

 Material Composition Declaration © Copyright 2005, IPC, Bannockburn, Illinois. All rights reserved under both international and Pan-American copyright conventions.		This document is a declaration of the substances within the manufacturer listed item. Note: if the item is an assembly with lower level parts, the declaration encompasses all lower level materials for which the manufacturer has engineering responsibility.							
1752-21.1		IPC Web Site for Information on IPC-1752 Standard http://www.ipc.org/IPC-175x			Form Type * Distribute		Declaration Class * Class 6 - RoHS Yes/No, Homogeneous Materials and Mfg Information		
Supplier Information									
Company name* onsemi			Company unique ID		Unique ID Authority			Response Date* 2024-05-20	
Contact Name Product-Env-Stewards			Title - Contact Product Enviro Compliance		Phone - Contact* NA			Email - Contact* Product-Env-Stewards@onsemi.com	
Authorized Representative* Product-Env-Stewards			Title - Representative Product Enviro Compliance		Phone - Representative* NA			Email - Representative* Product-Env-Stewards@onsemi.com	
	Requester Item Number	Mfr Item Number	Mfr Item Name	Effective Date	Version	Manufacturing Site	Weight*	UOM	Unit Type
		NXH450B100H4Q2F2 PG	1000V,75A FSIII IGBT, Mid Speed with rugged anti-parallel diodes in press fit pins	2024-05-20		CNG	175606.27	mg	Each
Manufacturing Process Information									
	Terminal Plating / Grid Array Material	Terminal Base Alloy	J-STD-020 MSL Rating	Peak Process Body Temperature		Max Time at Peak Temperature		Number of Reflow Cycles	
	Matte Tin (Sn) - annealed	CU Alloy	NA	0	C	30	seconds	3	
Comments									
For more information regarding material composition please refer to page 3									

RoHS Material Composition Declaration		Declaration Type *	Detailed
Directive 2015/863/EU amending RoHS Directive 2011/65/EU	RoHS Definition: Quantity limit of 0.01% by mass (100 PPM) in homogeneous material for Cadmium and quantity limit of 0.1% by mass (1000 PPM) in homogeneous material for: Lead (Pb), Mercury (Hg), Hexavalent Chromium (Cr6+), Polybrominated Biphenyls (PBB), Polybrominated Diphenyl Ethers (PBDE), and Bis(2-ethylhexyl) phthalate (DEHP), Benzyl-butyl phthalate (BBP), Dibutyl phthalate (DBP), Diisobutyl phthalate (DIBP).		
<p>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 identified on this form contains lead, mercury, cadmium, hexavalentchromium, polybrominated biphenyls and/or polybrominated diphenyl ethers (each a “RoHS restricted substance”) in excess of the applicable quantity limit identified above. If a homogeneous material within the part 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, 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, 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 Supplier’s liability and the Company’s 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 Supplier’s Standard Terms and Conditions of Sale applicable to such part shall apply.</p>			
RoHS Declaration *	1 - Item(s) does not contain RoHS restricted substances per the definition above		Supplier Acceptance * Accepted
Exemption: If the declared item does not contain RoHS restricted substances per the definition above except for defined RoHS exemptions, then select the corresponding response in the RoHS Declaration above and choose all applicable exemptions.			
Exemption List Version	EL-2011/534/EU		
Declaration Signature			
Instructions: Complete all of the required fields on all pages of this form. Select the "Accepted" on the Supplier Acceptance drop-down. This will display the signature area. Digitally sign the declaration (if required by the Requester) and click on Submit Form to have the form returned to the Requester.			
Supplier Digital Signature	Rastislav Drska		

Homogeneous Material Composition Declaration for Electronic Products

SubItem Instructions: The presence of any JIG Level A or B substances must be declared. [1] indicate the subpart in which the substance is located, [2] provide a description of the homogeneous material [3], enter the weight of the homogeneous material.

Substance Instructions: [A] select the Level (JIG A, JIG B, Requester or Supplier) [B] select the substance category (JIG or Requester) or enter a value (Supplier). [C] select the substance (JIG) or enter the substance and CAS (Other). [D] select a RoHS exemption, if applicable [E] enter the weight of the substance or the PPM concentration [F] Optionally enter the positive (+) and negative (-) tolerance in percent (Note: percent tolerance values are expected to cover a 3 sigma range of distribution unless otherwise noted).

Homogeneous Material	Weight	Unit of Measure	Level	Substance	CAS	Exempt	Weight	Unit of Measure
Case	10430.0	mg	Supplier	Fiber Glass (SiO2)	65997-17-3		3650.5	mg
			Supplier	PBT	26062-94-2		6779.4995	mg
Case Lid	6530.0	mg	Supplier	Fiber Glass (SiO2)	65997-17-3		2285.5	mg
			Supplier	PBT	26062-94-2		4244.5	mg
DBC	16540.0	mg	Supplier	Aluminum Trioxide (Al2O3)	1344-28-1		6616	mg
			Supplier	Copper (Cu)	7440-50-8		9924	mg
Die	131.45	mg	Supplier	Silicon Carbide	409-21-2		131.45	mg
			Supplier	Silicon (Si)	7440-21-3		0	mg
Glue	280.0	mg	Supplier	2,3-epoxypropyl-trimethoxysilan	2530-83-8		28	mg
			Supplier	Miscellaneous	Trade Secret		28	mg
			Supplier	Silica Crystalline (SiO2)	14808-60-7		224	mg
Heat Sink	123190.0	mg	B	Nickel (Ni)	7440-02-0		1909.4449	mg
			Supplier	Copper (Cu)	7440-50-8		121280.5547	mg
Silicone Gel	8100.0	mg	Supplier	Silica, [(ethenyldimethylsilyl)oxy]- and [(trimethylsilyl)oxy]- modified	68988-89-6		2430	mg
			Supplier	Silica Crystalline (SiO2)	14808-60-7		5670	mg
Solder Paste	2870.0	mg	Supplier	Silver (Ag)	7440-22-4		186.55	mg
			Supplier	Tin (Sn)	7440-31-5		2683.45	mg
			Supplier	Copper (Cu)	7440-50-8		-86.1	mg
Terminal	6990.0	mg	Supplier	Silicon (Si)	7440-21-3		18.873	mg
			B	Nickel (Ni)	7440-02-0		94.365	mg
			Supplier	Copper (Cu)	7440-50-8		6875.0146	mg
			Supplier	Phosphorus (P)	7723-14-0		1.7475	mg
Thermistor	4.819	mg	Supplier	Copper chromite black spinel	68186-91-4		0.0193	mg
			Supplier	Titanium Dioxide (TiO2)	13463-67-7		0.0087	mg
			Supplier	Silver (Ag)	7440-22-4		0.0805	mg
			Supplier	Boron Trioxide (B2O3)	1303-86-2		0.0183	mg
			Supplier	Tin (Sn)	7440-31-5		0.1108	mg
			A	Lead Oxide (PbO)	1317-36-8		0.1258	mg
			Supplier	Zinc Monoxide (ZnO)	1314-13-2		0.0024	mg
			Supplier	Silica Amorphous (SiO2)	7631-86-9		0.0386	mg
			Supplier	Misc.	Proprietary Data		0.0954	mg

			Supplier	Palladium (Pd)	7440-05-3		0.0043	mg
			Supplier	Barium Monoxide (BaO)	1304-28-5		0.0019	mg
			Supplier	Aluminum Trioxide (Al2O3)	1344-28-1		4.0735	mg
			Supplier	Ruthenium Oxide (RuO2)	12036-10-1		0.0014	mg
			B	Nickel (Ni)	7440-02-0		0.1359	mg
			Supplier	Cobalt Oxide (Co3O4)	1308-06-1		0.0043	mg
			Supplier	Manganese Tetraoxide (Mn3O4)	1317-35-7		0.0092	mg
			Supplier	Silica Crystalline (SiO2)	14808-60-7		0.0887	mg
Wire Bond - Al	540.0	mg	Supplier	Aluminum (Al)	7429-90-5		540	mg