



# G8 GaAs

## Product Environmental Data Sheet

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Product Information	<b>Date/Time Revision:</b> February 25, 2005	
	<b>Manufacture site:</b> Chelmsford MA	
	<b>Product Number</b> Generic: G8 Glass Metal Package	
	<b>Product Name</b> Surface Mount GaAs Semiconductor	
	<b>Product Mass</b>	Grams: <span style="float: right;">Min 0.1665      Max 0.2035      Nominal 0.185</span>
<b>Product Note</b>		

### 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	Lead Frame, Seal Ring, Base	Metal	Kovar	0.1465	0.1832	88.0%	90.0%
B	Glass	Glass	7052	0.0133	0.0204	8.0%	10.0%
C	Epoxy, Die attach	84-1LMIT1	ABLESTIK	0.0008	0.0020	0.5%	1.0%
D	Semiconductor, GaAs	Non- metal, Non- polymer	Crystalline Gallium Arsenide	0.0008	0.0020	0.5%	1.0%
E	Bond Wire, Gold	Metal	Wire	0.0004	0.0010	0.3%	0.5%
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>
<b>A</b>	<b>Lead Frame, Seal Ring, Base</b>						
A1	Ni	7440-02-0	n/a	0.039560	0.053114	27.00%	29.00%
A2	Fe	7439-89-6	n/a	0.079121	0.106227	54.00%	58.00%
A3	Co	7440-48-4	n/a	0.021978	0.031136	15.00%	17.00%
A4	Mn	7439-96-5	n/a	0.000410	0.000549	0.28%	0.30%
A5	Si	7440-21-3	n/a	0.000249	0.000366	0.17%	0.20%
A6	C	7440-44-0	n/a	0.000015	0.000037	0.01%	0.02%
<b>B</b>	<b>Glass</b>						
B1	Silica (SiO2)	PROPRIETARY	n/a	0.008525	0.013431	64.00%	66.00%
B2	Alumina (Al2O3)	PROPRIETARY	n/a	0.000932	0.001832	7.00%	9.00%
B3	Boron Oxide (B2O3)	10043-35-3	n/a	0.002264	0.003867	17.00%	19.00%
B4	Soda (Na2O)	497-19-8	n/a	0.000133	0.000407	1.00%	2.00%
B5	Potash (K2O)	584-08-7	n/a	0.000266	0.000814	2.00%	4.00%
B6	Barium Oxide (BaO)	PROPRIETARY	n/a	0.000266	0.000814	2.00%	4.00%
B7	Lithium Oxide (Li2O)	554-13-2	n/a	0.000067	0.000204	0.50%	1.00%
B8	Fluorine (F)	PROPRIETARY	n/a	0.000067	0.000201	0.50%	0.99%
<b>C</b>	<b>Die Attach Epoxy</b>						
C1	Silver	7440-22-4	n/a	0.000583	0.001730	70.00%	85.00%
C2	1,4-Bis (2,3-epoxypropoxy) butane	2425-79-8	n/a	0.000008	0.000204	1.00%	10.00%
C3	Aromatic Amine	PROPRIETARY	n/a	0.000008	0.000204	1.00%	10.00%
C4	Epoxy Resin	PROPRIETARY	n/a	0.000083	0.000611	10.00%	30.00%
<b>D</b>	<b>GaAs Semiconductor</b>						
D1	Ga	1303-00-0/7440-55-3	n/a	0.000383	0.001018	46.00%	50.00%
D2	As	1303-00-0/7440-38-2	n/a	0.000416	0.001099	50.00%	54.00%
<b>E</b>	<b>Bond Wire</b>						
E1	Gold (Au)	7440-57-5	Die Attach, wirebond	0.000416	0.001018	99.99%	100.00%

**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

### Flammability

The glass used for this device is non-flammable.

### 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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