



Semiconductor Device Type: 6XX 128 TQFP 14x14x1mm Matte Tin			Termination Base Alloy: Copper Alloy (Cu)			Package Homogeneous Materials			J-STD-609A Product Marking and/or Pkg. Labeling e3																																																																								
Basic Substance	CAS Number	"Contained In" Sub-Component	% Total Weight	mg/part	ppm	372.52 (mg) Total	Mold Compound	% of Total Weight	66.82																																																																								
Fused Silica	60676-86-0	Mold Compound	59.136	329.682	591.357	<table> <tr><td>Fused Silica</td><td>60676-86-0</td><td>88.50</td></tr> <tr><td>Epoxy Resin</td><td>Trade Secret</td><td>6.50</td></tr> <tr><td>Phenol Resin</td><td>Trade Secret</td><td>4.75</td></tr> <tr><td>Carbon Black</td><td>1333-86-4</td><td>0.25</td></tr> <tr><td colspan="2">Total</td><td>100.00</td></tr> </table>	Fused Silica	60676-86-0	88.50	Epoxy Resin	Trade Secret	6.50	Phenol Resin	Trade Secret	4.75	Carbon Black	1333-86-4	0.25	Total		100.00	<table> <tr><td>Fused Silica</td><td>60676-86-0</td><td>88.50</td></tr> <tr><td>Epoxy Resin</td><td>Trade Secret</td><td>6.50</td></tr> <tr><td>Phenol Resin</td><td>Trade Secret</td><td>4.75</td></tr> <tr><td>Carbon Black</td><td>1333-86-4</td><td>0.25</td></tr> <tr><td colspan="2">Total</td><td>100.00</td></tr> </table>	Fused Silica	60676-86-0	88.50	Epoxy Resin	Trade Secret	6.50	Phenol Resin	Trade Secret	4.75	Carbon Black	1333-86-4	0.25	Total		100.00	<table> <tr><td>Fused Silica</td><td>60676-86-0</td><td>88.50</td></tr> <tr><td>Epoxy Resin</td><td>Trade Secret</td><td>6.50</td></tr> <tr><td>Phenol Resin</td><td>Trade Secret</td><td>4.75</td></tr> <tr><td>Carbon Black</td><td>1333-86-4</td><td>0.25</td></tr> <tr><td colspan="2">Total</td><td>100.00</td></tr> </table>	Fused Silica	60676-86-0	88.50	Epoxy Resin	Trade Secret	6.50	Phenol Resin	Trade Secret	4.75	Carbon Black	1333-86-4	0.25	Total		100.00	<table> <tr><td>Fused Silica</td><td>60676-86-0</td><td>88.50</td></tr> <tr><td>Epoxy Resin</td><td>Trade Secret</td><td>6.50</td></tr> <tr><td>Phenol Resin</td><td>Trade Secret</td><td>4.75</td></tr> <tr><td>Carbon Black</td><td>1333-86-4</td><td>0.25</td></tr> <tr><td colspan="2">Total</td><td>100.00</td></tr> </table>	Fused Silica	60676-86-0	88.50	Epoxy Resin	Trade Secret	6.50	Phenol Resin	Trade Secret	4.75	Carbon Black	1333-86-4	0.25	Total		100.00												
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Copper	7440-50-8	Lead Frame	25.658	143.043	256.579																																																																												
Nickel	7440-02-0	Lead Frame	0.684	3.815	6.843																																																																												
Silver	7440-22-4	Lead Frame	0.450	2.507	4.496																																																																												
Silicon	7440-21-3	Lead Frame	0.121	0.676	1.212																																																																												
Magnesium	7439-95-4	Lead Frame	0.027	0.150	269																																																																												
Silver	7440-22-4	Die Attach	0.059	0.328	588	<table> <tr><td>Copper</td><td>7440-50-8</td><td>95.24</td></tr> <tr><td>Nickel</td><td>7440-02-0</td><td>2.54</td></tr> <tr><td>Silver</td><td>7440-22-4</td><td>1.67</td></tr> <tr><td>Silicon</td><td>7440-21-3</td><td>0.45</td></tr> <tr><td>Magnesium</td><td>7439-95-4</td><td>0.10</td></tr> <tr><td colspan="2">Total</td><td>100.00</td></tr> </table>	Copper	7440-50-8	95.24	Nickel	7440-02-0	2.54	Silver	7440-22-4	1.67	Silicon	7440-21-3	0.45	Magnesium	7439-95-4	0.10	Total		100.00	<table> <tr><td>Copper</td><td>7440-50-8</td><td>95.24</td></tr> <tr><td>Nickel</td><td>7440-02-0</td><td>2.54</td></tr> <tr><td>Silver</td><td>7440-22-4</td><td>1.67</td></tr> <tr><td>Silicon</td><td>7440-21-3</td><td>0.45</td></tr> <tr><td>Magnesium</td><td>7439-95-4</td><td>0.10</td></tr> <tr><td colspan="2">Total</td><td>100.00</td></tr> </table>	Copper	7440-50-8	95.24	Nickel	7440-02-0	2.54	Silver	7440-22-4	1.67	Silicon	7440-21-3	0.45	Magnesium	7439-95-4	0.10	Total		100.00	<table> <tr><td>Copper</td><td>7440-50-8</td><td>95.24</td></tr> <tr><td>Nickel</td><td>7440-02-0</td><td>2.54</td></tr> <tr><td>Silver</td><td>7440-22-4</td><td>1.67</td></tr> <tr><td>Silicon</td><td>7440-21-3</td><td>0.45</td></tr> <tr><td>Magnesium</td><td>7439-95-4</td><td>0.10</td></tr> <tr><td colspan="2">Total</td><td>100.00</td></tr> </table>	Copper	7440-50-8	95.24	Nickel	7440-02-0	2.54	Silver	7440-22-4	1.67	Silicon	7440-21-3	0.45	Magnesium	7439-95-4	0.10	Total		100.00	<table> <tr><td>Copper</td><td>7440-50-8</td><td>95.24</td></tr> <tr><td>Nickel</td><td>7440-02-0</td><td>2.54</td></tr> <tr><td>Silver</td><td>7440-22-4</td><td>1.67</td></tr> <tr><td>Silicon</td><td>7440-21-3</td><td>0.45</td></tr> <tr><td>Magnesium</td><td>7439-95-4</td><td>0.10</td></tr> <tr><td colspan="2">Total</td><td>100.00</td></tr> </table>	Copper	7440-50-8	95.24	Nickel	7440-02-0	2.54	Silver	7440-22-4	1.67	Silicon	7440-21-3	0.45	Magnesium	7439-95-4	0.10	Total		100.00
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Epoxy Resin	Trade secret	Die Attach	0.011	0.062	112																																																																												
Silicon	7440-21-3	Chip (Die)	4.760	26.537	47,600																																																																												
Copper	7440-50-8	Wire Bond Copper palladium coated (CuPd)	0.246	1.369	2,456																																																																												
Palladium	7440-05-3	Wire Bond Copper palladium coated (CuPd)	0.004	0.024	44																																																																												
Tin	7440-31-5	Plating on external leads (pins) - Matte Tin / annealed at 150°C for 1 hour	1.160	6.467	11,600	<table> <tr><td>Silver</td><td>7440-22-4</td><td>84.00</td></tr> <tr><td>Epoxy Resin</td><td>Trade secret</td><td>16.00</td></tr> <tr><td colspan="2">Total</td><td>100.00</td></tr> </table>	Silver	7440-22-4	84.00	Epoxy Resin	Trade secret	16.00	Total		100.00	<table> <tr><td>Silver</td><td>7440-22-4</td><td>84.00</td></tr> <tr><td>Epoxy Resin</td><td>Trade secret</td><td>16.00</td></tr> <tr><td colspan="2">Total</td><td>100.00</td></tr> </table>	Silver	7440-22-4	84.00	Epoxy Resin	Trade secret	16.00	Total		100.00	<table> <tr><td>Silver</td><td>7440-22-4</td><td>84.00</td></tr> <tr><td>Epoxy Resin</td><td>Trade secret</td><td>16.00</td></tr> <tr><td colspan="2">Total</td><td>100.00</td></tr> </table>	Silver	7440-22-4	84.00	Epoxy Resin	Trade secret	16.00	Total		100.00	<table> <tr><td>Silver</td><td>7440-22-4</td><td>84.00</td></tr> <tr><td>Epoxy Resin</td><td>Trade secret</td><td>16.00</td></tr> <tr><td colspan="2">Total</td><td>100.00</td></tr> </table>	Silver	7440-22-4	84.00	Epoxy Resin	Trade secret	16.00	Total		100.00																																				
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TOTALS:			100.000	557.500	1,000,000																																																																												
0.5575 g Total Mass																																																																																	
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 2000/53/EC and 2016/774/EU (End-of-Life Vehicles (ELV) without exemption (zero))																																																																																	
Compliance with the above EU Directives has been verified via internal design controls, supplier declarations, and /or analytical test data.																																																																																	
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.																																																																																	
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 http://ul.com/global/eng/pages/offerings/industries/chemicals/plastics/																																																																																	
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.																																																																																	
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.																																																																																	
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Assembled package referenced above is EU REACH compliant based on the latest SVHC candidate list of ECHA which can be found at http://echa.europa.eu/web/guest/candidate-list-table																																																																																	
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