IOR International Rectifier



PQFN 4X6

RoHS Compliance Document

Contents:

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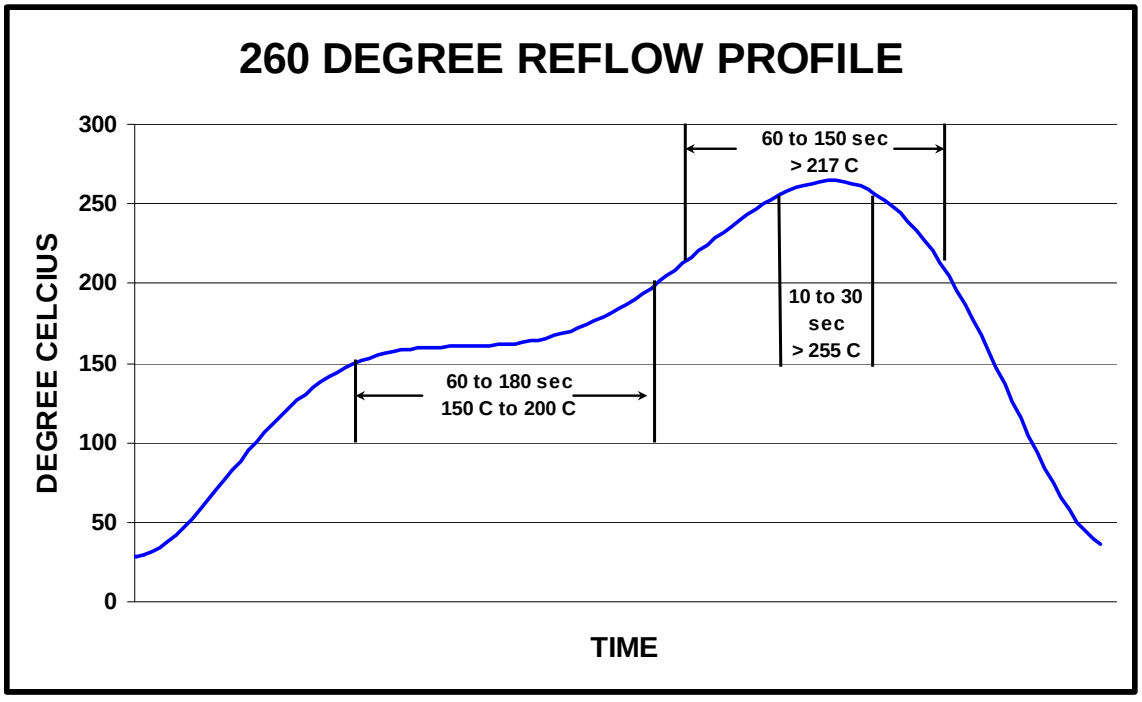
PQFN 4X6 Copper Clip BOM 1

Component	Material Name	Material Mass (g)	Element Name Composition	CAS #	Substance Mass (g)	Material Analysis Weight (%)	% of Total Weight
Chip	Silicon	0.00201	Si	7440-21-3	0.00201	100%	3.1%
Encapsulant	Epoxy Resin	0.03071	SiO2	7631-86-9	0.01996	65%	30.8%
			Epoxy Resin	90598-46-2	0.01075	35%	16.6%
Lead Frame	Copper	0.01840	Cu	7440-50-8	0.01785	97%	27.6%
			Fe	7439-89-6	0.00055	3%	0.8%
Die Attach	Soft Solder	0.00082	Pb	7439-92-1	0.00080	95%	1.2%
			Sn	7440-31-5	0.00002	5%	0.0%
Wire bond	Gold	0.00050	Au	7440-57-5	0.00050	100%	0.8%
Clip	Copper	0.00995	Cu	7440-50-8	0.00995	100%	15.4%
Lead Finish	Matte Tin	0.00235	Sn	7440-31-5	0.00235	100%	3.6%
			Total Weight (g)		**0.06474**		

* Tin whisker mitigation strategy is 150 C, 1 hour anneal within 24 hours of tin plating.



This part is compliant with EU Directive 2011/65/EU (RoHS) and does not contain lead, mercury, cadmium (0.01%), hexavalent chromium, PBB or PBDE in concentrations greater than 0.1%, except as permitted by Annex (7).

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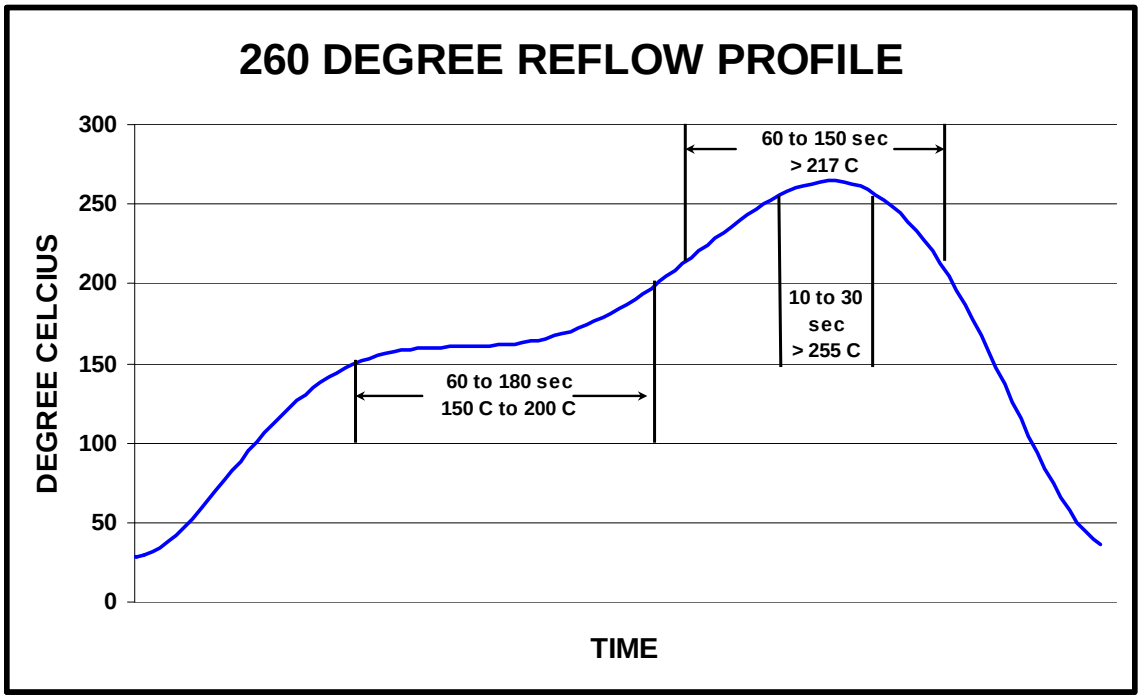
PQFN 4X6 Copper Clip BOM 2

Component	Material Name	Material Mass (g)	Element Name Composition	CAS #	Substance Mass (g)	Material Analysis Weight (%)	% of Total Weight
Chip	Silicon	0.00201	Si	7440-21-3	0.00201	100%	3.1%
Encapsulant	Epoxy Resin	0.03071	SiO2	7631-86-9	0.01996	65%	30.8%
			Epoxy Resin	90598-46-2	0.01075	35%	16.6%
Lead Frame	Copper	0.01840	Cu	7440-50-8	0.01785	97%	27.6%
			Fe	7439-89-6	0.00055	3%	0.8%
Die Attach	Soft Solder	0.00082	Pb	7439-92-1	0.00076	92.5%	1.2%
			Sn	7440-31-5	0.00004	5%	0.06%
			Ag	7440-22-4	0.00002	2.5%	0.03%
Wire bond	Gold	0.00050	Au	7440-57-5	0.00050	100%	0.8%
Clip	Copper	0.00995	Cu	7440-50-8	0.00995	100%	15.4%
Lead Finish	Matte Tin	0.00235	Sn	7440-31-5	0.00235	100%	3.6%
			Total Weight (g)		**0.06474**		

* Tin whisker mitigation strategy is 150 C, 1 hour anneal within 24 hours of tin plating.



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PQFN 4X6 Copper Clip

Test Definition	Test Conditions	Inspection Interval Class 1 and 2 Products	Total Duration Class 1 and 2 Products	Maximum Whisker Length (um)
Room Temperature Humidity Storage	30± 2°C/60± 3%RH	1000 hours	4000 hours	20
Temperature Humidity Unbiased	55± 3°C/85±3% RH	1000 hours	4000 hours	20
Temperature Cycling	-40 to 55°C to 80 to 95°C, air to air, 10 min soak, approx 3 cycles /hours	500 cycles	1500 cycles	45

Tin Whisker testing per JESD201, Environmental Acceptance Requirements for Tin Whisker Susceptibility of Tin and Tin Alloy Surface Finish

Tin Whisker Results (number of failing whiskers)

Test	1000 Hours	2000 Hours	3000 Hours	4000 Hours
Room Temperature Humidity Storage	0/24	0/24	0/24	0/24
Temperature Humidity Unbiased	0/24	0/24	0/24	0/24
Test	**500 Cycles**	**1000 Cycles**	**1500 Cycles**	
Temperature Cycling	0/24	0/24	0/24	

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