



Semiconductor Device Type: TO / ZB / BX (A2X) 003 TO-92 Matte Tin				Termination Base Alloy: Copper Alloy (Cu)			Package Homogeneous Materials: 8.1 Electronics (e.g. pc boards, displays)			JEDEC 97 Product Marking and/or Pkg. Labeling e3
Basic Substance	CAS Number	"Contained In" Sub-Component	% Total Weight	mg/part	ppm	114.11	(mg) Total	Mold Compound	% of Total Weight	56.77
Silica, vitreous	60676-86-0	Mold Compound	48.255	96.992	482.545		Silica, vitreous	60676-86-0	85.00	
Epoxy Resin (No bromine, No diantimony trioxide)	Trade Secret	Mold Compound	3.477	6.989	34.772		Epoxy Resin	Trade Secret	6.13	
Phenolic Resin (No Br / CL SbO3, No diantimony trioxide)	Trade Secret	Mold Compound	3.477	6.989	34.772		Phenolic Resin	Trade Secret	6.13	
Epoxy, Cresol Novolac	29690-82-2	Mold Compound	1.391	2.796	13.909		Epoxy, Cresol Novolac	29690-82-2	2.45	
Carbon Black	1333-86-4	Mold Compound	0.170	0.342	1.703		Carbon Black	1333-86-4	0.30	
Copper	7440-50-8	Lead Frame	38.024	76.428	380,239		<b>Total</b>			<b>100.00</b>
Iron	7439-89-6	Lead Frame	0.935	1.880	9.353	<b>80.00</b>	<b>(mg) Total</b>	<b>Lead Frame</b>	<b>% of Total Weight</b>	<b>39.8</b>
Silver	7440-22-4	Lead Frame	0.758	1.524	7.582		Copper	7440-50-8	95.54	
Zinc	7440-66-6	Lead Frame	0.050	0.100	498		Iron	7439-89-6	2.35	
Phosphorous	7723-14-0	Lead Frame	0.033	0.066	328		Silver	7440-22-4	1.91	
Silver	7440-22-4	Die Attach	0.066	0.134	664		Zinc	7440-66-6	0.13	
Epoxy Resin	9003-36-5	Die Attach	0.017	0.034	169		Phosphorous	7723-14-0	0.08	
t-Butyl phenyl glycidyl ether	3101-60-8	Die Attach	0.006	0.011	57		<b>Total</b>			<b>100.00</b>
Phenolic hardener	92-88-6	Die Attach	0.000	0.001	3	<b>0.18</b>	<b>(mg) Total</b>	<b>Die Attach</b>	<b>% of Total Weight</b>	<b>0.09</b>
Butyl cellosolve acetate	112-07-2	Die Attach	0.001	0.001	7		Silver	7440-22-4	73.80	
Silicon	7440-21-3	Chip (Die)	0.800	1.608	8,000		Epoxy Resin	9003-36-5	18.80	
Gold	7440-57-5	Wire Bond	0.040	0.080	400		t-Butyl phenyl glycidyl ether	3101-60-8	6.30	
Tin	7440-31-5	Plating on external leads (pins) - Matte Tin / annealed at 150°C for 1 hour	2.500	5.025	25,000		Phenolic hardener	92-88-6	0.30	
<b>0.2010 g Total Mass</b>			<b>TOTALS:</b>	<b>100.000</b>	<b>201.000</b>	<b>1,000,000</b>	Butyl cellosolve acetate	112-07-2	0.80	
						<b>Total</b>			<b>100.00</b>	
This semiconductor device and its homogenous materials comply with EU Directives: 2002/95/EC (27 January 2003) & Directive 2011/65/EU (08 June 2011) and 2015/863/EU (31 March 2015) and 2002/53/EC (End-of-Life Vehicles (ELV) without exemption (zero)						1.61	Total (mg)	Chip (Die)	% of Total Weight	0.8
Compliance with the above EU Directives has been verified via internal design controls, supplier declarations, and /or analytical test data.							Doped Silicon	7440-21-3	100	
If a chemical substance is absent from the list above, the chemical substance is NOT an intentional ingredient in the semiconductor device and, to the best of Microchip Technology Incorporated's knowledge and belief as of the date of this document, there is no credible reason to believe that the unavoidable impurity concentration of the chemical substance, if any, is not below the threshold of regulatory concern for any regulatory scheme world-wide.						<b>Total</b>			<b>100.00</b>	
Molding compounds used by Microchip meet the UL94 V0 flammability standard for plastics. You can access the UL IQTM family of databases to obtain a test report at <a href="http://ul.com/global/eng/pages/offers/industries/chemicals/plastics/">http://ul.com/global/eng/pages/offers/industries/chemicals/plastics/</a>						0.08	(mg) Total	Wire Bond	% of Total Weight	0.04
The protective "tubes" in which the specific product is shipped are made from polyvinyl chloride (PVC) plastic. "Window envelopes" used to hold the packing slip on the outer box and certain "reels" may be made from PVC plastic.							Doped Gold	7440-57-5	100	
Microchip Technology Incorporated believes the information in this form concerning substances restricted by RoHS in Microchip Technology Incorporated's semiconductor devices in their original packing materials is true and correct to the best of its knowledge and belief, as of the date listed in this form. Microchip Technology Incorporated cannot guarantee the completeness and accuracy of data in this form because it has been compiled based on the ranges provided in Material Safety Data Sheets provided by raw material suppliers. Supplier information is often protected from disclosure as trade secrets and some information may not have been provided by subcontract assemblers and raw material suppliers. Information is provided only as estimates of the average weight of these parts and the average weight of anticipated significant toxic metals components. These estimates do not include trace levels of dopants, metals, and non-metal materials contained within silicon devices (silicon IC) in the finished parts.						<b>Total</b>			<b>100.00</b>	
Microchip Technology Incorporated does not provide any warranty, express or implied, with respect to the information provided in this declaration. The exclusive, limited product warranties provided by Microchip Technology Incorporated and its subsidiaries are contained in Microchip's standard terms and conditions of sale. These are provided in Microchip's quotations, sales order acknowledgement, and invoices.						5.03	(mg) Total	Plating on external leads (pins) - Matte Tin / annealed at 150°C for 1 hour	% of Total Weight	2.5
Microchip disclaims any duty to notify users of updates or changes to Material Content Declarations and shall not be liable for any damages, direct or indirect, consequential or otherwise, suffered by users or third parties as a result of the users' reliance on the information in Material Content Declarations (MCD) or independent third party test reports (SGS) or of this Certificate of Compliance for semiconductor products.							Tin	7440-31-5	100.00	
Assembled package referenced above is EU REACH compliant based on the latest SVHC candidate list of ECHA which can be found at <a href="http://echa.europa.eu/web/guest/candidate-list-table">http://echa.europa.eu/web/guest/candidate-list-table</a>						<b>Total</b>			<b>100.00</b>	
						201.000				100.000