



## **D2-Pak Long Lead**

# **RoHS Compliance Document**

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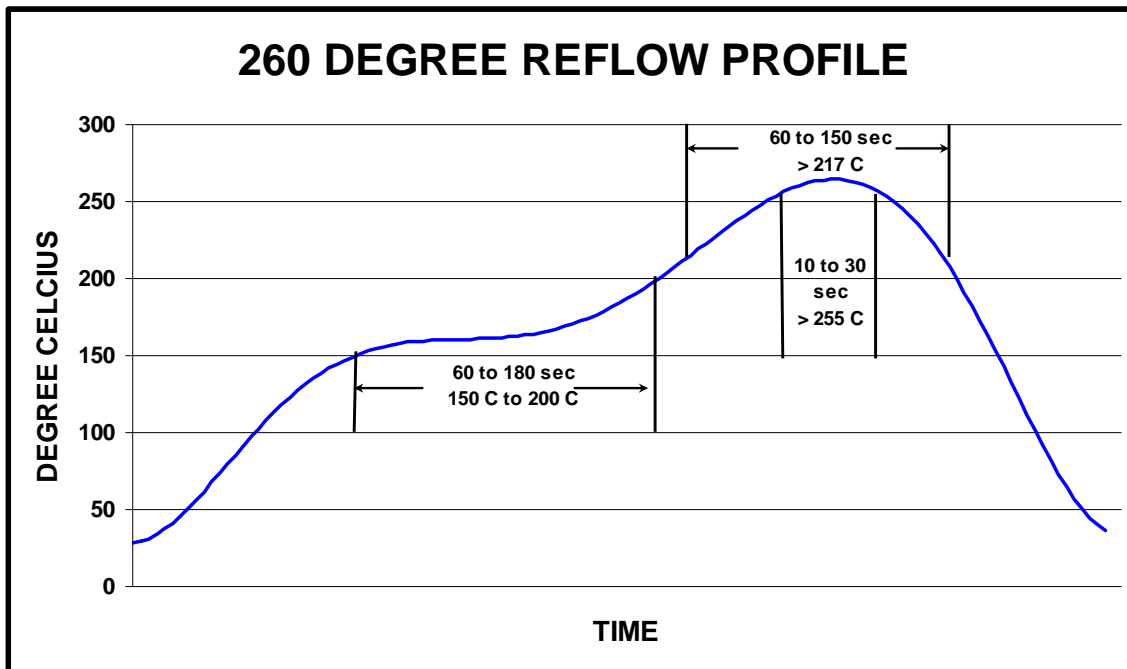
1. Composition
2. Solder Reflow
3. Tin Whisker Report



**D2-pak Long Lead**

Component	Material Name	Material Mass (g)	Substance Name	CAS Number	Substance Mass (g)	Material Analysis Weight (%)	% of Total Weight
Chip	Silicon	0.01900	Si	7440-21-3	0.01900	100%	1.3%
Encapsulant	Epoxy Resin	0.52800	SiO2	7631-86-9	0.46992	89%	31.0%
			Epoxy	90598-46-2	0.05808	11%	3.8%
Lead Frame	Copper	0.99582	Cu	7440-50-8	0.99482	100%	62.4%
			Sn	7440-31-5	0.00100	0%	0.1%
Die Attach	Soft Solder	0.01200	Pb	9439-92-1	0.01080	90%	0.7%
			In	7440-74-6	0.00060	5%	0.0%
			Ag	7440-22-4	0.00060	5%	0.0%
Wire bond	Aluminum	0.00660	Al	7429-90-5	0.00660	100%	0.4%
Lead Finish	Matte Tin over Nickel*	0.00640	Sn	7440-31-5	0.00550	86%	0.2%
			Ni	7440-02-0	0.00090	14%	0.0%
<b>MSL1 at 260 C</b>		Total Weight (g)		<b>1.56782</b>			

Tin whisker mitigation strategy is nickel under-plate.



This part is compliant with EU Directive 2002/95/EC (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).



**D2-pak Long Lead**

<b>Test Definition</b>	<b>Test Conditions</b>	<b>Inspection Interval Class 1 and 2 Products</b>	<b>Total Duration Class 1 and 2 Products</b>	<b>Maximum Whisker Length (um)</b>
<b>Room Temperature Humidity Storage</b>	30± 2°C/60± 3%RH	1000 hours	4000 hours	20
<b>Temperature Humidity Unbiased</b>	55± 3°C/85±3% RH	1000 hours	4000 hours	20
<b>Temperature Cycling</b>	-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)

<b>Test</b>	<b>1000 Hours</b>	<b>2000 Hours</b>	<b>3000 Hours</b>	<b>4000 Hours</b>
<b>Room Temperature Humidity Storage</b>	0/60	0/60	0/60	0/60
<b>Temperature Humidity Unbiased</b>	0/60	0/60	0/60	0/60
<b>Test</b>	<b>500 Cycles</b>	<b>1000 Cycles</b>	<b>1500 Cycles</b>	
<b>Temperature Cycling</b>	0/60	0/60	0/60	