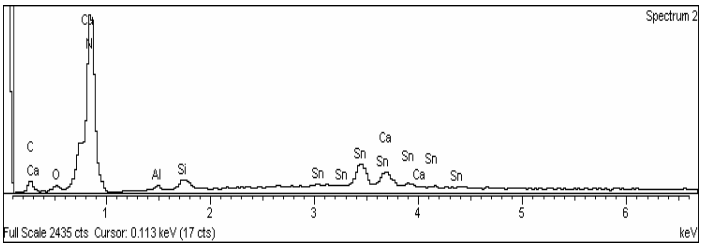




Element	App Conc.	Intensity Corrn.	Weight%	Weight% Sigma	Atomic%
C K	24.68	0.3057	16.10	1.17	47.72
O K	7.59	0.5595	2.71	0.47	6.02
Al K	0.80	0.2788	0.57	0.16	0.75
Si K	3.22	0.3749	1.71	0.16	2.17
Ni K	7.97	0.9850	1.61	0.15	0.98
Cu K	348.52	0.9441	73.60	1.13	41.24
Sn L	15.70	0.8441	3.71	0.23	1.11
Totals			100.00		

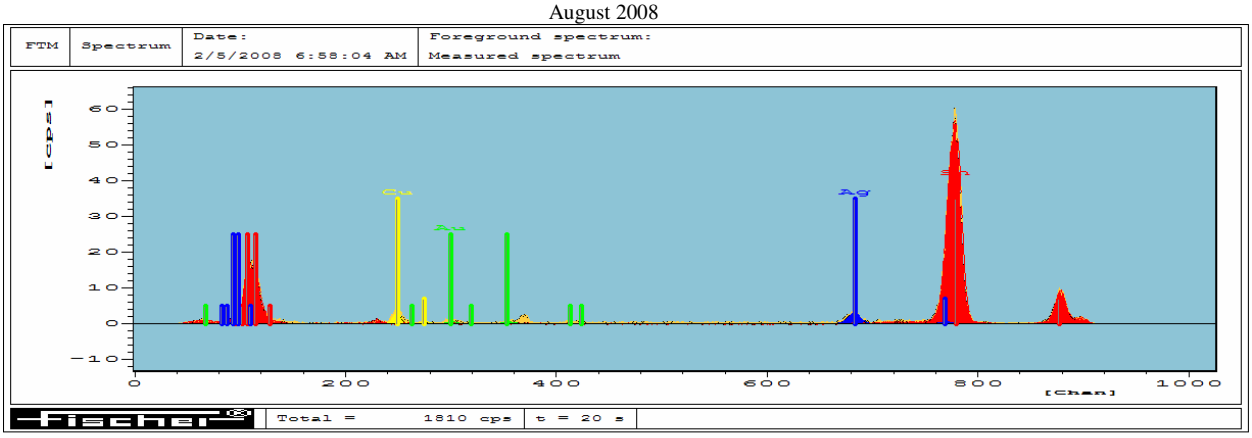
Fig No .11 CSP-100SAC 105, Pad Material Analysis





Element	App Conc.	Intensity Corrn.	Weight%	Weight% Sigma	Atomic%
C K	23.26	0.3269	14.68	1.09	44.22
O K	5.98	0.5657	2.18	0.48	4.93
Al K	0.96	0.2887	0.69	0.16	0.92
Si K	2.30	0.3865	1.23	0.16	1.58
Ca K	1.58	0.9943	0.33	0.11	0.30
Ni K	339.13	0.9610	72.83	1.05	44.87
Cu K	12.24	0.9212	2.74	0.24	1.56
Sn L	21.80	0.8471	5.31	0.29	1.62
Totals			100.00		

Fig No .12 CSP-100 SAC 105, Pad Plating Material Analysis



Foreground: Measured spectrum
Meas. para. (foreground spectrum):
High voltage = 50 kV (875) Prim. Filter = Ni
Collimator 2 = 0.30 Dm. Anode current 1000 uA
Meas. distance = 0.002 inch

Results of analysis: (%)

50	Sn	=	96.76
47	Ag	=	1.54
79	Au	=	0.38
29	Cu	=	1.32

Fig No .13 CSP-100 SAC 105, Ball Plating Material Analysis