MICROCHIP

Semiconductor Device Type: 3CX 20 MQFN 5x5x1.0mm Matte Tin

Termination Base Alloy: Copper Alloy (Cu)

Package Homogeneous Materials: 8.1 Electronics (e.g. pc boards, displays)

J-STD-609A Product Marking and/or Pkg. Labeling e3

Basic Substance	CAS Number	"Contained In" Sub-Component	% Total Weight	mg/part	ppm
Silica, fused	60676-86-0	Mold Compound	44.955	31.109	449,550
Epoxy Resin	Trade Secret	Mold Compound	2.423	1.676	24,226
Phenolic Resin	Trade Secret	Mold Compound	2.423	1.676	24,226
Carbon Black	1333-86-4	Mold Compound	0.150	0.104	1,499
Copper	7440-50-8	Lead Frame	42.025	29.081	420,248
Tin	7440-31-5	Lead Frame	0.108	0.075	1,079
Silver	7440-22-4	Lead Frame	0.822	0.569	8,218
Zinc	7440-66-6	Lead Frame	0.078	0.054	777
Chromium	7440-47-3	Lead Frame	0.108	0.075	1,079
SiO2 Filler	Trade Secret	Die Attach	0.711	0.492	7,107
Epoxy Resin	Trade Secret	Die Attach	0.359	0.248	3,588
Acrylic Copolymer	Trade Secret	Die Attach	0.215	0.149	2,153
Phenol Resin	Trade Secret	Die Attach	0.215	0.149	2,153
Silicon	7440-21-3	Chip (Die)	2.710	1.875	27,100
Gold	7440-57-5	Wire Bond	0.250	0.173	2,500
Tin	7440-31-5	Plating on external leads (pins) - Matte Tin / annealed at 150°C for 1 hour	2.450	1.695	24,500
		TOTALS:	**100.000**	**69.200**	**1,000,000**
	0.0692	**g Total Mass**			

34.57	(mg) Total	Mold Compound	% ot Total Weight	49.95
	Silica, fused	60676-86-0	90.00	
	Epoxy Resin	Trade Secret	4.85	
	Phenolic Resin	Trade Secret	4.85	
	Carbon Black	1333-86-4	0.30	
		Total	**100.00**	

29.85	(mg) Total	Lead Frame	% of Total Weight	43.14
	Copper	7440-50-8	97.42	
	Tin	7440-31-5	0.25	
	Silver	7440-22-4	1.91	
	Zinc	7440-66-6	0.18	
	Chromium	7440-47-3	0.25	
		Total	**100.00**	

1.04	(mg) Total	Die Attach	% of Total Weight	1.5
	SiO2 Filler	Trade Secret	47.38	
	Epoxy Resin	Trade Secret	23.92	
	Acrylic Copolymer	Trade Secret	14.35	
	Phenol Resin	Trade Secret	14.35	
		Total	**100.00**	

1.88	Total (mg)	Chip (Die)	% of Total Weight	2.71
	Doped Silicon	7440-21-3	100.00	
		Total	**100.00**	

0.17	(mg) Total	Wire Bond	% of Total Weight	0.25
	Gold	7440-57-5	100.00	
		Total	**100.00**	

1.70	(mg) Total	Plating on external leads (pins) - Matte Tin / annealed at 150°C for 1 hour	% of Total Weight	2.45
	Tin	7440-31-5	100.00	
		Total	**100.00**	

69.20 100.00

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/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