

Current Production Information							
TI Part Number		TPA3008D2PHPG4		Assembly Site		TI TAIWAN A/T	
Lead/Ball Finish		CU NIPDAU		Package Type / Pins		PHP 48	
Planned Lead/Ball Finish				Package Body Size (WxLxH) mm		7x7x1	
MSL / Reflow Ratings		Level-4-260C-72 HR		Total Device Mass (mg)		134.392837	
Environmental Ratings Information							
Part Number Type		Pb-Free		JIG Material Content Compliance		Level A & B	
RoHS & High-Temp Compliant		Y		Green Compliant		Y	
Pb-Free (RoHS) Conversion Date		01-Jan-2005 (DC 0501)		Green Conversion Date		01-Jan-2005 (DC 0501)	
Pb-Free (RoHS) Available Supply Date		01-Aug-2005		Green Available Supply Date		01-Aug-2005	
Component Information							
Component	Substance	CAS Number	Amount (mg)	Homogeneous Material Level		Component Level	
				Percentage %	ppm	Percentage %	ppm
Bond Wire							
Metallurgy	Gold	7440-57-5	0.9999	99.9922	999921	0.744	7440
Trace Metal	Beryllium	7440-41-7	0.00001	0.001	10	0	0
Trace Metal	Calcium	7440-70-2	0.000012	0.0012	12	0	0
Trace Metal	Indium	7440-74-6	0.000031	0.0031	31	0	0
Trace Metal	Silver	7440-22-4	0.000025	0.0025	25	0	0
Sub-Total			0.999978	100	1000000	0.7441	7440
Die Attach Adhesive							
Conductive Material	Silver	7440-22-4	0.21	70	700000	0.1563	1562
Polymer	Epoxy		0.027	9	90000	0.0201	200
Reactive Diluent	Proprietary Material		0.063	21	210000	0.0469	468
Sub-Total			0.3	100	1000000	0.2232	2230
Lead Frame							
Base Metal	Copper	7440-50-8	46.392812	97.425	974249	34.5203	345203
Base Metal	Iron	7439-89-6	1.142856	2.4	23999	0.8504	8503
Base Metal	Lead	7439-92-1	0.014286	0.03	300	0.0106	106
Base Metal	Phosphorus	7723-14-0	0.007143	0.015	150	0.0053	53
Base Metal	Tin	7440-31-5	0.014286	0.03	300	0.0106	106
Base Metal	Zinc	7440-66-6	0.047619	0.1	999	0.0354	354
Sub-Total			47.619002	100	1000000	35.4327	354325
Lead Frame Plating							
Plating	Gold	7440-57-5	0.016835	3.5	35000	0.0125	125
Plating	Nickel	7440-02-0	0.414862	86.2501	862500	0.3087	3086
Plating	Palladium	7440-05-3	0.049302	10.2499	102499	0.0367	366
Sub-Total			0.480999	100	1000000	0.3579	3577
Mold Compound							
Coloring	Carbon Black	1333-86-4	0.313971	0.4	3999	0.2336	2336
Filler	Fused Silica	60676-86-0	66.718929	85	849999	49.6447	496447
Flame Retardant Additive	Metal Oxide		0.706436	0.9	9000	0.5257	5256
Hardener	Biphenyl hardener		2.354786	3	30000	1.7522	17521
Hardener	Phenolic Novolac		0.706436	0.9	9000	0.5257	5256
Hardener	Proprietary Hardener		0.706436	0.9	9000	0.5257	5256
Other additives	Catalyst Mold Release Adhesion Agent		1.020407	1.3	12999	0.7593	7592
Polymer	Biphenyl Epoxy		3.139714	4	39999	2.3362	23362
Stress Relief Agent	Proprietary		0.470957	0.6	5999	0.3504	3504
Stress Relief Agent	Silicone		2.354786	3	30000	1.7522	17521
Sub-Total			78.492858	100	1000000	58.4055	584051
Semiconductor Device							
Silicon Chip	Doped Silicon	7440-21-3	6.5	100	1000000	4.8366	48365
Sub-Total			6.5	100	1000000	4.8366	48365
Total			134.392837			100	1000000

Important Part Information

There is a remote possibility the Customer Part Number (CPN) your company uses could reference more than one TI part number. This is due to two or more users (EMSI's or subcontractors) using the same CPN for different TI part numbers. If this occurs, please check your Customer Part Number and cross reference it with the TI part number seen on this page.

Product Content Methodology

[For an explanation of the methods used to determine material weights. See Product Content Methodology.](#)

Material Declaration Certificate for Semiconductor Products

TI certifies that the material content information provided by TI as of the date of disclosure is representative and accurate. TI semiconductor products designated by TI as "Pb-Free" or "Green" (defined below) do not exceed any of the Joint Industry Guide (JIG) Level-A Substance thresholds and are compliant with the requirements of the European Union's Restriction on Use of Hazardous Substances ("RoHS") Directive, 2002/95/EC.

For TI semiconductor products NOT designated as "Pb-Free" or "Green", these products are RoHS compliant with the exception of Lead (Pb) which may be found in the leadframe plating or solder balls, or in RoHS exempt applications such as high-temperature solder die attach (exemption 7a) and flip-chip solder bumps (exemption 15). This situation is known as RoHS-5 or "5 of 6" compliant.

JIG Level-A Banned Substances	Threshold, Homogeneous Level (1)
Asbestos	Not intentionally added
Azo colorants	Not intentionally added
RoHS - Cadmium/Cadmium Compounds	75 ppm, Not intentionally added (RoHS threshold = 100ppm)
RoHS - Hexavalent Chromium/Hex.Chromium.Compounds	1000 ppm, Not intentionally added
RoHS - Lead/Lead Compounds	1000 ppm, Not intentionally added
RoHS - Mercury/Mercury Compounds	1000 ppm, Not intentionally added
Ozone Depleting Substances	Class I : Not intentionally added Class II : 1000ppm
RoHS - Polybrominated Biphenyls (PBBs)	1000 ppm, Not intentionally added
RoHS - Polybrominated Diphenyl Ethers (PBDEs)	1000 ppm, Not intentionally added
Polychlorinated Biphenyls (PCBs)	1000 ppm, Not intentionally added
Polychlorinated Naphthalenes (>3 Chlorine atoms)	1000 ppm, Not intentionally added
Radioactive Substances	1000 ppm, Not intentionally added
Shortchain Chlorinated Paraffins	1000 ppm, Not intentionally added
Tributyl Tin (TBT) and Triphenyl Tin (TPT)	1000 ppm, Not intentionally added
Tributyl Tin Oxide (TBTO)	1000 ppm, Not intentionally added
(1) Threshold does not apply to applications covered by a RoHS substance exemption.	

Regarding the EU Directive 2004/12/EC concerning Packaging and Packaging Waste, TI's packing materials (boxes, trays, etc) comply with the directive's requirement that the total concentration of the 4 heavy metals (cadmium, hexavalent chromium, lead, and mercury) must not exceed 100 ppm. Material content details for TI's packing materials are available at www.ti.com/eoinfo.

TI bases its material content knowledge on information provided by third parties and has taken and continues to take commercially reasonable steps to provide representative and accurate information but may not have conducted destructive testing or chemical analysis on incoming materials and chemicals. TI and TI suppliers consider certain limited information to be proprietary, and thus CAS numbers and other limited information may not be available for release. TI's standard warranty and limitation of liability provisions of TI's Standard Terms and Conditions (available at <http://www.ti.com/sc/docs/stdterms.htm>) apply to the representations herein unless otherwise provided by a written contract or other agreement signed by the parties.

Signature: [\(click here for signed certificate\)](#)

Name/Title: Cindy Allen, Vice President, Worldwide Quality

Date: September 27, 2006

Pb-Free: TI defines "Pb-Free" or "RoHS Compliant" to mean semiconductor products that are compliant with the current RoHS requirements for all 6 substances, including the requirement that lead not exceed 0.1% by weight in homogeneous materials unless exempt. Where designed to be soldered at high temperatures, TI "Pb-Free" and "RoHS Compliant" products are suitable for use in specified lead-free processes.

Green: TI defines "Green" to mean Pb-Free/RoHS Compliant and free of Bromine (Br) and Antimony (Sb) based flame retardants (Br or Sb do not exceed 0.1% by weight in homogeneous material).