Freescale Semiconductor Inc

PART INFORMATION	
Mfg Item Number	MC33HB2001FKR2
Mfg Item Name	PWR QFN 32 8SQ*2.1P0.8

SUPPLIER	
Company Name	Freescale Semiconductor Inc
Company Unique ID	14-141-7928
Response Date	2015-10-09
Response Document ID	6178K10884D007A1.0
Contact Name	Freescale Semiconductor Inc
Contact Title	Product Technical Support
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Representative Title	EPP Customer Response
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Representative Email	eppanlst@freescale.com
URL for Additional Information	www.freescale.com

DECLARATION	
EU RoHS	Yes
Pb Free	No
HalogenFree	Yes
Plating Indicator	e4
EU RoHS Exemption(s)	7a

MANUFACTURING	
Mfg Item Number	MC33HB2001FKR2
Mfg Item Name	PWR QFN 32 8SQ*2.1P0.8
Version	ALL
Weight	0.373050
UoM	g
Unit Volume	EACH
J-STD-020 MSL Rating	3
Peak Processing Temperature	260 C
Max Time at Peak Temperature	40 seconds
Number of Processing Cycles	3

RoHS	
RoHS Directive	2011/65/EU
RoHS Definition	RoHS Definition: Quantity limit of 0.1% by mass (1000 PPM) of homogeneous material for: Lead (Pb), Mercury, Hexavalent Chromium, Polybrominated Biphenyls (PBB), Polybrominated Diphenyl Ethers (PBDE) and quantity limit of 0.01% by mass (100 PPM) of homogeneous material of Cadmium
RoHS Legal Definition	Please indicate whether any homogeneous material (as defined by the RoHS Directive, EU 2011/65/EU and implemented by the laws of the European Union member states) of the part(s) identified on this form contains lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls and/or polybrominated diphenyl ethers (each a RoHS restricted substance) in excess of the applicable quantity limit identified below. If a homogeneous material within the part(s) contains a RoHS restricted substance in excess of an applicable quantity limit, please indicate below which, if any, RoHS exemption you believe may apply. If the part is an assembly with lower level components, the declaration shall encompass all such components. Supplier certifies that it gathered the information it provides in this form using appropriate methods to ensure its accuracy and that such information is true and correct to the best of its knowledge and belief, as of the date that Supplier completes this form. Supplier acknowledges that Company will rely on this certification in determining the compliance of its products with European Union member state laws that implement the RoHS Directive. Company acknowledges that Supplier may have relied on information provided by others in completing this form, and that Supplier may not have independently verified such information. However, in situations where Supplier has not independently verified information provided by others, Supplier agrees that, at a minimum, its suppliers have provided certifications regarding their contributions to the part(s), and those certifications are at least as comprehensive as the certification in this paragraph. If the Company and the Supplier enter into a written agreement with respect to the identified part(s),the terms and conditions of that agreement, including any warranty rights and/or remedies provided as part of that agreement, will be the sole and exclusive source of the Suppliers liability and the Companys remedies for issues that arise regarding information the Supplier provides in this form. In the absence of such written agreement, the warranty rights and/or remedies of Suppliers Standard Terms and Conditions of Sale applicable to such part(s) shall apply.
RoHS Declaration	4 - Item(s) does not contain RoHS restricted substances per the definition above except for selected exemptions
Supplier Acceptance	Accepted
Signature	Daniel Binyon
Exemption List Version	2012/51/EU
Exemptions in this part	7a:Lead in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead)
List of Freescale Accepted Exemptions	6(a) : Lead as an alloying element in steel for machining purposes and in galvanized steel containing up to 0.35% lead by weight 6(b) : Lead as an alloying element in aluminium containing up to 0.4% lead by weight 6(c) : Copper alloy containing up to 4% lead by weight 7(a) : Lead in high melting temperature type solders (i.e. lead-based alloys containing 85% by weight or more lead) 7(b) : Lead in solders for servers, storage and storage array systems, network infrastructure equipment for switching, signaling, transmission, and network management for telecommunications 7(c)-I : Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. piezoelectronic devices, or in a glass or ceramic matrix compound 7(c)-II : Lead in dielectric ceramic in capacitors for a rated voltage of 125 V AC or 250 V DC or higher 7(c)-III : Lead in dielectric ceramic in capacitors for a rated voltage of less than 125 V AC or 250 V DC 7(c)-IV : Lead in PZT based dielectric ceramic materials for capacitors being part of integrated circuits or discrete semiconductors 15 : Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit flip chip packages

MATERIAL COMPOSITION

Homogeneous Material	Weight	SubstanceClass	Substance	CAS	Exemption	SubstanceWeight	UoM	SubPart PPM	SubPart%		ARTICLEPPM	ARTICLE%
Solder Die Attach	0.07865				7a		g					
Solder Die Attach		Antimony/Antimony Compounds	Antimony (metallic)	7440-36-0		0.00000142	g	18	0.0018		3	0.0003
Solder Die Attach		Arsenic/Arsenic Compounds	Arsenic	7440-38-2		0.00000047	g	6	0.0006		1	0.0001
Solder Die Attach		Lead/Lead Compounds	Lead	7439-92-1		0.06921436	g	880030	88.003		185536	18.5536
Solder Die Attach		Metals	Silver, metal	7440-22-4		0.00157229	g	19991	1.9991		4214	0.4214
Solder Die Attach		Metals	Tin, metal	7440-31-5		0.00786146	g	99955	9.9955		21073	2.1073
Die Encapsulant	0.2697						g					
Die Encapsulant		Bismuth/Bismuth Compounds	Bismuth	7440-69-9		0.00269026	g	9975	0.9975		7211	0.7211
Die Encapsulant		Plastics/polymers	Proprietary Material-Other Epoxy resins	-		0.02017707	g	74813	7.4813		54086	5.4086
Die Encapsulant		Solvents, additives, and other materials	Carbon Black	1333-86-4		0.00080721	g	2993	0.2993		2163	0.2163
Die Encapsulant		Solvents, additives, and other materials	Other organic phosphorous compounds	-		0.00255568	g	9476	0.9476		6850	0.685
Die Encapsulant		Plastics/polymers	Proprietary Material-Other phenolic resins	-		0.01479655	g	54863	5.4863		39663	3.9663
Die Encapsulant		Glass	Silica, vitreous	60676-86-0		0.22867323	g	847880	84.788		612999	61.2999
Copper Lead Frame	0.0086						g					
Copper Lead Frame		Metals	Copper, metal	7440-50-8		0.00819724	g	953167	95.3167		21973	2.1973
Copper Lead Frame		Metals	Gold, metal	7440-57-5		0.00000245	g	285	0.0285		6	0.0006
Copper Lead Frame		Metals	Iron, metal	7439-89-6		0.00019859	g	23092	2.3092		532	0.0532
Copper Lead Frame		Lead/Lead Compounds	Lead	7439-92-1		0.00000144	g	167	0.0167		3	0.0003
Copper Lead Frame		Nickel (external applications only)	Nickel	7440-02-0		0.00017155	g	19948	1.9948		459	0.0459
Copper Lead Frame		Metals	Palladium, metal	7440-05-3		0.00001817	g	2113	0.2113		48	0.0048
Copper Lead Frame		Metals	Zinc, metal	7440-66-6		0.00001056	g	1228	0.1228		28	0.0028
Bonding Wire, Other	0.0035						g					
Bonding Wire, Other		Metals	Copper, metal	7440-50-8		0.0034545	g	987000	98.7		9260	0.926
Bonding Wire, Other		Metals	Palladium, metal	7440-05-3		0.0000455	g	13000	1.3		121	0.0121
Copper Lead Frame	0.0086						g					
Copper Lead Frame		Metals	Copper, metal	7440-50-8		0.00774632	g	900735	90.0735		20764	2.0764
Copper Lead Frame		Metals	Gold, metal	7440-57-5		0.00001239	g	1441	0.1441		33	0.0033
Copper Lead Frame		Solvents, additives, and other materials	Phosphorus, elemental (not containing red allotrope)	7723-14-0		0.00002478	g	2881	0.2881		66	0.0066
Copper Lead Frame		Metals	Iron, metal	7439-89-6		0.000197	g	22907	2.2907		528	0.0528
Copper Lead Frame		Nickel (external applications only)	Nickel	7440-02-0		0.00044605	g	51866	5.1866		1195	0.1195
Copper Lead Frame		Metals	Palladium, metal	7440-05-3		0.00004956	g	5763	0.5763		132	0.0132
Copper Lead Frame		Metals	Zinc, metal	7440-66-6		0.0001239	g	14407	1.4407		332	0.0332
Silicon Semiconductor Die	0.004						g					
Silicon Semiconductor Die		Solvents, additives, and other materials	Other miscellaneous substances (less than 5%).	-		0.00008	g	20000	2		214	0.0214
Silicon Semiconductor Die		Glass	Silicon, doped	-		0.00392	g	980000	98		10507	1.0507

LINKS	
MCD LINK	
Freescale website	http://www.freescale.com
GENERAL ENVIRONMENTAL COMPLIANCE LINKS	
RoHS signed letter	http://www.freescale.com/files/abstract/corporate/ehs_epp/ENV_ROHS_Freescale_Response.pdf
China RoHS	http://www.freescale.com/chinarohs
REACH signed letter	http://www.freescale.com/files/abstract/corporate/ehs_epp/ENV_REACH_Freescale_Response.pdf
ELV signed letter	http://www.freescale.com/files/abstract/corporate/ehs_epp/ENV_ELV_Freescale_Reponse.pdf
Conflict Minerals statement	http://www.freescale.com/files/abstract/corporate/ehs_epp/ENV_CONFLICT_METAL_Freescale_Response.pdf
FREESCALE ENVIRONMENTAL INFORMATION	
EPP website	http://www.freescale.com/epp
FAQ	http://www.freescale.com/webapp/sps/site/overview.jsp?code=ENVIRON_FAQ
Technical Service Request	https://www.freescale.com/webapp/servicerequest.create_SR.framework?defaultCategory=Hardware Product Support&defaultTopic=Environmentally Preferred Prod
LINKS TO BLANK IPC1752 FORMS	
Blank IPC1752 v1.1 Form	http://www.freescale.com/files/abstract/corporate/ehs_epp/IPC-1752-2_v1.1_MCD_Template.pdf

IPC1752 XML LINKS

http://www.freescale.com/mcds/MC33HB2001FKR2_IPC1752_v11.xml

http://www.freescale.com/mcds/MC33HB2001FKR2_IPC1752A.xml