



Semiconductor Device Type: SS / SI (N2X) 028 SSOP .209in 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									
Silica, vitreous	60676-86-0	Mold Compound	67.830	155.466	678.300	182.90	(mg) Total	Mold Compound	% of Total Weight	79.8				
Epoxy Resin (No bromine, No diantimony trioxide)	Trade Secret	Mold Compound	4.888	11.203	48.878									
Phenolic Resin (No Br / CL SbO3, No diantimony trioxide)	Trade Secret	Mold Compound	4.888	11.203	48.878									
Epoxy, Cresol Novolac	29690-82-2	Mold Compound	1.955	4.481	19.551									
Carbon Black	1333-86-4	Mold Compound	0.239	0.549	2.394									
Copper	7440-50-8	Lead Frame	10.031	22.992	100.314									
Iron	7439-89-6	Lead Frame	0.247	0.566	2.468									
Silver	7440-22-4	Lead Frame	0.200	0.458	2.000									
Zinc	7440-66-6	Lead Frame	0.013	0.030	1.31									
Phosphorous	7723-14-0	Lead Frame	0.009	0.020	87									
Silver (Ag)	7440-22-4	Die Attach	0.563	1.289	5.625	24.07	(mg) Total	Lead Frame	% of Total Weight	10.5				
Modified Epoxy Resin	13561-08-5	Die Attach	0.105	0.241	1.050									
Diglycidylether of bisphenol-F	54208-63-8	Die Attach	0.056	0.129	563									
Modified Amine	827-43-0	Die Attach	0.026	0.060	263									
Silicon	7440-21-3	Chip (Die)	7.500	17.190	75.000									
Gold	7440-57-5	Wire Bond	0.200	0.458	2.000									
Tin	7440-31-5	Plating on external leads (pins) - Matte Tin / annealed at 150°C for 1 hour	1.250	2.856	12.500									
<b>TOTALS:</b>			<b>100.000</b>	<b>229.200</b>	<b>1,000,000</b>									
<b>0.2292 g Total Mass</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)

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/offering/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>

182.90	(mg) Total	Mold Compound	% of Total Weight	79.8																		
<table border="1"> <tr> <td>Silica, vitreous</td> <td>60676-86-0</td> <td>85.00</td> </tr> <tr> <td>Epoxy Resin</td> <td>Trade Secret</td> <td>6.13</td> </tr> <tr> <td>Phenolic Resin</td> <td>Trade Secret</td> <td>6.13</td> </tr> <tr> <td>Epoxy, Cresol Novolac</td> <td>29690-82-2</td> <td>2.45</td> </tr> <tr> <td>Carbon Black</td> <td>1333-86-4</td> <td>0.30</td> </tr> <tr> <td colspan="2" style="text-align: right;"><b>Total</b></td> <td><b>100.00</b></td> </tr> </table>					Silica, vitreous	60676-86-0	85.00	Epoxy Resin	Trade Secret	6.13	Phenolic Resin	Trade Secret	6.13	Epoxy, Cresol Novolac	29690-82-2	2.45	Carbon Black	1333-86-4	0.30	<b>Total</b>		<b>100.00</b>
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24.07	(mg) Total	Lead Frame	% of Total Weight	10.5																		
<table border="1"> <tr> <td>Copper</td> <td>7440-50-8</td> <td>95.54</td> </tr> <tr> <td>Iron</td> <td>7439-89-6</td> <td>2.35</td> </tr> <tr> <td>Silver</td> <td>7440-22-4</td> <td>1.91</td> </tr> <tr> <td>Zinc</td> <td>7440-66-6</td> <td>0.13</td> </tr> <tr> <td>Phosphorous</td> <td>7723-14-0</td> <td>0.08</td> </tr> <tr> <td colspan="2" style="text-align: right;"><b>Total</b></td> <td><b>100.00</b></td> </tr> </table>					Copper	7440-50-8	95.54	Iron	7439-89-6	2.35	Silver	7440-22-4	1.91	Zinc	7440-66-6	0.13	Phosphorous	7723-14-0	0.08	<b>Total</b>		<b>100.00</b>
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<b>Total</b>		<b>100.00</b>																				
1.72	(mg) Total	Die Attach	% of Total Weight	0.75																		
<table border="1"> <tr> <td>Silver (Ag)</td> <td>7440-22-4</td> <td>75.00</td> </tr> <tr> <td>Modified Epoxy Resin</td> <td>13561-08-5</td> <td>14.00</td> </tr> <tr> <td>Diglycidylether of bisphenol-F</td> <td>54208-63-8</td> <td>7.50</td> </tr> <tr> <td>Modified Amine</td> <td>827-43-0</td> <td>3.50</td> </tr> <tr> <td colspan="2" style="text-align: right;"><b>Total</b></td> <td><b>100.00</b></td> </tr> </table>					Silver (Ag)	7440-22-4	75.00	Modified Epoxy Resin	13561-08-5	14.00	Diglycidylether of bisphenol-F	54208-63-8	7.50	Modified Amine	827-43-0	3.50	<b>Total</b>		<b>100.00</b>			
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17.19	Total (mg)	Chip (Die)	% of Total Weight	7.5																		
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0.46	(mg) Total	Wire Bond	% of Total Weight	0.2																		
<table border="1"> <tr> <td>Doped Gold</td> <td>7440-57-5</td> <td>100.00</td> </tr> <tr> <td colspan="2" style="text-align: right;"><b>Total</b></td> <td><b>100.00</b></td> </tr> </table>					Doped Gold	7440-57-5	100.00	<b>Total</b>		<b>100.00</b>												
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<b>Total</b>		<b>100.00</b>																				
2.87	(mg) Total	Plating on external leads (pins) - Matte Tin / annealed at 150°C for 1 hour	% of Total Weight	1.25																		
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