



			Termination Base Alloy: Copper Alloy (Cu)			Package Homogeneous Materials			J-STD-609A Product Marking and/or Pkg. Labeling e3																																																																																
Semiconductor Device Type: TYB 056 VQFN 7x7x0.9 Matte Tin																																																																																									
Basic Substance	CAS Number	"Contained In" Sub-Component	% Total Weight	mg/part	ppm	70.10	(mg) Total	Mold Compound	% of Total Weight	47.82																																																																															
Silica, vitreous (or fused)	60676-86-0	Mold Compound	40.647	59.589	406,470	<table><tr><td>Silica, vitreous (or fused)</td><td>60676-86-0</td><td>85.00</td></tr><tr><td>Epoxy Resin</td><td>Trade Secret</td><td>8.70</td></tr><tr><td>Phenolic Resin</td><td>Trade Secret</td><td>6.00</td></tr><tr><td>Carbon Black</td><td>1333-86-4</td><td>0.30</td></tr><tr><td colspan="2">Total</td><td>100.00</td></tr></table>	Silica, vitreous (or fused)	60676-86-0	85.00	Epoxy Resin	Trade Secret	8.70	Phenolic Resin	Trade Secret	6.00	Carbon Black	1333-86-4	0.30	Total		100.00	<table><tr><td colspan="2">(mg) Total</td><td>Lead Frame</td><td>% of Total Weight</td></tr><tr><td>Copper</td><td>7440-50-8</td><td>97.42</td></tr><tr><td>Silver</td><td>7440-22-4</td><td>1.91</td></tr><tr><td>Tin</td><td>7440-31-5</td><td>0.25</td></tr><tr><td>Chromium</td><td>7440-47-3</td><td>0.25</td></tr><tr><td>Zinc</td><td>7440-66-6</td><td>0.18</td></tr><tr><td colspan="2">Total</td><td>100.00</td></tr></table>	(mg) Total		Lead Frame	% of Total Weight	Copper	7440-50-8	97.42	Silver	7440-22-4	1.91	Tin	7440-31-5	0.25	Chromium	7440-47-3	0.25	Zinc	7440-66-6	0.18	Total		100.00	<table><tr><td colspan="2">(mg) Total</td><td>Die Attach</td><td>% of Total Weight</td></tr><tr><td>Silver</td><td>7440-22-4</td><td>82.90</td></tr><tr><td>Epoxy resin</td><td></td><td>17.10</td></tr><tr><td colspan="2">Total</td><td>100.00</td></tr></table>	(mg) Total		Die Attach	% of Total Weight	Silver	7440-22-4	82.90	Epoxy resin		17.10	Total		100.00	<table><tr><td colspan="2">Total (mg)</td><td>Dual Chip (Die)</td><td>% of Total Weight</td></tr><tr><td colspan="2">Doped Silicon</td><td>7440-21-3</td><td>100</td></tr><tr><td colspan="2">Total</td><td></td><td>100.00</td></tr></table>	Total (mg)		Dual Chip (Die)	% of Total Weight	Doped Silicon		7440-21-3	100	Total			100.00	<table><tr><td colspan="2">(mg) Total</td><td>Wire Bond</td><td>% of Total Weight</td></tr><tr><td>Copper</td><td>7440-50-8</td><td>97.90</td></tr><tr><td>Palladium</td><td>7440-05-3</td><td>2.00</td></tr><tr><td>Gold</td><td>7440-57-5</td><td>0.10</td></tr><tr><td colspan="2">Total</td><td></td><td>100.00</td></tr></table>	(mg) Total		Wire Bond	% of Total Weight	Copper	7440-50-8	97.90	Palladium	7440-05-3	2.00	Gold	7440-57-5	0.10	Total			100.00
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Epoxy Resin	Trade Secret	Mold Compound	4.160	6.099	41,603	68.36	<table><tr><td colspan="2">(mg) Total</td><td>Lead Frame</td><td>% of Total Weight</td></tr><tr><td>Copper</td><td>7440-50-8</td><td>97.42</td></tr><tr><td>Silver</td><td>7440-22-4</td><td>1.91</td></tr><tr><td>Tin</td><td>7440-31-5</td><td>0.25</td></tr><tr><td>Chromium</td><td>7440-47-3</td><td>0.25</td></tr><tr><td>Zinc</td><td>7440-66-6</td><td>0.18</td></tr><tr><td colspan="2">Total</td><td>100.00</td></tr></table>	(mg) Total		Lead Frame	% of Total Weight	Copper	7440-50-8	97.42	Silver	7440-22-4	1.91	Tin	7440-31-5	0.25	Chromium	7440-47-3	0.25	Zinc	7440-66-6	0.18	Total		100.00	<table><tr><td colspan="2">(mg) Total</td><td>Die Attach</td><td>% of Total Weight</td></tr><tr><td>Silver</td><td>7440-22-4</td><td>82.90</td></tr><tr><td>Epoxy resin</td><td></td><td>17.10</td></tr><tr><td colspan="2">Total</td><td>100.00</td></tr></table>	(mg) Total		Die Attach	% of Total Weight	Silver	7440-22-4	82.90	Epoxy resin		17.10	Total		100.00	<table><tr><td colspan="2">Total (mg)</td><td>Dual Chip (Die)</td><td>% of Total Weight</td></tr><tr><td colspan="2">Doped Silicon</td><td>7440-21-3</td><td>100</td></tr><tr><td colspan="2">Total</td><td></td><td>100.00</td></tr></table>	Total (mg)		Dual Chip (Die)	% of Total Weight	Doped Silicon		7440-21-3	100	Total			100.00	<table><tr><td colspan="2">(mg) Total</td><td>Wire Bond</td><td>% of Total Weight</td></tr><tr><td>Copper</td><td>7440-50-8</td><td>97.90</td></tr><tr><td>Palladium</td><td>7440-05-3</td><td>2.00</td></tr><tr><td>Gold</td><td>7440-57-5</td><td>0.10</td></tr><tr><td colspan="2">Total</td><td></td><td>100.00</td></tr></table>	(mg) Total		Wire Bond	% of Total Weight	Copper	7440-50-8	97.90	Palladium	7440-05-3	2.00	Gold	7440-57-5	0.10	Total			100.00															
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Silver	7440-22-4	Lead Frame	0.888	1.302	8,883	2.86	<table><tr><td colspan="2">(mg) Total</td><td>Plating on external leads (pins) - Matte Tin / annealed at 150°C for 1 hour</td><td>% of Total Weight</td></tr><tr><td colspan="2">Tin</td><td>7440-31-5</td><td>100.00</td></tr><tr><td colspan="2">Total</td><td></td><td>100.00</td></tr></table>	(mg) Total		Plating on external leads (pins) - Matte Tin / annealed at 150°C for 1 hour	% of Total Weight	Tin		7440-31-5	100.00	Total			100.00	<table><tr><td colspan="2">(mg) Total</td><td>Plating on external leads (pins) - Matte Tin / annealed at 150°C for 1 hour</td><td>% of Total Weight</td></tr><tr><td colspan="2">Tin</td><td>7440-31-5</td><td>100.00</td></tr><tr><td colspan="2">Total</td><td></td><td>100.00</td></tr></table>	(mg) Total		Plating on external leads (pins) - Matte Tin / annealed at 150°C for 1 hour	% of Total Weight	Tin		7440-31-5	100.00	Total			100.00	<table><tr><td colspan="2">(mg) Total</td><td>Plating on external leads (pins) - Matte Tin / annealed at 150°C for 1 hour</td><td>% of Total Weight</td></tr><tr><td colspan="2">Tin</td><td>7440-31-5</td><td>100.00</td></tr><tr><td colspan="2">Total</td><td></td><td>100.00</td></tr></table>	(mg) Total		Plating on external leads (pins) - Matte Tin / annealed at 150°C for 1 hour	% of Total Weight	Tin		7440-31-5	100.00	Total			100.00																																												
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Chromium	7440-47-3	Lead Frame	0.117	0.171	1,166	3.08	<table><tr><td colspan="2">(mg) Total</td><td>Wire Bond</td><td>% of Total Weight</td></tr><tr><td>Copper</td><td>7440-50-8</td><td>97.90</td></tr><tr><td>Palladium</td><td>7440-05-3</td><td>2.00</td></tr><tr><td>Gold</td><td>7440-57-5</td><td>0.10</td></tr><tr><td colspan="2">Total</td><td></td><td>100.00</td></tr></table>	(mg) Total		Wire Bond	% of Total Weight	Copper	7440-50-8	97.90	Palladium	7440-05-3	2.00	Gold	7440-57-5	0.10	Total			100.00	<table><tr><td colspan="2">(mg) Total</td><td>Wire Bond</td><td>% of Total Weight</td></tr><tr><td>Copper</td><td>7440-50-8</td><td>97.90</td></tr><tr><td>Palladium</td><td>7440-05-3</td><td>2.00</td></tr><tr><td>Gold</td><td>7440-57-5</td><td>0.10</td></tr><tr><td colspan="2">Total</td><td></td><td>100.00</td></tr></table>	(mg) Total		Wire Bond	% of Total Weight	Copper	7440-50-8	97.90	Palladium	7440-05-3	2.00	Gold	7440-57-5	0.10	Total			100.00	<table><tr><td colspan="2">(mg) Total</td><td>Wire Bond</td><td>% of Total Weight</td></tr><tr><td>Copper</td><td>7440-50-8</td><td>97.90</td></tr><tr><td>Palladium</td><td>7440-05-3</td><td>2.00</td></tr><tr><td>Gold</td><td>7440-57-5</td><td>0.10</td></tr><tr><td colspan="2">Total</td><td></td><td>100.00</td></tr></table>	(mg) Total		Wire Bond	% of Total Weight	Copper	7440-50-8	97.90	Palladium	7440-05-3	2.00	Gold	7440-57-5	0.10	Total			100.00																													
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Zinc	7440-66-6	Lead Frame	0.084	0.123	839	0.81	<table><tr><td colspan="2">(mg) Total</td><td>Die Attach</td><td>% of Total Weight</td></tr><tr><td>Silver</td><td>7440-22-4</td><td>82.90</td></tr><tr><td>Epoxy resin</td><td></td><td>17.10</td></tr><tr><td colspan="2">Total</td><td>100.00</td></tr></table>	(mg) Total		Die Attach	% of Total Weight	Silver	7440-22-4	82.90	Epoxy resin		17.10	Total		100.00	<table><tr><td colspan="2">(mg) Total</td><td>Die Attach</td><td>% of Total Weight</td></tr><tr><td>Silver</td><td>7440-22-4</td><td>82.90</td></tr><tr><td>Epoxy resin</td><td></td><td>17.10</td></tr><tr><td colspan="2">Total</td><td>100.00</td></tr></table>	(mg) Total		Die Attach	% of Total Weight	Silver	7440-22-4	82.90	Epoxy resin		17.10	Total		100.00	<table><tr><td colspan="2">Total (mg)</td><td>Dual Chip (Die)</td><td>% of Total Weight</td></tr><tr><td colspan="2">Doped Silicon</td><td>7440-21-3</td><td>100</td></tr><tr><td colspan="2">Total</td><td></td><td>100.00</td></tr></table>	Total (mg)		Dual Chip (Die)	% of Total Weight	Doped Silicon		7440-21-3	100	Total			100.00	<table><tr><td colspan="2">(mg) Total</td><td>Wire Bond</td><td>% of Total Weight</td></tr><tr><td>Copper</td><td>7440-50-8</td><td>97.90</td></tr><tr><td>Palladium</td><td>7440-05-3</td><td>2.00</td></tr><tr><td>Gold</td><td>7440-57-5</td><td>0.10</td></tr><tr><td colspan="2">Total</td><td></td><td>100.00</td></tr></table>	(mg) Total		Wire Bond	% of Total Weight	Copper	7440-50-8	97.90	Palladium	7440-05-3	2.00	Gold	7440-57-5	0.10	Total			100.00																								
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Epoxy resin	0	Die Attach	0.094	0.138	941	1.39	<table><tr><td colspan="2">(mg) Total</td><td>Wire Bond</td><td>% of Total Weight</td></tr><tr><td>Copper</td><td>7440-50-8</td><td>97.90</td></tr><tr><td>Palladium</td><td>7440-05-3</td><td>2.00</td></tr><tr><td>Gold</td><td>7440-57-5</td><td>0.10</td></tr><tr><td colspan="2">Total</td><td></td><td>100.00</td></tr></table>	(mg) Total		Wire Bond	% of Total Weight	Copper	7440-50-8	97.90	Palladium	7440-05-3	2.00	Gold	7440-57-5	0.10	Total			100.00	<table><tr><td colspan="2">(mg) Total</td><td>Wire Bond</td><td>% of Total Weight</td></tr><tr><td>Copper</td><td>7440-50-8</td><td>97.90</td></tr><tr><td>Palladium</td><td>7440-05-3</td><td>2.00</td></tr><tr><td>Gold</td><td>7440-57-5</td><td>0.10</td></tr><tr><td colspan="2">Total</td><td></td><td>100.00</td></tr></table>	(mg) Total		Wire Bond	% of Total Weight	Copper	7440-50-8	97.90	Palladium	7440-05-3	2.00	Gold	7440-57-5	0.10	Total			100.00	<table><tr><td colspan="2">(mg) Total</td><td>Wire Bond</td><td>% of Total Weight</td></tr><tr><td>Copper</td><td>7440-50-8</td><td>97.90</td></tr><tr><td>Palladium</td><td>7440-05-3</td><td>2.00</td></tr><tr><td>Gold</td><td>7440-57-5</td><td>0.10</td></tr><tr><td colspan="2">Total</td><td></td><td>100.00</td></tr></table>	(mg) Total		Wire Bond	% of Total Weight	Copper	7440-50-8	97.90	Palladium	7440-05-3	2.00	Gold	7440-57-5	0.10	Total			100.00																													
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Silicon	7440-21-3	Dual Chip (Die)	2.100	3.079	21,000	3.08	<table><tr><td colspan="2">(mg) Total</td><td>Wire Bond</td><td>% of Total Weight</td></tr><tr><td>Copper</td><td>7440-50-8</td><td>97.90</td></tr><tr><td>Palladium</td><td>7440-05-3</td><td>2.00</td></tr><tr><td>Gold</td><td>7440-57-5</td><td>0.10</td></tr><tr><td colspan="2">Total</td><td></td><td>100.00</td></tr></table>	(mg) Total		Wire Bond	% of Total Weight	Copper	7440-50-8	97.90	Palladium	7440-05-3	2.00	Gold	7440-57-5	0.10	Total			100.00	<table><tr><td colspan="2">(mg) Total</td><td>Wire Bond</td><td>% of Total Weight</td></tr><tr><td>Copper</td><td>7440-50-8</td><td>97.90</td></tr><tr><td>Palladium</td><td>7440-05-3</td><td>2.00</td></tr><tr><td>Gold</td><td>7440-57-5</td><td>0.10</td></tr><tr><td colspan="2">Total</td><td></td><td>100.00</td></tr></table>	(mg) Total		Wire Bond	% of Total Weight	Copper	7440-50-8	97.90	Palladium	7440-05-3	2.00	Gold	7440-57-5	0.10	Total			100.00	<table><tr><td colspan="2">(mg) Total</td><td>Wire Bond</td><td>% of Total Weight</td></tr><tr><td>Copper</td><td>7440-50-8</td><td>97.90</td></tr><tr><td>Palladium</td><td>7440-05-3</td><td>2.00</td></tr><tr><td>Gold</td><td>7440-57-5</td><td>0.10</td></tr><tr><td colspan="2">Total</td><td></td><td>100.00</td></tr></table>	(mg) Total		Wire Bond	% of Total Weight	Copper	7440-50-8	97.90	Palladium	7440-05-3	2.00	Gold	7440-57-5	0.10	Total			100.00																													
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Palladium	7440-05-3	2.00																																																																																							
Gold	7440-57-5	0.10																																																																																							
Total			100.00																																																																																						
Tin	7440-31-5	Plating on external leads (pins) - Matte Tin / annealed at 150°C for 1 hour	1.950	2.859	19,500	3.08	<table><tr><td colspan="2">(mg) Total</td><td>Wire Bond</td><td>% of Total Weight</td></tr><tr><td>Copper</td><td>7440-50-8</td><td>97.90</td></tr><tr><td>Palladium</td><td>7440-05-3</td><td>2.00</td></tr><tr><td>Gold</td><td>7440-57-5</td><td>0.10</td></tr><tr><td colspan="2">Total</td><td></td><td>100.00</td></tr></table>	(mg) Total		Wire Bond	% of Total Weight	Copper	7440-50-8	97.90	Palladium	7440-05-3	2.00	Gold	7440-57-5	0.10	Total			100.00	<table><tr><td colspan="2">(mg) Total</td><td>Wire Bond</td><td>% of Total Weight</td></tr><tr><td>Copper</td><td>7440-50-8</td><td>97.90</td></tr><tr><td>Palladium</td><td>7440-05-3</td><td>2.00</td></tr><tr><td>Gold</td><td>7440-57-5</td><td>0.10</td></tr><tr><td colspan="2">Total</td><td></td><td>100.00</td></tr></table>	(mg) Total		Wire Bond	% of Total Weight	Copper	7440-50-8	97.90	Palladium	7440-05-3	2.00	Gold	7440-57-5	0.10	Total			100.00	<table><tr><td colspan="2">(mg) Total</td><td>Wire Bond</td><td>% of Total Weight</td></tr><tr><td>Copper</td><td>7440-50-8</td><td>97.90</td></tr><tr><td>Palladium</td><td>7440-05-3</td><td>2.00</td></tr><tr><td>Gold</td><td>7440-57-5</td><td>0.10</td></tr><tr><td colspan="2">Total</td><td></td><td>100.00</td></tr></table>	(mg) Total		Wire Bond	% of Total Weight	Copper	7440-50-8	97.90	Palladium	7440-05-3	2.00	Gold	7440-57-5	0.10	Total			100.00																													
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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 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://lq.ul.com/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.																																																																																									
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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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