



LC4 LC4B SiGe

Product Environmental Data Sheet

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Product Information	Date/Time Revision:	September 14, 2006					
	Manufacture site:	Chelmsford, MA					
	Product Number	Generic: LC4, Ceramic Air Cavity Microcircuit					
	Product Name	Surface Mount SiGe Semiconductor					
	Product Mass	Grams:	Min	0.0362	Max	0.0446	Nominal
Product Note							

Material Composition Information

Component	Sub- Part Name	Material	Material Trade Name	Material Mass (g) <i>Minimum</i>	Material Mass (g) <i>Maximum</i>	Percent of product (%) <i>Minimum</i>	Percent of product (%) <i>Maximum</i>
A	Ceramic Package Body	HTCC Alumina (Al ₂ O ₃)	NTK BA-914	0.015397	0.022801	42.6%	51.1%
B	Ceramic Lid	HTCC Alumina (Al ₂ O ₃)	Kyocera A476	0.013364	0.017681	37.0%	39.6%
C	Epoxy, Die Attach	Conductive Epoxy	Ablebond 84-1LMI	0.000197	0.001120	0.5%	2.5%
D	Semiconductor, SiGe	Non- metal, Non- polymer	Silicon/Germanium	0.000695	0.002795	1.9%	6.3%
E	Bond Wire, Gold	Metal	Wire	0.000008	0.000200	0.0%	0.4%
F	Plating, Pad Finish	Gold over Nickel	Plating Coat	0.002726	0.004659	7.5%	10.4%
Substance	Sub-part Name and Substance	Sub Part Substance CAS#	Substance Note	Substance Mass (g) <i>Minimum</i>	Substance Mass (g) <i>Maximum</i>	Percent of Substance (%) <i>Minimum</i>	Percent of Substance (%) <i>Maximum</i>
A	Ceramic Package Body						
A1	Alumina (Al ₂ O ₃)	1344-28-1		0.014012	0.020977	91.0%	92.0%
A2	Inorganic Binders	(Proprietary)		0.001232	0.002052	8.0%	9.0%
B	Ceramic Lid						
B1	Alumina (Al ₂ O ₃)	1344-28-1		0.012696	0.016974	95.0%	96.0%
B2	Epoxy, B-Stage	(Proprietary)		0.000134	0.000530	1.0%	3.0%
B3	Inorganic Binders	(Proprietary)		0.000535	0.000884	4.0%	5.0%
C	Epoxy, Die Attach						
C1	Silver	7440-22-4		0.000138	0.000952	70.0%	85.0%
C2	1,4 Bis(2,3-epoxypropoxy)butane	2425-79-8		0.000002	0.000224	1.0%	20.0%
C3	Diglycidylether of bisphenol-F	54208-63-8		0.000002	0.000224	1.0%	20.0%
C4	Aromatic Amine	(Proprietary)		0.000002	0.000112	1.0%	10.0%
D	Semiconductor, SiGe						
D1	Si	7440-21-3	n/a	0.000521	0.002375	75.00%	85.00%
D2	Ge	7440-56-4	n/a	0.000104	0.000699	15.00%	25.00%
E	Bond Wire, Gold						
E1	Gold (Au)	7440-57-5		0.000008	0.000200	99.99%	100.0%
F	Plating, Pad Finish						
F1	Tungsten (W)	7440-33-7		0.002128	0.003974	78.1%	85.3%
F2	Nickel (Ni)	7440-02-0		0.000152	0.000282	5.6%	6.1%
F3	Gold (Au)	7440-57-5		0.000236	0.000762	8.7%	16.3%

NOTE: CAS in not available for proprietary substances. All percentages are calculated from mass data declared. Material trade names are not applicable to some common materials for constant composition. When CAS is unavailable, vendor supplier comments such as PROPRIETARY or TRADE SECRET will be documented

Absence of Hazardous Substances

Our material composition policy is to declare all substances intentionally added in our products and documented by our vendors. Additionally we confirm the following regulated substances known to be in electronics are not intentionally added or knowingly present in our semiconductor products or product packaging: Cadmium and cadmium compounds, mercury and mercury compounds, hexavalent chromium compounds, polychlorinated biphenyl (PCB), polychlorinated naphthalenes (PCN), polybrominated diphenyl ether (PBDE), decabromodiphenyl ether (DecaBDE), short chain paraffins (CP) (C10-13) (Cl = 50 wt% or more), mirex (perchlordecone), TBBP-A-bis, organic tin compounds (tributyl tin compounds / triphenyl tin compounds) Asbestos, formaldehyde and Azo compounds.

Product Life Cycle Information

Our devices are often incorporated into printed circuit boards and then assembled with other parts into electronic systems. In the U.S.A., end-of-life printed circuit boards {waste}, are considered scrap metal by the Environmental Protection Agency {EPA} when they are recycled {USEPA Mgt. memo, Regulatory Status or Printed Circuit Boards, Aug 26, 1992}. If any of our products are disposed of as part of a printed circuit board, the entire assembly is treated as scrap metal. Approved printed circuit recycling companies either have proper facilities or have access to secondary metal smelters and refiners which can safely recycle scrap electronic components or assemblies

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