



Materials Declaration Form

IPC Form Type *	1752 Distribute	Version	2
Sectionals *	Material Info Manufacturing Info	Subsectionals *	A-D <i>* : Required Field</i>

Supplier Information			
Company Name *	STMicroelectronics	Response Date *	2015-05-26
Contact Name *	Refer to "Supplier Comment" section	Contact Title	Refer to "Supplier Comment" section
Contact Phone *	Refer to "Supplier Comment" section	Contact Email *	Refer to "Supplier Comment" section
Authorized Representative *	Giovanni Giacobello	Representative Title	IPD Materials Declaration Champion
Representative Phone *	Refer to "Supplier Comment" section	Representative Email *	Refer to "Supplier Comment" section
Supplier Comment	Online Technical Support - STMicroelectronics : http://www.st.com/internet/com/support/online_tech_support.jsp		

Uncertainty Statement


While STMicroelectronics has endeavored to provide information which is accurate and up to date, this document and its contents are provided on a strict 'as is' and 'as available' basis. STMicroelectronics disclaims all warranties, express or implied related to this document and its contents, including but not limited to implied warranties of completeness, truth, accuracy, merchantability, fitness for a particular purpose and non-infringement. ST shall have no responsibility and assumes no liability for any cost, loss or damage of any kind which could arise, directly or indirectly, from the use or inability to use this document and/or its contents.

Legal Statement			
Supplier Acceptance *	true	Legal Declaration *	Standard

Legal Statement

Supplier certifies that it gathered the provided information and 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. 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 Supplier's liability and the Company's remedies for issues that arise regarding information the Supplier provides in this form.

Product				
Mfr Item Number	Mfr Item Name	Version	Mfr Site	Date
	TLDZ*BA12S6F	A	Z8GA	2015-05-26
Amount	UoM	Unit type	ST ECOPACK Grade	
1900.00	mg	Each	ECOPACK® 2	

Manufacturing information				
J-STD-020 MSL Rating	Classification Temp	Nbr of Reflow Cycles		 life.augmented
NAC	NAC	NAC		
bulk Solder Termination	Terminal Plating	Terminal Base Alloy	Comment	
Not Applicable ; if coating is used c	Tin (Sn), matte	Copper Alloy		

Package Designator	Size	Nbr of instances	Shape	
SIP	10 - 9.05 - 4.4	3	Through-hole	
Comment	Package: TO 220 AB NON ISOL; MDF valid for BD239C; BD241C; TIP29A; TIP29C; TIP31A; TIP31C			

QueryList : ROHS directive 2011/65/EU _ July 2011	
Query	Response
Product(s) meets EU RoHS requirement without any exemptions	false
Product(s) meets EU RoHS requirements except lead in solder and this usage may qualify under the lead in solder '7b' exemption (other selected exemptions may apply)	false
Product(s) meets EU RoHS requirements by application of the selected exemption(s)	true
Product(s) does not meet EU RoHS requirements and is not under exemptions	false
Product(s) is obsolete, no information is available	false
Product(s) is unknown, no information is available	false
Exemption Id.	Description
7a	Lead in high melting temperature type solders (i.e. lead- based alloys containing 85 % by weight or more lead)

QueryList : REACH-17th December 2014				
Query				Response
The product does not contain REACH Substances Of Very High Concern above the limits per the definition within REACH				true
CategoryLevel_Name	CategoryLevel_Threshold	amount in product (mg)	Application	ppm in product

Material Composition Declaration						Mfr Item Name	TLD2*BA1256F					
Homogeneous Material	Material Group	Mass	UoM	Level	Substance Category	Substance	CAS	Exempt	Mass	UoM	Concentration in homogeneous material (ppm)	Concentration in product (ppm)
Die or Dies	Other inorganic materials	1.194	mg	supplier	die	Silicon (Si)	7440-21-3		1.151	mg	963987	606
Die or Dies				supplier	metallization	Aluminum (Al)	7429-90-5		0.015	mg	12563	8
Die or Dies				supplier	passivation	Silicon Oxide(SiO2)	7631-86-9		0.017	mg	14238	9
Die or Dies				supplier	back side metallization	Chromium (Cr)	7440-47-3		0.001	mg	838	1
Die or Dies				supplier	back side metallization	Gold (Au)	7440-57-5		0.002	mg	1675	1
Die or Dies				supplier	back side metallization	Nickel (Ni)	7440-02-0		0.008	mg	6700	4
Leadframe	Copper & its alloys	1098.044	mg	supplier	alloy	Copper(CU)	7440-50-8		1096.344	mg	998452	577023
Leadframe				supplier	alloy	Iron(Fe)	7439-89-6		1.097	mg	999	577
Leadframe				supplier	metallization	Phosphorus(P)	12185-10-3		0.329	mg	300	173
Leadframe				supplier	metallization	Nickel	7440-02-0		0.274	mg	250	144
Soft solder	Solder	3.437	mg	supplier	Soft Solder	Tin(Sn)	7440-31-5		0.069	mg	20076	36
Soft solder				supplier	Soft Solder	Silver(Ag)	7440-22-4		0.086	mg	25022	45
Soft solder				JIG - R	Soft Solder	Lead (Pb)	7439-92-1	7a-Lead in high me	3.282	mg	954903	1727
Bonding wire	Other inorganic materials	4.224	mg	supplier	wire	Aluminum(Al)	84195-93-7		4.224	mg	1000000	2223
encapsulation	Other inorganic materials	766.981	mg	supplier	Molding compound	Silica Fused	60676-86-0		613.585	mg	800000	322939
encapsulation				supplier	Molding compound	Epoxy Resin	Proprietary		76.698	mg	100000	40367
encapsulation				supplier	Molding compound	Phenol Resin	Proprietary		49.854	mg	65000	26239
encapsulation				supplier	Molding compound	Carbon Black	14808-60-7		26.844	mg	35000	14128
connections coating	Solder	26.12	mg	supplier	solder alloy	Tin(Sn)	7440-31-5		26.12	mg	1000000	13747