



# LP3 SiGe

## Product Environmental Data Sheet

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<b>Product Information</b>	<b>Date/Time Revision:</b>	February 25, 2005					
	<b>Manufacture site:</b>	Chelmsford MA					
	<b>Product Number</b>	Generic: LP3, Plastic Encapsulated Microcircuit					
	<b>Product Name</b>	Surface Mount SiGe Semiconductor					
	<b>Product Mass</b>	Grams:	Min	0.02142	Max	0.02618	Nominal
<b>Product Note</b>							

### Material Composition Information

Component	Material Part Name	Material	Material Trade Name	Material Mass (g)	Material Mass (g)	Percent of product (%)	Percent of product (%)
				Minimum	Maximum	Minimum	Maximum
A	Lead Frame	Metal	Copper Lead Frame	0.0086	0.0118	40.0%	45.0%
B	Mold Compound	Polymer	Sumitomo EME7730LF	0.0099	0.0131	46.0%	50.0%
C	Epoxy, Die attach	Epoxy	Sumitomo CRM1076DJ	0.0002	0.0005	1.0%	2.0%
D	Semiconductor, SiGe	Non- metal, Non- polymer	Silicon/Germanium	0.0002	0.0005	1.0%	2.0%
E	Bond Wire, Gold	Metal	Wire	0.0001	0.0003	0.5%	1.0%
F	Solder, Lead Finish	Sn/Pb	Plating Coat	0.0002	0.0005	1.0%	2.0%
Substance	Substance Name	Substance CAS#	Substance Note	Substance Mass (g) Minimum	Substance Mass (g) Maximum	Percent of Substance (%) Minimum	Percent of Substance (%) Maximum
<b>A</b>	<b>Copper Lead Frame</b>						
A1	Cu	7440-50-8	n/a	0.008311	0.011545	97.00%	98.00%
A2	Fe	7439-89-6	n/a	0.000227	0.000314	2.30%	2.40%
A3	Zn	7440-66-6	n/a	0.000000	0.000001	0.11%	0.13%
A4	P	7723-14-0	n/a	0.000000	0.000000	0.02%	0.04%
<b>B</b>	<b>Mold Compound</b>						
B1	Silica Fused	60676-86-0	n/a	0.007390	0.012436	75.00%	95.00%
B2	Epoxy Resin	(Trade Secret)	n/a	0.000394	0.001309	4.00%	10.00%
B3	Phenol Resin	(Trade Secret)	n/a	0.000099	0.000785	1.00%	6.00%
B4	Antimony Trioxide	1309-64-4	n/a	0.000010	0.000118	0.10%	0.90%
B5	Brominated Epoxy Resin	40039-93-8	n/a	0.000985	0.000131	10.00%	1.00%
B6	Carbon Black	1333-86-4	n/a	0.000010	0.000065	0.10%	0.50%
<b>C</b>	<b>Die Attach Epoxy</b>						
C1	Silver	7440-22-4	n/a	0.000139	0.000445	65.00%	85.00%
C2	Epoxy Resin	9003-36-5	n/a	0.000032	0.000131	15.00%	25.00%
C3	t-Butyl phenyl glycidyl ether	3101-60-8	n/a	0.000011	0.000052	5.00%	10.00%
C4	Phenolic hardener	92-88-6	n/a	0.000002	0.000010	1.00%	2.00%
C5	Butyl cellosolve acetate	112-07-2	n/a	0.000001	0.000008	0.50%	1.50%
<b>D</b>	<b>SiGe Semiconductor</b>						
D1	Si	7440-21-3	n/a	0.000161	0.000445	75.00%	85.00%
D2	Ge	7440-56-4	n/a	0.000032	0.000131	15.00%	25.00%
<b>E</b>	<b>Bond Wire</b>						
E1	Gold (Au)	7440-57-5	Die Attach, wirebond	0.000107	0.000262	99.99%	100.00%
<b>F</b>	<b>Solder</b>						
F1	Tin	7440-31-5	Tin, Lead solder	0.000180	0.000450	84.00%	86.00%
F2	Lead	7439-92-1	Tin, Lead solder	0.000030	0.000084	14.00%	16.00%

**NOTE:** CAS is 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

### Flammability

The plastic mold compound used for this device has been tested for flammability of plastic materials used for parts in devices and appliances and is classified as UL-94 V0.

### 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), 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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