Full Material Declaration for PZU4.7BL

Date	2025-02-01 20:37:17 CET+0100
Package	SOD882 (DFN1006-2): 0.48 mm × 0.6 mm × 1.0 mm
Description	Single Zener diodes
Datasheet	https://assets.nexperia.com/documents/data-sheet/PZUXBL_SER.pdf
OPNs	934061665315: PZU4.7BL,315 (RFS), MSL 1
Automotive-qualified	Yes
UL-94	https://iq.ulprospector.com/en/profile?e=594631

REACH	Compliant with Regulation 1907/2006/EC (REACH). Does not contain REACH SVHC substances exceeding 1000 ppm of the article.
EU RoHS	Compliant with Directive 2011/65/EU, amended by Directive 2015/863/EU, on the restriction of the use of certain hazardous substances in electrical and electronic equipment ('RoHS 2 amended') without exemptions.
CN RoHS	Compliant with Chinese Administration on the Control of Pollution Caused by Electronic Information Products (ACPEIP; CN RoHS).
ELV	Compliant with Directive 2000/53/EC, amended by Directive 2023/533, on end of life vehicles (ELV) without exemptions.
PFAS	Does not contain any intentionally added per- and polyfluoroalkyl substances (PFAS).
CA Proposition 65	Contains California Proposition 65 substance(s) [at the article level]: substance 7440-02-0: 19600 ppm; substance 1333-86-4: 2433 ppm; substance 7439-92-1: 1 ppm;
IEC 62474	Contains IEC 62474 substance(s) [at the article level]: substance 7440-02-0: 19600 ppm; substance 1333-86-4: 2433 ppm; substance 7439-92-1: 1 ppm;
Precious Metals	Contains precious metals [Ag, Au, Pd, Pt; at the article level]: substance 7440-22-4: 8220 ppm; substance 7440-05-3: 754 ppm; substance 7440-57-5: 5065 ppm;
GADSL	Contains 'Global Automotive Declarable Substances List' (GADSL) substances: substance 7440-22-4: 8220 ppm; substance 7440-50-8: 419020 ppm; substance 7440-02-0: 19601 ppm; substance 7439-95-4: 887 ppm; substance 7440-05-3: 754 ppm; substance 7439-92-1: 1 ppm;
RHF Indicator	D: Lead-free and halogen-free according to Nexperia's halogen-free definition.

Material	Mat. Group	Substance	CAS No.	Mass / mg	Mass-% of Material	Mass-% of Part
Adhesive	Filler	Silver (Ag)	7440-22-4	0.007600	76.000000	0.822012
Adhesive	Polymer	Phenolic resin		0.001353	13.530000	0.146340
Adhesive	Polymer	Formaldehyde, polymer with (chloromethyl)oxirane and phenol	9003-36-5	0.001047	10.470000	0.113243
		Adhesive Total		**0.010000**	**100.000000**	**1.081595**
Die	Doped silicon	Silicon (Si)	7440-21-3	0.030000	100.000000	3.244787
		Die Total		**0.030000**	**100.000000**	**3.244787**
Lead Frame	Copper alloy	Copper (Cu)	7440-50-8	0.387409	94.490000	41.901986
Lead Frame	Copper alloy	Nickel (Ni)	7440-02-0	0.012915	3.150000	1.396881
Lead Frame	Copper alloy	Silicon (Si)	7440-21-3	0.002829	0.690000	0.305983
Lead Frame	Copper alloy	Magnesium (Mg)	7439-95-4	0.000820	0.200000	0.088691
		Base Alloy Total		*0.403973*	*98.530000*	*43.693541*
Lead Frame	Pure metal layer	Nickel (Ni)	7440-02-0	0.005207	1.270000	0.563187
		Pre-Plating 1 Total		*0.005207*	*1.270000*	*0.563187*
Lead Frame	Pure metal layer	Palladium (Pd)	7440-05-3	0.000697	0.170000	0.075387
		Pre-Plating 2 Total		*0.000697*	*0.170000*	*0.075387*
Lead Frame	Pure metal layer	Gold (Au)	7440-57-5	0.000123	0.030000	0.013303
		Pre-Plating 3 Total		*0.000123*	*0.030000*	*0.013303*
		Lead Frame Total		**0.410000**	**100.000000**	**44.345418**
Mould Compound	Filler	Silica fused	60676-86-0	0.270000	60.000000	29.203081

Material	Mat. Group	Substance	CAS No.	Mass / mg	Mass-% of Material	Mass-% of Part
Mould Compound	Filler	Silica	7631-86-9	0.103500	23.000000	11.194514
Mould Compound	Polymer	Epoxy resin system		0.031500	7.000000	3.407026
Mould Compound	Polymer	Phenolic resin		0.027000	6.000000	2.920308
Mould Compound	Flame retardant	Aluminium hydroxide (Al(OH)3)	21645-51-2	0.013500	3.000000	1.460154
Mould Compound	Pigment	Carbon black	1333-86-4	0.002250	0.500000	0.243359
Mould Compound	Ion trapping agent	Bismuth (Bi)	7440-69-9	0.002250	0.500000	0.243359
		Mould Compound Total		**0.450000**	**100.000000**	**48.671801**
Post-Plating	Tin solder	Tin (Sn)	7440-31-5	0.019988	99.940000	2.161893
Post-Plating	Impurity	Non-declarable		0.000011	0.055500	0.001190
Post-Plating	Impurity	Lead (Pb)	7439-92-1	0.000001	0.004500	0.000108
		Post-Plating Total		**0.020000**	**100.000000**	**2.163191**
Wire	Pure metal	Gold (Au)	7440-57-5	0.004560	99.990000	0.493208
Wire	Impurity	Non-declarable		0.000000	0.010000	0.000000
		Wire Total		**0.004560**	**100.000000**	**0.493208**
		PZU4.7BL Total		**0.924560**	**100.000000**	**100.000000**

部件名称 Material	有毒或有害物质和元素 (Toxic or hazardous substances and elements)					
	铅 (Pb)	镉 (Cd)	汞 (Hg)	六价铬 (Cr^{6+})	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
胶黏剂 (Adhesive)	○	○	○	○	○	○
半导体芯片 (Die)	○	○	○	○	○	○
基底合金 (Base Alloy)	○	○	○	○	○	○
预镀层1 (Pre-Plating 1)	○	○	○	○	○	○
预镀层2 (Pre-Plating 2)	○	○	○	○	○	○
预镀层3 (Pre-Plating 3)	○	○	○	○	○	○
模封料 (Mould Compound)	○	○	○	○	○	○
后镀层 (Post-Plating)	○	○	○	○	○	○
导线 (Wire)	○	○	○	○	○	○

○ 表示该有害物质在该部件所有均质材料中的含量均在 GB/T 26572 规定的限量要求以下
Indicates that said hazardous substance contained in all of the homogeneous materials for this part is below the limit requirement of GB/T 26572.

× 表示该有害物质至少在该部件的某一均质材料中的含量超出 GB/T 26572 规定的限量要求
Indicates that said hazardous substance contained in at least one of the homogeneous materials used for this part is above the limit requirement of GB/T 26572.

该半导体产品具有无限期的环保使用期限（EFUP）。
This semiconductor product has an indefinite environmental friendly use period (EFUP).