

Product Package Material Disclosure (Diode)

Package Type: DFN1006-2B HAF

Weight: 0.742 mg / pc

Component	Material	Weight (mg)	Substance in material	CAS #	Content Spec. (%)	Content (%)	Substance Weight (mg)
Body	Epoxy Molding	0.539	Silica Fused	60676-86-0	82~92	89.40	0.481866
			Crystalline Silica (Quartz)	14808-60-7	5 max.	4.2	0.022638
			Carbon Black	1333-86-4	0.3 max.	0.15	0.000809
			Epoxy Resin 1	Trade secret	0.5~8	3.75	0.020213
			Epoxy Resin 2	Trade secret	0.5~6	1.0	0.005390
			Hardener	Trade secret	3~8	1.5	0.008085
Adhesive	Silver Glue	0.011	Ag	7440-22-4	70-80	78	0.00858
			Bisphenol F	28064-14-4	10-20	16	0.00176
			2-Ethyl Hexyl Glycidyl Ether	2461-15-6	0-10	6	0.00066
Bonding Wire	Gold Wire	0.002	Au	7440-57-5	99.99 min.	99.99	0.0019998
			Others	—	0.01 max.	0.01	0.0000002
Lead Frame	Copper Alloy	0.178382	Cu	7440-50-8	balance	95.635	0.171187
			Si	7440-21-3	0.25-1.2	0.8	0.001432
			Ni	7440-02-0	2.2-4.2	3	0.005370
			Mg	7439-95-4	0.05-0.3	0.22	0.000394
	Plating Layer	0.000618	Ni	7440-02-0	0.122-0.248	0.2	0.000358
			Pd	7440-05-3	0.003-0.198	0.12	0.000215
			Au	7440-57-5	0.002-0.032	0.025	0.000045
Dice	Wafer	0.011	Silicon	7440-21-3	93.3585	93.3585	0.010269
			Antimony	7440-36-0	0.0605	0.0605	0.000007
			Titanium	7440-32-6	0.157	0.157	0.000017
			Nickel	7440-02-0	0.543	0.543	0.000060
			Silver	7440-22-4	5.881	5.881	0.000647

Date: 2015-09-16 Rev:01

TOP DYNAMIC



ISO14001 : 2004
Certificate No. 121505007



ISO 9001 : 2008
Certificate No. 50114012



OHSAS 18001 : 2007
Certificate No. 05131506006



IECQ QC 080000
Certificate No. E22-H1000Y14.002

Product Package Material Disclosure (Diode)

Package Type: DFN1006-2H HAF

Weight: 0.861 mg / pc

Component	Material	Weight (mg)	Substance in material	CAS #	Content Spec. (%)	Content (%)	Substance Weight (mg)
Body	Epoxy Molding	0.658	Silica Fused	60676-86-0	82~92	89.40	0.588252
			Crystalline Silica (Quartz)	14808-60-7	5 max.	4.2	0.027636
			Carbon Black	1333-86-4	0.3 max.	0.15	0.000987
			Epoxy Resin 1	Trade secret	0.5~8	3.75	0.024675
			Epoxy Resin 2	Trade secret	0.5~6	1.0	0.006580
			Hardener	Trade secret	3~8	1.5	0.009870
Adhesive	Silver Glue	0.011	Ag	7440-22-4	70-80	78	0.008580
			Bisphenol F	28064-14-4	10-20	16	0.001760
			2-Ethyl Hexyl Glycidyl Ether	2461-15-6	0-10	6	0.000660
Bonding Wire	Gold Wire	0.002	Au	7440-57-5	99.99 min.	99.99	0.0019998
			Others	—	0.01 max.	0.01	0.0000002
Lead Frame	Copper Alloy	0.178382	Cu	7440-50-8	balance	95.635	0.171187
			Si	7440-21-3	0.25-1.2	0.8	0.001432
			Ni	7440-02-0	2.2-4.2	3	0.005370
			Mg	7439-95-4	0.05-0.3	0.22	0.000394
	Plating Layer	0.000618	Ni	7440-02-0	0.122-0.248	0.2	0.000358
			Pd	7440-05-3	0.003-0.198	0.12	0.000215
			Au	7440-57-5	0.002-0.032	0.025	0.000045
Dice	Wafer	0.011	Silicon	7440-21-3	93.3585	93.3585	0.010269
			Antimony	7440-36-0	0.0605	0.0605	0.000007
			Titanium	7440-32-6	0.157	0.157	0.000017
			Nickel	7440-02-0	0.543	0.543	0.000060
			Silver	7440-22-4	5.881	5.881	0.000647

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Certificate No. E22-H1000Y14.002

Product Package Material Disclosure (Diode)

Package Type: DFN1006-3B HAF

Weight: 0.742 mg / pc

Component	Material	Weight (mg)	Substance in material	CAS #	Content Spec. (%)	Content (%)	Substance Weight (mg)
Body	Epoxy Molding	0.539	Silica Fused	60676-86-0	82~92	89.40	0.481866
			Crystalline Silica (Quartz)	14808-60-7	5 max.	4.2	0.022638
			Carbon Black	1333-86-4	0.3 max.	0.15	0.000809
			Epoxy Resin 1	Trade secret	0.5~8	3.75	0.020213
			Epoxy Resin 2	Trade secret	0.5~6	1.0	0.005390
			Hardener	Trade secret	3~8	1.5	0.008085
Adhesive	Silver Glue	0.011	Ag	7440-22-4	70-80	78	0.008580
			Bisphenol F	28064-14-4	10-20	16	0.001760
			2-Ethyl Hexyl Glycidyl Ether	2461-15-6	0-10	6	0.000660
Bonding Wire	Gold Wire	0.004	Au	7440-57-5	99.99 min.	99.99	0.0039996
			Others	—	0.01 max.	0.01	0.0000004
Lead Frame	Copper Alloy	0.176389	Cu	7440-50-8	balance	95.635	0.169274
			Si	7440-21-3	0.25-1.2	0.8	0.001416
			Ni	7440-02-0	2.2-4.2	3	0.005310
			Mg	7439-95-4	0.05-0.3	0.22	0.000389
	Plating Layer	0.000611	Ni	7440-02-0	0.122-0.248	0.2	0.000354
			Pd	7440-05-3	0.003-0.198	0.12	0.000212
			Au	7440-57-5	0.002-0.032	0.025	0.000044
Dice	Wafer	0.011	Silicon	7440-21-3	93.3585	93.3585	0.010269
			Antimony	7440-36-0	0.0605	0.0605	0.000007
			Titanium	7440-32-6	0.157	0.157	0.000017
			Nickel	7440-02-0	0.543	0.543	0.000060
			Silver	7440-22-4	5.881	5.881	0.000647

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Certificate No. E22-H1000Y14.002

Product Package Material Disclosure (Diode)

Package Type: DFN1006-3H HAF

Weight: 0.861 mg / pc

Component	Material	Weight (mg)	Substance in material	CAS #	Content Spec. (%)	Content (%)	Substance Weight (mg)
Body	Epoxy Molding	0.658	Silica Fused	60676-86-0	82~92	89.40	0.588252
			Crystalline Silica (Quartz)	14808-60-7	5 max.	4.2	0.027636
			Carbon Black	1333-86-4	0.3 max.	0.15	0.000987
			Epoxy Resin 1	Trade secret	0.5~8	3.75	0.024675
			Epoxy Resin 2	Trade secret	0.5~6	1.0	0.006580
			Hardener	Trade secret	3~8	1.5	0.009870
Adhesive	Silver Glue	0.011	Ag	7440-22-4	70-80	78	0.008580
			Bisphenol F	28064-14-4	10-20	16	0.001760
			2-Ethyl Hexyl Glycidyl Ether	2461-15-6	0-10	6	0.000660
Bonding Wire	Gold Wire	0.004	Au	7440-57-5	99.99 min.	99.99	0.0039996
			Others	—	0.01 max.	0.01	0.0000004
Lead Frame	Copper Alloy	0.176389	Cu	7440-50-8	balance	95.635	0.169274
			Si	7440-21-3	0.25-1.2	0.8	0.001416
			Ni	7440-02-0	2.2-4.2	3	0.005310
			Mg	7439-95-4	0.05-0.3	0.22	0.000389
	Plating Layer	0.000611	Ni	7440-02-0	0.122-0.248	0.2	0.000354
			Pd	7440-05-3	0.003-0.198	0.12	0.000212
			Au	7440-57-5	0.002-0.032	0.025	0.000044
Dice	Wafer	0.011	Silicon	7440-21-3	93.3585	93.3585	0.010269
			Antimony	7440-36-0	0.0605	0.0605	0.000007
			Titanium	7440-32-6	0.157	0.157	0.000017
			Nickel	7440-02-0	0.543	0.543	0.000060
			Silver	7440-22-4	5.881	5.881	0.000647

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Certificate No. E22-H1000Y14.002

Product Package Material Disclosure (Diode)

Package Type: DFN1608 (HAF)

Weight: 1.874 mg / pc

Component	Material	Weight (mg)	Substance in material	CAS #	Content Spec. (%)	Content (%)	Substance Weight (mg)
Body	Epoxy Molding	1.433	Silica Fused	60676-86-0	82~92	89.40	1.281102
			Crystalline Silica (Quartz)	14808-60-7	5 max.	4.2	0.060186
			Carbon Black	1333-86-4	0.3 max.	0.15	0.0021495
			Epoxy Resin 1	Trade secret	0.5~8	3.75	0.0537375
			Epoxy Resin 2	Trade secret	0.5~6	1.0	0.01433
			Hardener	Trade secret	3~8	1.5	0.021495
Adhesive	Silver Glue	0.024	Ag	7440-22-4	70-80	78	0.01872
			Bisphenol F	28064-14-4	10-20	16	0.00384
			2-Ethyl Hexyl Glycidyl Ether	2461-15-6	0-10	6	0.00144
Bonding Wire	Gold Wire	0.008	Au	7440-57-5	99.99 min.	99.99	0.0079992
			Others	—	0.01 max.	0.01	0.0000008
Lead Frame	Copper Alloy	0.363741	Cu	7440-50-8	balance	95.635	0.34906775
			Si	7440-21-3	0.25-1.2	0.8	0.00292
			Ni	7440-02-0	2.2-4.2	3	0.01095
			Mg	7439-95-4	0.05-0.3	0.22	0.000803
	Plating Layer	0.001259	Ni	7440-02-0	0.122-0.248	0.2	0.00073
			Pd	7440-05-3	0.003-0.198	0.12	0.000438
			Au	7440-57-5	0.002-0.032	0.025	0.00009125
Dice	Wafer	0.044	Silicon	7440-21-3	93.3585	93.3585	0.04107774
			Antimony	7440-36-0	0.0605	0.0605	0.00002662
			Titanium	7440-32-6	0.157	0.157	0.00006908
			Nickel	7440-02-0	0.543	0.543	0.00258764
			Silver	7440-22-4	5.881	5.881	0.00023892

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ISO 9001 : 2008
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OHSAS 18001 : 2007
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IECQ QC 080000
Certificate No. E20-H1000Y14.002

Product Package Material Disclosure (Diode)

Package Type: LBF HAF

Weight: 94.2mg / pc

Make up of material	Material	Weight (mg)	Substance in material	CAS #	Content Spec. (%)	Content (%)	Substance Weight (mg)
Plating	Tin	0.2	Sn	7440-31-5	99.9 min.	99.95	0.1999
			Others	—	0.05 max.	0.05	0.0001
Solder	Solder	1.6	Ag	7440-22-4	2-2.5	2.45	0.0392
			Sn	7440-31-5	4-4.25	4.92	0.0787
			Pb	7439-92-1	78.6-83.2	92.35	1.4776
			Polymerized Rosin	65997-05-9	4-6	0.1	0.0016
			Octanedionic Acid	505-48-6	0.2-0.9	0.03	0.0005
			Thixotropic Agent	8001-78-3	0.5max.	0.15	0.0024
Body	Epoxy Molding	46.8	Crystalline Silica (Quartz)	14808-60-7	40-50	46.5	21.7620
			Amorphous Silicon Dioxide	7631-86-9	20-30	24.9	11.6532
			Epoxy Resin	Trade Secret	10-20	15.2	7.1136
			Synthetic Resin	Trade Secret	1-10	6.8	3.1824
			Silica Fused	60676-86-0	1-10	5.6	2.6208
			Amorphous Silicon Dust	112945-52-5	0.1-1	0.5	0.2340
Lead Frame	Lead Frame	42.752	Cu	7440-50-8	99.8	99.8	42.66649600
			Fe	7439-89-6	0.113	0.113	0.04830976
			Others	—	0.087	0.087	0.03719424
Dice	Dice	2.848	Si	7440-21-3	93.48	93.48	2.6623
			Pb	7439-92-1	3.49	3.49	0.0994
			SiO ₂	14808-60-7	2.01	2.01	0.0572
			Al ₂ O ₃	1344-28-1	0.49	0.49	0.0140
			Au	7440-57-5	0.49	0.49	0.0140
			Others	—	0.04	0.04	0.0011

Note: Lead (Pb) in high melting temperature type solders and in glass of electronic components are exempted from RoHS directive (EU Directive 2011/65/EU).

Date: 2015-09-16 Rev:01

TOP DYNAMIC



Proudct Package Material Disclosure (Diode)

Package Type: SOD-123FL HAF PL

Weight:18.312mg / pc

Component	Material	Weight (mg)	Substance in material	CAS #	Content Spec. (%)	Content (%)	Substance Weight (mg)
Plating	Tin	0.1	Sn	7440-31-5	99.95 min.	99.97	0.09990
			Others	—	0.05 max.	0.030	0.00010
Solder	Solder	0.8	Ag	7440-22-4	2-2.25	2.45	0.01960
			Sn	7440-31-5	4-4.25	4.92	0.03936
			Pb	7439-92-1	78.6-83.2	92.35	0.73880
			Polymerized Rosin	65997-05-9	4-6	0.1	0.00080
			Octanedionic Acid	505-48-6	0.2-0.9	0.03	0.00024
			Thixotropic Agent	8001-78-3	0.5max.	0.15	0.00120
Body	Epoxy Molding	8.2	Crystalline Silica (Quartz)	14808-60-7	76	75.80	6.21560
			Phenolic Resin Water-Soluble	9003-35-4	7	6.80	0.55760
			Epoxy Resin	24969-06-0	13	12.90	1.05780
			Triphenyl Phosphate	115-86-6	0.2	0.22	0.01804
			Plyaspartic Acid	55719-33-0	0.7	0.71	0.05822
			Gama-glycidoxypopyl Trime	2530-83-8	1	0.98	0.08036
			Firebrake (R) ZB	138265-88-0	1.7	1.72	0.14104
			Carbon Black	1333-86-4	0.1-1	0.87	0.07134
Lead Frame	Lead Frame	8.5	Cu	7440-50-8	99.95	99.96	8.49660
			Others	—	0.05 max.	0.04	0.00340
Dice	Wafer	0.712	Si	7440-21-3	95.49	95.48	0.67982
			Ag	7440-22-4	4.5	4.49	0.03197
			Others	—	0.01	0.03	0.00021

Note: Lead (Pb) in high melting temperature type solders is exempted from RoHS directive (EU Directive 2011/65/EU).

Date: 2015-09-16 Rev:01

TOP DYNAMIC



ISO14001 : 2004
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ISO 9001 : 2008
Certificate No. 50114012



OHSAS 18001 : 2007
Certificate No. 05131506006



IECQ QC 080000
Certificate No. IEQ24M000744022

Product Package Material Disclosure (Diode)

Package Type: SOD-123FL HAF GPP

Weight: 18.312mg / pc

Component	Material	Weight (mg)	Substance in material	CAS #	Content Spec. (%)	Content (%)	Substance Weight (mg)
Plating	Tin	0.1	Sn	7440-31-5	99.95 min.	99.97	0.09990
			Others	—	0.05 max.	0.030	0.00010
Solder	Solder	0.8	Ag	7440-22-4	2-2.25	2.45	0.01960
			Sn	7440-31-5	4-4.25	4.92	0.03936
			Pb	7439-92-1	78.6-83.2	92.35	0.73880
			Polymerized Rosin	65997-05-9	4-6	0.1	0.00080
			Octanedionic Acid	505-48-6	0.2-0.9	0.03	0.00024
			Thixotropic Agent	8001-78-3	0.5max.	0.15	0.00120
Body	Epoxy Molding	8.2	Crystalline Silica (Quartz)	14808-60-7	76	75.80	6.21560
			Phenolic Resin Water-Soluble	9003-35-4	7	6.80	0.55760
			Epoxy Resin	24969-06-0	13	12.90	1.05780
			Triphenyl Phosphate	115-86-6	0.2	0.22	0.01804
			Plyaspartic Acid	55719-33-0	0.7	0.71	0.05822
			Gama-glycidoxypopyl Trime	2530-83-8	1	0.98	0.08036
			Firebrake (R) ZB	138265-88-0	1.7	1.72	0.14104
			Carbon Black	1333-86-4	0.1-1	0.87	0.07134
Lead Frame	Lead Frame	8.5	Cu	7440-50-8	99.95	99.96	8.49660
			Others	—	0.05 max.	0.04	0.00340
Dice	Dice	0.712	Si	7440-21-3	93.45	93.48	0.66558
			Pb	7439-92-1	3.5	3.49	0.02485
			SiO ₂	14808-60-7	2	2.01	0.01431
			Al ₃ O ₂	1344-28-1	0.5	0.49	0.00349
			Au	7440-57-5	0.5	0.49	0.00349
			Others	—	0.05	0.04	0.00028

Note: Lead (Pb) in high melting temperature type solders and in glass of electronic components are exempted from RoHS directive (EU Directive 2011/65/EU).

Date: 2015-09-16 Rev:01

TOP DYNAMIC



Proudct Package Material Disclosure (Diode)

Package Type: SOD-123HE HAF PL

Weight:18.312mg / pc

Component	Material	Weight (mg)	Substance in material	CAS #	Content Spec. (%)	Content (%)	Substance Weight (mg)
Plating	Tin	0.1	Sn	7440-31-5	99.95 min.	99.97	0.09990
			Others	—	0.05 max.	0.030	0.00010
Solder	Solder	0.8	Ag	7440-22-4	2-2.25	2.45	0.01960
			Sn	7440-31-5	4-4.25	4.92	0.03936
			Pb	7439-92-1	78.6-83.2	92.35	0.73880
			Polymerized Rosin	65997-05-9	4-6	0.1	0.00080
			Octanedionic Acid	505-48-6	0.2-0.9	0.03	0.00024
			Thixotropic Agent	8001-78-3	0.5max.	0.15	0.00120
Body	Epoxy Molding	8.2	Crystalline Silica (Quartz)	14808-60-7	76	75.80	6.21560
			Phenolic Resin Water-Soluble	9003-35-4	7	6.80	0.55760
			Epoxy Resin	24969-06-0	13	12.90	1.05780
			Triphenyl Phosphate	115-86-6	0.2	0.22	0.01804
			Plyaspartic Acid	55719-33-0	0.7	0.71	0.05822
			Gama-glycidoxypopyl Trime	2530-83-8	1	0.98	0.08036
			Firebrake (R) ZB	138265-88-0	1.7	1.72	0.14104
			Carbon Black	1333-86-4	0.1-1	0.87	0.07134
Lead Frame	Lead Frame	8.5	Cu	7440-50-8	99.95	99.96	8.49660
			Others	—	0.05 max.	0.04	0.00340
Dice	Wafer	0.712	Si	7440-21-3	95.49	95.48	0.67982
			Ag	7440-22-4	4.5	4.49	0.03197
			Others	—	0.01	0.03	0.00021

Note: Lead (Pb) in high melting temperature type solders is exempted from RoHS directive (EU Directive 2011/65/EU).

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TOP DYNAMIC



Product Package Material Disclosure (Diode)

Package Type: SOD-123HE HAF GPP

Weight: 18.312mg / pc

Component	Material	Weight (mg)	Substance in material	CAS #	Content Spec. (%)	Content (%)	Substance Weight (mg)
Plating	Tin	0.1	Sn	7440-31-5	99.95 min.	99.97	0.09990
			Others	—	0.05 max.	0.030	0.00010
Solder	Solder	0.8	Ag	7440-22-4	2-2.25	2.45	0.01960
			Sn	7440-31-5	4-4.25	4.92	0.03936
			Pb	7439-92-1	78.6-83.2	92.35	0.73880
			Polymerized Rosin	65997-05-9	4-6	0.1	0.00080
			Octanedionic Acid	505-48-6	0.2-0.9	0.03	0.00024
			Thixotropic Agent	8001-78-3	0.5max.	0.15	0.00120
Body	Epoxy Molding	8.2	Crystalline Silica (Quartz)	14808-60-7	76	75.80	6.21560
			Phenolic Resin Water-Soluble	9003-35-4	7	6.80	0.55760
			Epoxy Resin	24969-06-0	13	12.90	1.05780
			Triphenyl Phosphate	115-86-6	0.2	0.22	0.01804
			Plyaspartic Acid	55719-33-0	0.7	0.71	0.05822
			Gama-glycidioxypropyl Trime	2530-83-8	1	0.98	0.08036
			Firebrake (R) ZB	138265-88-0	1.7	1.72	0.14104
			Carbon Black	1333-86-4	0.1-1	0.87	0.07134
Lead Frame	Lead Frame	8.5	Cu	7440-50-8	99.95	99.96	8.49660
			Others	—	0.05 max.	0.04	0.00340
Dice	Dice	0.712	Si	7440-21-3	93.45	93.48	0.66558
			Pb	7439-92-1	3.5	3.49	0.02485
			SiO ₂	14808-60-7	2	2.01	0.01431
			Al ₃ O ₂	1344-28-1	0.5	0.49	0.00349
			Au	7440-57-5	0.5	0.49	0.00349
			Others	—	0.05	0.04	0.00028

Note: Lead (Pb) in high melting temperature type solders and in glass of electronic components are exempted from RoHS directive (EU Directive 2011/65/EU).

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TOP DYNAMIC



ISO14001 : 2004
Certificate No. 121505007



ISO 9001 : 2008
Certificate No. 50114012



OHSAS 18001 : 2007
Certificate No. 05131506006



IECQ QC 080000
Certificate No. IEQ-H-MOODY 14.002

Product Package Material Disclosure (Diode)

Package Type: SOD-323HE HAF PL

Weight: 5.625mg / pc

Component	Material	Weight (mg)	Substance in material	CAS #	Content Spec. (%)	Content (%)	Substance Weight (mg)
Plating	Tin	0.1	Sn	7440-31-5	99.95 min.	99.97	0.099700
			Others	—	0.05 max.	0.030	0.000300
Solder	Solder	0.6	Ag	7440-22-4	2-2.25	2.45	0.014700
			Sn	7440-31-5	4-4.25	4.92	0.029520
			Pb	7439-92-1	78.6-83.2	92.35	0.554100
			Polymerized Rosin	65997-05-9	4-6	0.10	0.000600
			Octanedionic Acid	505-48-6	0.2-0.9	0.03	0.000180
			Thixotropic Agent	8001-78-3	0.5max.	0.15	0.000900
Body	Epoxy Molding	1.863	Si-oxide amorphous	7631-86-9	60-80	74.50	1.387935
			Epoxy resin	29690-82-2	10-30	15.50	0.288765
			Phenol-formaldehyde polymer	9003-35-4	5-10	6.30	0.117369
			Zinc borate hydrate	138265-88-0	1-5	3.40	0.063342
			Carbon black	1333-86-4	0.1-1	0.30	0.005589
Lead Frame	Lead Frame	2.55	Cu	7440-50-8	99.95	99.96	2.54898
			Others	—	0.05 max.	0.04	0.00102
Dice	Wafer	0.512	Si	7440-21-3	95.49	95.49	0.48891
			Ag	7440-22-4	4.5	4.5	0.02304
			Others	—	0.01	0.01	0.00005

Note: Lead (Pb) in high melting temperature type solders is exempted from RoHS directive (EU Directive 2011/65/EU).

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TOP DYNAMIC



ISO14001 : 2004
Certificate No. 121505007



ISO 9001 : 2008
Certificate No. 50114012



OHSAS 18001 : 2007
Certificate No. 05131506006



IECQ QC 080000
Certificate No. IEQ3HMO00Y14J022

Proudct Package Material Disclosure (Diode)

Package Type: SOD-323HE HAF GPP

Weight:5.625mg / pc

Component	Material	Weight (mg)	Substance in material	CAS #	Content Spec. (%)	Content (%)	Substance Weight (mg)
Plating	Tin	0.1	Sn	7440-31-5	99.95 min.	99.97	0.099700
			Others	—	0.05 max.	0.030	0.000300
Solder	Solder	0.6	Ag	7440-22-4	2-2.25	2.45	0.014700
			Sn	7440-31-5	4-4.25	4.92	0.029520
			Pb	7439-92-1	78.6-83.2	92.35	0.554100
			Polymerized Rosin	65997-05-9	4-6	0.10	0.000600
			Octanedionic Acid	505-48-6	0.2-0.9	0.03	0.000180
			Thixotropic Agent	8001-78-3	0.5max.	0.15	0.000900
Body	Epoxy Molding	1.863	Si-oxide amorphous	7631-86-9	60-80	74.50	1.387935
			Epoxy resin	29690-82-2	10-30	15.50	0.288765
			Phenol-formaldehyde polymer	9003-35-4	5-10	6.30	0.117369
			Zinc borate hydrate	138265-88-0	1-5	3.40	0.063342
			Carbon black	1333-86-4	0.1-1	0.30	0.005589
Lead Frame	Lead Frame	2.55	Cu	7440-50-8	99.95	99.96	2.54898
			Others	—	0.05 max.	0.04	0.00102
Dice	Dice	0.512	Si	7440-21-3	93.45	93.48	0.47862
			Pb	7439-92-1	3.5	3.49	0.01787
			SiO ₂	14808-60-7	2	2.01	0.01029
			Al ₃ O ₂	1344-28-1	0.5	0.49	0.00251
			Au	7440-57-5	0.5	0.49	0.00251
			Others	—	0.05	0.04	0.00020

Note: Lead (Pb) in high melting temperature type solders and in glass of electronic components are exempted from RoHS directive (EU Directive 2011/65/EU).

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Proudct Package Material Disclosure (Diode)

Package Type: SOD-323 HAF

Weight: 4.6mg / pc

Make up of material	Material	Weight (mg)	Substance in material	CAS #	Content Spec. (%)	Content (%)	Substance Weight (mg)
Plating	Tin	0.034	Sn	7440-31-5	99.95 min.	99.97	0.0339898
			Others	—	0.05 max.	0.03	0.0000102
Body	Epoxy Molding	3.4042	Silica Fused	60676-86-0	75-90	85.0	2.8935700
			Epoxy Resin	29690-82-2	5-10	8.7	0.2961654
			Phenolic Resin	9003-35-4	2-8	6.0	0.2042520
			Pigment	1333-86-4	0.1-0.5	0.3	0.0102126
Bonding Wire	Gold Wire	0.0068	Au	7440-57-5	99.99 min.	99.998	0.006799864
			Others	—	0.01 max.	0.002	0.00000014
Lead Frame	Lead Frame	1.105	Alloy (Ni & Fe)	12645-50-0	98.636	98.636	1.0899278
			Cu	7440-50-8	0.168	0.168	0.0018564
			Ag	7440-22-4	1.196	1.196	0.0132158
Dice	Wafer	0.05	Si	7440-21-3	94.1	94.1	0.04705
			Al	7429-90-5	0.1	0.1	0.00005
			Au	7440-57-5	5.8	5.8	0.0029

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Product Package Material Disclosure (Diode)

Package Type: SOT-23 HAF (Single Diode)

Weight: 8.72mg / pc

Make up of material	Material	Weight (mg)	Substance in material	CAS #	Content Spec. (%)	Content (%)	Substance Weight (mg)
Plating	Tin	0.14	Sn	7440-31-5	99.95 min.	99.97	0.139958
			Others	—	0.05 max.	0.03	0.000042
Body	Epoxy Molding	6.03555	Silica Fused	60676-86-0	75-90	85.0	5.1302175
			Epoxy Resin	29690-82-2	5-10	8.7	0.52509285
			Phenolic Resin	9003-35-4	2-8	6.0	0.362133
			Pigment	1333-86-4	0.1-0.5	0.3	0.01810665
Bonding Wire	Gold Wire	0.00575	Au	7440-57-5	99.99 min.	99.998	0.005749885
			Others	—	0.01 max.	0.002	0.000000115
Lead Frame	Lead Frame	2.526	Alloy (Ni & Fe)	12645-50-0	98.636	98.636	2.47727346
			Cu	7440-50-8	0.168	0.168	0.00962406
			Ag	7440-22-4	1.196	1.196	0.03910248
Dice	Wafer	0.0127	Si	7440-21-3	94.1	94.1	0.0119507
			Al	7429-90-5	0.1	0.1	0.0000127
			Au	7440-57-5	5.8	5.8	0.0007366

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TOP DYNAMIC



Product Package Material Disclosure (Diode)

Package Type: SOT-23 HAF (Double Diode)

Weight: 8.72mg / pc

Make up of material	Material	Weight (mg)	Substance in material	CAS #	Content Spec. (%)	Content (%)	Substance Weight (mg)
Plating	Tin	0.14	Sn	7440-31-5	99.95 min.	99.97	0.139958
			Others	—	0.05 max.	0.03	0.000042
Body	Epoxy Molding	6.0171	Silica Fused	60676-86-0	75-90	85.0	5.114535
			Epoxy Resin	29690-82-2	5-10	8.7	0.5234877
			Phenolic Resin	9003-35-4	2-8	6.0	0.361026
			Pigment	1333-86-4	0.1-0.5	0.3	0.0180513
Bonding Wire	Gold Wire	0.0115	Au	7440-57-5	99.99 min.	99.998	0.01149977
			Others	—	0.01 max.	0.002	0.00000023
Lead Frame	Lead Frame	2.526	Alloy (Ni & Fe)	12645-50-0	98.636	98.636	2.47727346
			Cu	7440-50-8	0.168	0.168	0.00962406
			Ag	7440-22-4	1.196	1.196	0.03910248
Dice	Wafer	0.0254	Si	7440-21-3	94.1	94.1	0.0239014
			Al	7429-90-5	0.1	0.1	0.0000254
			Au	7440-57-5	5.8	5.8	0.0014732

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Proudct Package Material Disclosure (Diode)

Package Type: SOT-26 HAF

Weight: 15.34mg / pc

Make up of material	Material	Weight (mg)	Substance in material	CAS #	Content Spec. (%)	Content (%)	Substance Weight (mg)
Plating	Tin	0.1859	Sn	7440-31-5	99.9 min.	99.97	0.18584
			Others	—	0.02-0.1	0.03	0.00006
Body	Epoxy Molding	8.214	Silica Fused	60676-86-0	75-90	85.0	6.9819000
			Epoxy Resin	29690-82-2	5-10	8.7	0.7146180
			Phenolic Resin	9003-35-4	2-8	6	0.49284
			Carbon Black	1333-86-4	0.1-0.5	0.3	0.0246420
Bonding Wire	Gold Wire	0.015	Au	7440-57-5	99.99 min.	99.998	0.0149997
			Others	—	0.01 max.	0.002	0.0000003
Adhesive	Silver Glue	0.0756	Ag	7440-22-4	70-80	80	0.06048
			Bisphenol F	28064-14-4	10-20	15	0.01134
			2-Ethyl Henxyl Glycidyl Ether	2461-15-6	0-10	5	0.00378
Lead Frame	Lead Frame	6.583	Cu	7440-50-8	97.3 max.	97	6.3855100
			Fe	7439-89-6	0.1 min.	0.27	0.0177741
			P	7723-14-0	0.03 min.	0.03	0.0019749
			Ag	7440-22-4	2.5 Max	2.70	0.1777410
Dice	Wafer	0.2665	Si	7440-21-3	94.1	94.1	0.2507765
			Al	7429-90-5	0.1	0.1	0.0002665
			Au	7440-57-5	5.8	5.8	0.0154570

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Product Package Material Disclosure (Diode)

Package Type: CFP15 HAF

Weight: 88.6mg / pc

Make up of material	Material	Weight (mg)	Substance in material	CAS #	Content Spec. (%)	Content (%)	Substance Weight (mg)
Plating	Tin	0.4	Sn	7440-31-5	99.9 min.	99.97	0.3999
			Others	—	0.01 max.	0.03	0.0001
Solder	Solder	2.5	Ag	7440-22-4	2-2.5	2.45	0.0613
			Sn	7440-31-5	4-4.25	4.92	0.1230
			Pb	7439-92-1	78.6-83.2	92.35	2.3088
			Polymerized Rosin	65997-05-9	4-6	0.10	0.0025
			Octanedionic Acid	505-48-6	0.2-0.9	0.03	0.0008
			Thixotropic Agent	8001-78-3	0.5max.	0.15	0.0038
Body	Epoxy Molding	33.3	Crystalline Silica (Quartz)	14808-60-7	76	75.80	25.2414
			Phenolic Resin Water-Soluble	9003-35-4	7	6.80	2.2644
			Epoxy Resin	24969-06-0	13	12.90	4.2957
			Triphenyl Phosphate	115-86-6	0.2	0.22	0.0733
			Plyaspartic Acid	55719-33-0	0.7	0.71	0.2364
			Gama-glycidoxypopyl Trime	2530-83-8	1	0.98	0.3263
			Firebrake (R) ZB	138265-88-0	1.7	1.72	0.5728
			Carbon Black	1333-86-4	0.1-1	0.87	0.2897
Lead Frame	Lead Frame	46.1	Cu	7440-50-8	99.8 max.	99.80	46.0078
			Fe	7439-89-6	0.1 min.	0.15	0.0692
			P	7723-14-0	0.03 min.	0.05	0.0231
Dice	Dice	6.3	Si	7440-21-3	98.77	98.77	6.2225
			Ag	7440-02-0	1.1	1.1	0.0693
			Ni	7440-02-0	0.09	0.09	0.0057
			Ti	7440-32-6	0.04	0.04	0.0025

Note: Lead (Pb) in high melting temperature type solders is exempted from RoHS directive (EU Directive 2011/65/EC).

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TOP DYNAMIC



Product Package Material Disclosure (Diode)

Package Type: CFP15A HAF

Weight: 105.8mg / pc

Make up of material	Material	Weight (mg)	Substance in material	CAS #	Content Spec. (%)	Content (%)	Substance Weight (mg)
Plating	Tin	0.4	Sn	7440-31-5	99.9 min.	99.97	0.399880
			Others	—	0.01 max.	0.03	0.000120
Solder	Solder	2.8	Ag	7440-22-4	2-2.5	2.45	0.068600
			Sn	7440-31-5	4-4.25	4.92	0.137760
			Pb	7439-92-1	78.6-83.2	92.35	2.585800
			Polymerized Rosin	65997-05-9	4-6	0.10	0.002800
			Octanedionic Acid	505-48-6	0.2-0.9	0.03	0.000840
			Thixotropic Agent	8001-78-3	0.5max.	0.15	0.004200
Body	Epoxy Molding	44	Crystalline Silica (Quartz)	14808-60-7	60~90	78.00	34.320000
			Epoxy Resin	24969-06-0	10~30	12.00	5.280000
			Phenolic Resin Water-Soluble	9003-35-4	5~20	7.50	3.300000
			Carbon Black	1333-86-4	0~2	0.50	0.220000
			Aluminum hydroxide	Secret	0~15	2.00	0.880000
Lead Frame	Lead Frame	51.5	Cu	7440-50-8	99.8 max.	99.80	51.397000
			Fe	7439-89-6	0.1 min.	0.15	0.077250
			P	7723-14-0	0.03 min.	0.05	0.025750
Dice	Wafer	7.1	Si	7440-21-3	93.5~93.7	93.65	6.649150
			Ag	7440-22-4	5.2~5.4	5.34	0.379140
			SiO ₂	7631-86-9	0.42~0.44	0.43	0.030530
			Ni	7440-02-0	0.36~0.38	0.37	0.026270
			Pt	7440-06-4	0.03~0.04	0.035	0.002485
			Ti	7440-32-6	0.11~0.13	0.12	0.008520
			V	7440-62-2	0.03~0.05	0.04	0.002840
			As	7440-38-2	0.01 max.	0.008	0.000568
			P	7723-14-0	0.01 max.	0.007	0.000497

Note: Lead (Pb) in high melting temperature type solders is exempted from RoHS directive (EU Directive 2011/65/EC).

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