100% Material Declaration Data Sheet for FFG1148

PK093 (v1.4) May 13, 2016

Average Weight : 10.8691 g

Component	Substance Description	CAS # or Description	% of Component	Use in product	Component Weight	Component % of total
Silicon Die					**0.694500**	**6.390%**
	Silicon	7440-21-3	100.000		0.694500	
Solder Bump					**0.036115**	**0.332%**
	Tin	7440-31-5	63.000		0.022753	
	Lead	7439-92-1	37.000		0.013363	
Underfill					**0.074000**	**0.681%**
	Silica	60676-86-0	70.000		0.051800	
	Epoxy Resin A	9003-36-5	20.000		0.014800	
	Epoxy Resin B	25068-38-6	3.000		0.002220	
	Hardener	19900-65-3	7.000		0.005180	
Heat Spreader					**6.000000**	**55.203%**
	Copper	7440-50-8	99.900		5.994000	
	Nickel	7440-02-0	0.100		0.006000	
Heat Spreader Adhesive					**0.130000**	**1.196%**
	Organopolysiloxane mixture	NA	100.000		0.130000	
Solder Ball					**0.959000**	**8.823%**
	Tin	7440-31-5	95.500		0.915845	
	Silver	7440-22-4	4.000		0.038360	
	Copper	7440-50-8	0.500		0.004795	
Substrate					**2.975310**	**27.375%**
	Copper	7440-50-8	50.17	metal layer	1.492713	
	Tin	7440-31-5	0.76	metal layer	0.022612	
	Lead	7439-92-1	0.15	metal layer	0.004463	
	Silver	7440-22-4	0.02		0.000595	
	Core	N/A	34.56		1.028267	
	ABF	N/A	12.05		0.358525	
	Solder Mask	N/A	2.30		0.068432	

Revision History

Date	Version	Description of Revisions
03/14/2006	1.0	Initial Initial release.
06/01/2006	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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