



# 100% Material Declaration Data Sheet for FFG1152

PK094 (v1.4) May 13, 2016

**Average Weight : 13.8620 g**

Component	Substance Description	CAS # or Description	% of Component	Use in product	Component Weight	Component % of total
Silicon Die					<b>0.761860</b>	5.490%
	Silicon	7440-21-3	100.000		0.761800	
Solder Bump					<b>0.036790</b>	0.270%
	Tin	7440-31-5	63.000		0.023176	
	Lead	7439-92-1	37.000		0.013611	
Underfill					<b>0.074000</b>	0.540%
	Epoxy Resin A	9003-36-5	20.000		0.014800	
	Epoxy Resin B	25068-38-6	3.000		0.002220	
	Silica	60676-86-0	70.000		0.051800	
Heat Spreader					<b>6.000000</b>	43.270%
	Copper	7440-50-8	99.900		5.994000	
Heat Spreader Adhesive					<b>0.150000</b>	1.082%
	Nickel	7440-02-0	0.100		0.000600	
Heat Spreader Adhesive					<b>0.150000</b>	1.082%
	Organopolysiloxane mixture		100.000		0.150000	
Solder Balls					<b>0.962340</b>	6.940%
	Tin	7440-31-5	95.500		0.919035	
	Silver	7440-22-4	4.000		0.038494	
Substrate					<b>5.880000</b>	42.410%
	Copper	7440-50-8	46.13	Metal Layer	2.712444	
	Tin	7440-31-5	0.70	Metal Layer	0.041160	
	Lead	7439-92-1	0.11	Metal Layer	0.006468	
	Silver	7440-22-4	0.02		0.001176	
	Core	N/A	37.28		2.192064	
	ABF	N/A	13.12		0.771456	
Solder Mask	N/A	2.63		0.154644		

## Revision History

Date	Version	Description of Revisions
03/14/2006	1.0	Initial Initial release.
06/29/2006	1.1	100% Material Declaration.
09/27/2006	1.2	Updated component descriptions.
07/20/2010	1.3	Updated Heat Spreader substance description
05/13/2016	1.4	Updated substrate

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