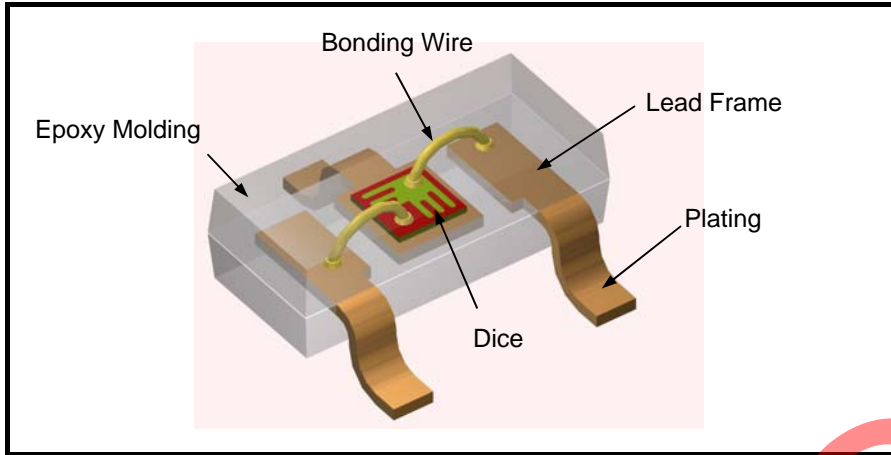


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Chemical Composition of Transistor (SOT-23)



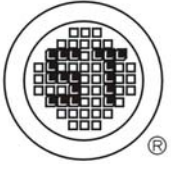
Weight: 8.72 mg / pc

15-Nov-07

Make up of material	Chemical Composition	CAS No.	Content Spec. (%)	Content (%)	Substance Weight (mg)
Plating (0.14 mg)	Sn	7440-31-5	99.95 min.	99.97	0.139958
	Others	—	0.05 max.	0.03	0.000042
Epoxy Molding (5.9526 mg)	Crystalline Silica (Quartz)	14808-60-7	70 - 90	78.2	4.6549332
	Cristobalite	14464-46-1	0 - 1	0.5	0.029763
	Bisphenol-A Epoxy Resin	1675-54-3	3 - 20	10	0.59526
	Phenolic Resin Water-Soluble	9003-35-4	2 - 15	9.5	0.565497
	Antimony Trioxide	1309-64-4	0.1 - 3	1.5	0.089289
	Carbon Black	1333-86-4	0.1 - 0.5	0.3	0.0178578
Bonding Wire (0.076 mg)	Au	7440-57-5	99.99 min.	99.998	0.07599848
	Others	—	0.01 max.	0.002	0.00000152
Lead Frame (2.526 mg)	Alloy (Ni & Fe)	12645-50-0	98.071	98.071	2.47727346
	Cu	7440-50-8	0.381	0.381	0.00962406
	Ag	7440-22-4	1.548	1.548	0.03910248
Dice (0.0254 mg)	Basis	Si	7440-21-3	93.2	0.0236728
	Obverse Metal	Al	7429-90-5	0.8	0.0002032
	Back Metal	Au	7440-57-5	6	0.001524

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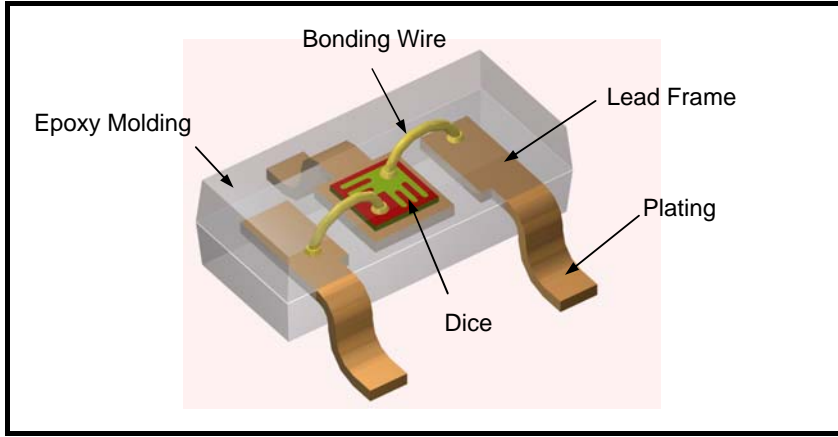


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Chemical Composition of Transistor (SOT-23 HAF)



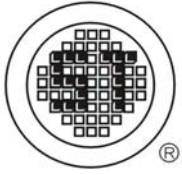
Weight: 8.72 mg / pc

16-Apr-09

Make up of material	Chemical Composition	CAS No.	Content Spec. (%)	Content (%)	Substance Weight (mg)
Plating (0.14 mg)	Sn	7440-31-5	99.95 min.	99.97	0.139958
	Others	—	0.05 max.	0.03	0.000042
Epoxy Molding (5.9526 mg)	Silica Fused	60676-86-0	75-90	85.0	5.05971
	Epoxy Resin	29690-82-2	5-10	8.7	0.5178762
	Phenolic Resin	9003-35-4	2-8	6	0.357156
	Pigment	1333-86-4	0.1-0.5	0.3	0.0178578
Bonding Wire (0.076 mg)	Au	7440-57-5	99.99 min.	99.998	0.07599848
	Others	—	0.01 max.	0.002	0.00000152
Lead Frame (2.526 mg)	Alloy (Ni & Fe)	12645-50-0	98.071	98.071	2.47727346
	Cu	7440-50-8	0.381	0.381	0.00962406
	Ag	7440-22-4	1.548	1.548	0.03910248
Dice (0.0254 mg)	Basis	Si	7440-21-3	93.2	0.0236728
	Obverse Metal	Al	7429-90-5	0.8	0.0002032
	Back Metal	Au	7440-57-5	6	0.001524

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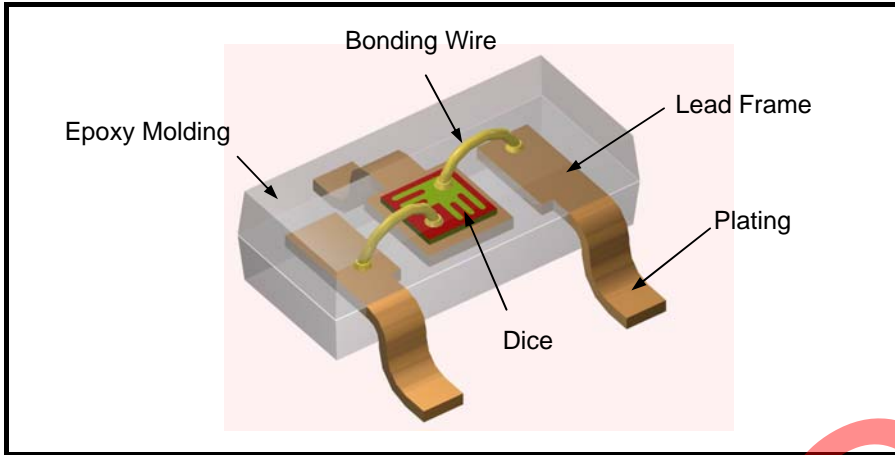


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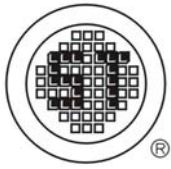
Chemical Composition of Transistor (SOT-323)



Weight: 5 mg / pc

15-Nov-07

Make up of material	Chemical Composition	CAS No.	Content Spec. (%)	Content (%)	Substance Weight (mg)	
Plating (0.08 mg)	Sn	7440-31-5	99.95 min.	99.97	0.079976	
	Others	—	0.05 max.	0.03	0.000024	
Epoxy Molding (3.4153 mg)	Crystalline Silica (Quartz)	14808-60-7	70 - 90	78.2	2.6707646	
	Cristobalite	14464-46-1	0 - 1	0.5	0.0170765	
	Bisphenol-A Epoxy Resin	1675-54-3	3 - 20	10	0.34153	
	Phenolic Resin Water-Soluble	9003-35-4	2 - 15	9.5	0.3244535	
	Antimony Trioxide	1309-64-4	0.1 - 3	1.5	0.0512295	
Bonding Wire (0.044 mg)	Carbon Black	1333-86-4	0.1 - 0.5	0.3	0.0102459	
	Au	7440-57-5	99.99 min.	99.998	0.04399912	
Lead Frame (1.448 mg)	Others	—	0.01 max.	0.002	0.00000088	
	Alloy (Ni & Fe)	12645-50-0	98.071	98.071	1.42006808	
	Cu	7440-50-8	0.381	0.381	0.00551688	
Dice (0.0127 mg)	Ag	7440-22-4	1.548	1.548	0.02241504	
	Basis	Si	7440-21-3	93.2	0.0118364	
	Obverse Metal	Al	7429-90-5	0.8	0.8	0.0001016
	Back Metal	Au	7440-57-5	6	6	0.000762

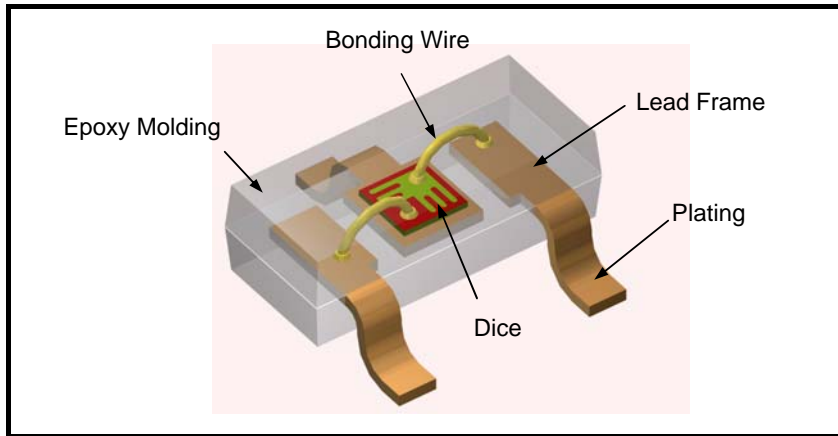


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Chemical Composition of Transistor (SOT-323 HAF)



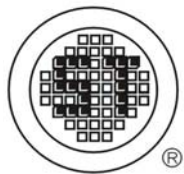
Weight: 5 mg / pc

16-Apr-09

Make up of material	Chemical Composition	CAS No.	Content Spec. (%)	Content (%)	Substance Weight (mg)
Plating (0.08 mg)	Sn	7440-31-5	99.95 min.	99.97	0.079976
	Others	—	0.05 max.	0.03	0.000024
Epoxy Molding (3.4153 mg)	Silica Fused	60676-86-0	75-90	85.0	2.903005
	Epoxy Resin	29690-82-2	5-10	8.7	0.297131
	Phenolic Resin	9003-35-4	2-8	6	0.204918
	Pigment	1333-86-4	0.1-0.5	0.3	0.010246
Bonding Wire (0.044 mg)	Au	7440-57-5	99.99 min.	99.998	0.04399912
	Others	—	0.01 max.	0.002	0.00000088
Lead Frame (1.448 mg)	Alloy (Ni & Fe)	12645-50-0	98.071	98.071	1.42006808
	Cu	7440-50-8	0.381	0.381	0.00551688
	Ag	7440-22-4	1.548	1.548	0.02241504
Dice (0.0127 mg)	Basis	Si	7440-21-3	93.2	0.0118364
	Obverse Metal	Al	7429-90-5	0.8	0.0001016
	Back Metal	Au	7440-57-5	6	6

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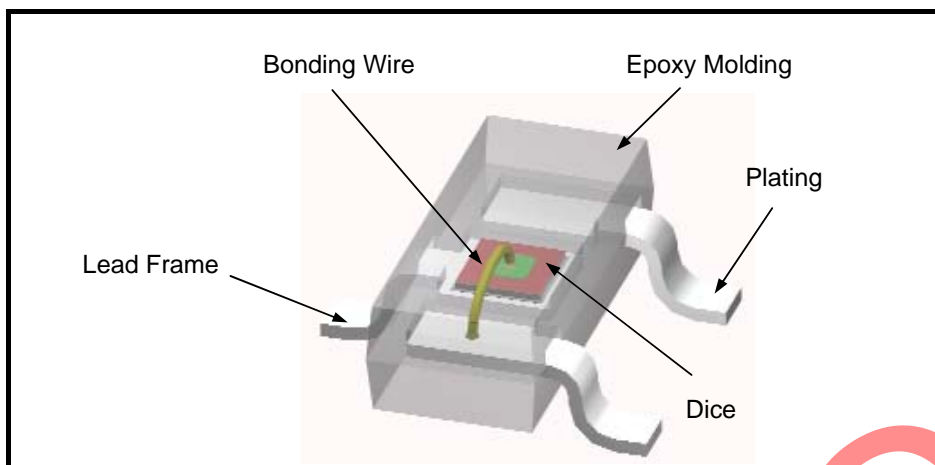


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Chemical Composition of Transistor (SOT-523)



Weight: 2.390mg / pc

2007-11-15

Make up of material	Chemical Composition	CAS No.	Content Spec. (%)	Content (%)	Substance Weight (mg)
Plating (0.0736mg)	Sn	7440-31-5	99.95 min.	99.97	0.07357792
	Others	—	0.05 max.	0.03	0.00002208
Epoxy Molding (1.3715mg)	Crystalline Silica (Quartz)	14808-60-7	70 - 90	78.2	1.07251300
	Cristobalite	14464-46-1	0 - 1	0.5	0.00685750
	Bisphenol-A Epoxy Resin	1675-54-3	3 - 20	10	0.13715000
	Phenolic Resin Water-Soluble	9003-35-4	2 - 15	9.5	0.13029250
	Antimony Trioxide	1309-64-4	0.1 - 3	1.5	0.02057250
	Carbon Black	1333-86-4	0.1 - 0.5	0.3	0.00411450
Bonding Wire (0.0045mg)	Au	7440-57-5	99.99 min.	99.998	0.00449991
	Others	—	0.01 max.	0.002	0.00000009
Lead Frame (0.8924mg)	Alloy (Ni & Fe)	12645-50-0	98.071	98.071	0.87518560
	Cu	7440-50-8	0.381	0.381	0.00340004
	Ag	7440-22-4	1.548	1.548	0.01381435
Dice (0.0480mg)	Basis	Si	7440-21-3	93.2	0.04473600
	Obverse Metal	Al	7429-90-5	0.8	0.00038400
	Back Metal	Au	7440-57-5	6	0.00288000

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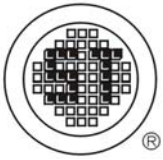
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Certificate No. M2012-002

ISO14001 : 2004
Certificate No. 7116

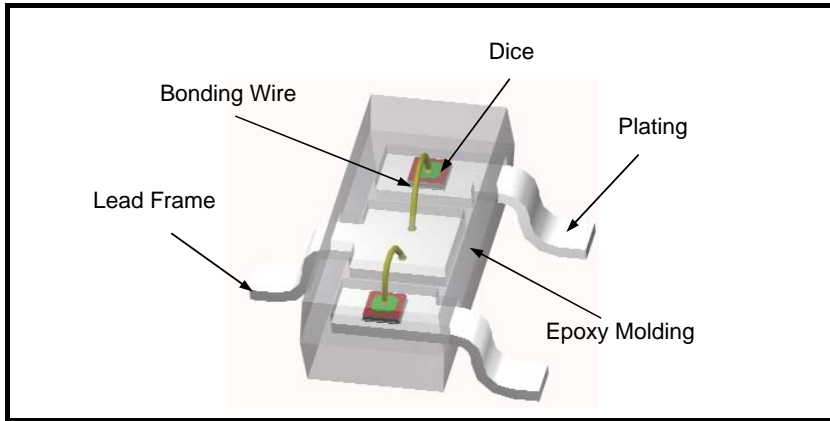
ISO 9001 : 2008
Certificate No. 0500098

BS-OHSAS 18001 : 2007
Certificate No. 7116

IECQ QC 080000
Certificate No. PRC-1896-1184



Chemical Composition of Transistor (SOT-523 HAF)



Weight: 2.394mg / pc

2011-6-27

Make up of material	Chemical Composition	CAS No.	Content Spec. (%)	Content (%)	Substance Weight (mg)
Plating (0.0736mg)	Sn	7440-31-5	99.95 min.	99.97	0.07357792
	Others	—	0.05 max.	0.03	0.00002208
Epoxy Molding (1.3711mg)	Silica Fused	60676-86-0	75-90	85	1.165435
	Epoxy Resin	29690-82-2	5-10	8.7	0.1192857
	Phenolic Resin	9003-35-4	2-8	6	0.082266
	Pigment	1333-86-4	0.1-0.5	0.3	0.0041133
Bonding Wire (0.0089mg)	Au	7440-57-5	99.99 min.	99.998	0.008899822
	Others	—	0.01 max.	0.002	0.000000178
Lead Frame (0.8924mg)	Alloy(Ni&Fe)	69012-55-1	98.071	98.071	0.875185604
	Cu	7440-50-8	0.381	0.381	0.003400044
	Ag	7440-22-4	1.548	1.548	0.013814352
Dice (0.0480mg)	Basis	Si	7440-21-3	93.2	0.04473600
	Obverse Metal	Al	7429-90-5	0.8	0.00038400
	Back Metal	Au	7440-57-5	6	0.00288000

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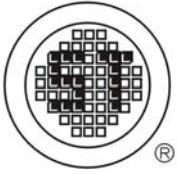
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電郵地址 E-mail: st@semtech.com.hk

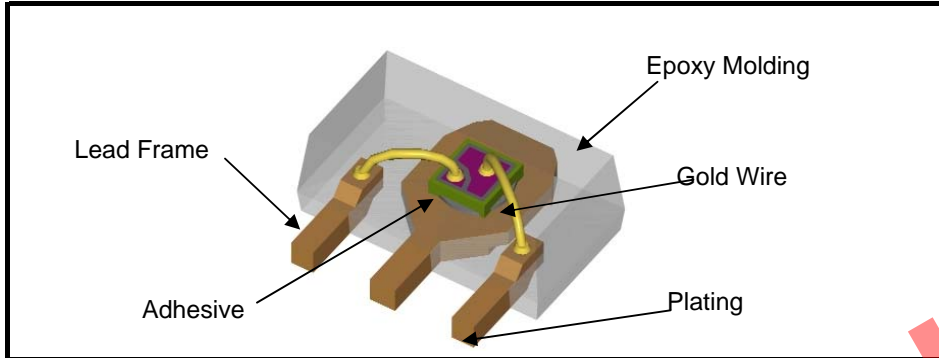
網址 Website: http://www.semtech.com.hk



ISO/TS 16949 : 2009 Certificate No. K3121032
 ISO14001 : 2004 Certificate No. 7116
 ISO 9001 : 2008 Certificate No. 020308
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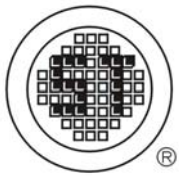
Chemical Composition of Transistor (SOT-89)



Weight: 49.7 mg / pc

15-Nov-07

Make up of material	Chemical Composition	CAS No.	Content Spec. (%)	Content (%)	Substance Weight (mg)
Plating (0.4mg)	Sn	7440-31-5	99.95 min.	99.97	0.39988
	Others	—	0.05 max.	0.03	0.00012
Epoxy Molding (27.75mg)	Crystalline Silica (Quartz)	14808-60-7	70 - 90	78.2	21.7005
	Cristobalite	14464-46-1	0 - 1	0.5	0.13875
	Bisphenol-A Epoxy Resin	1675-54-3	3.0 - 20	10.0	2.775
	Phenolic Resin Water-Soluble	9003-35-4	2.0 - 15	9.5	2.63625
	Antimony Trioxide	1309-64-4	0.1 - 3.0	1.5	0.41625
	Carbon Black	1333-86-4	0.1 - 0.5	0.3	0.08325
Gold Wire (0.05mg)	Au	7440-57-5	99.99 min.	99.998	0.049999
	Others	—	0.01 max.	0.002	0.000001
Adhesive(0.1mg)	Ag	7440-22-4	70-80	80	0.08
	Bisphenol F	28064-14-4	10-20	15	0.015
	2-Ethyl Hexyl Glycidyl Ether	2461-15-6	0-10	5	0.005
Lead Frame (21mg)	Cu	7440-50-8	100	100	21
Dice (0.5mg)	Basis	Si	7440-21-3	93.2	0.466
	Obverse Metal	Al	7429-90-5	0.8	0.004
	Back Metal	Au	7440-57-5	6	0.03

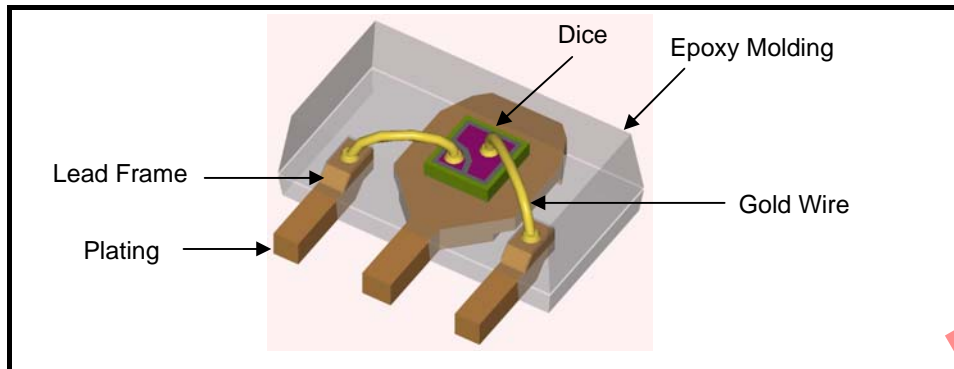


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Chemical Composition of Transistor (SOT-89 HAF)

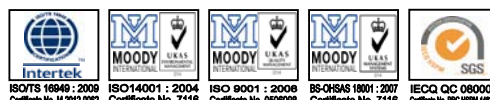


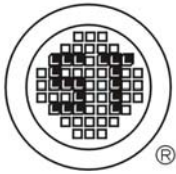
Weight: 49.7 mg / pc

08-Jan-10

Make up of material	Chemical Composition	CAS No.	Content Spec. (%)	Content (%)	Substance Weight (mg)
Plating (0.4mg)	Sn	7440-31-5	99.95 min.	99.97	0.39988
	Others	—	0.05 max.	0.03	0.00012
Epoxy Molding (27.75mg) (SG-8300CS)	Silica Fused	60676-86-0	75-90	85.0	23.5875
	Epoxy Resin	29690-82-2	5-10	8.7	2.41425
	Phenolic Resin	9003-35-4	2-8	6	1.665
	Pigment	1333-86-4	0.1-0.5	0.3	0.08325
Gold Wire (0.05mg)	Au	7440-57-5	99.99 min.	99.998	0.049999
	Others	—	0.01 max.	0.002	0.000001
Adhesive(0.1mg)	Ag	7440-22-4	70-80	80	0.08
	Bisphenol F	28064-14-4	10-20	15	0.015
	2-Ethyl Hexyl Glycidyl Ether	2461-15-6	0-10	5	0.005
Lead Frame (20.89mg)	Cu	7440-50-8	100	100	20.890000
Dice (0.51mg)	Basis	Si	7440-21-3	93.2	0.466
	Obverse Metal	Al	7429-90-5	0.8	0.004
	Back Metal	Au	7440-57-5	6	6

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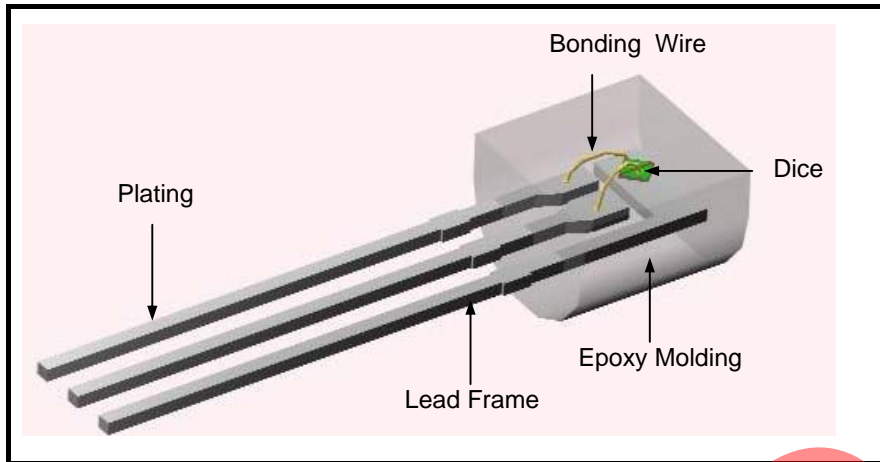


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Chemical Composition of Transistor (TO-92)



Weight: 190 mg / pc

29-Mar-08

Make up of material	Chemical Composition	CAS No.	Content Spec. (%)	Content (%)	Substance Weight (mg)
Plating (2.06 mg)	Sn	7440-31-5	99.95 min.	99.97	2.059382
	Others	—	0.05 max.	0.03	0.000618
Epoxy Molding (109.7185 mg)	Crystalline Silica (Quartz)	14808-60-7	70 - 90	78.2	85.799867
	Cristobalite	14464-46-1	0 - 1	0.5	0.5485925
	Bisphenol-A Epoxy Resin	1675-54-3	3 - 20	10	10.97185
	Phenolic Resin Water-Soluble	9003-35-4	2 - 15	9.5	10.4232575
	Antimony Trioxide	1309-64-4	0.1 - 3	1.5	1.6457775
	Carbon Black	1333-86-4	0.1 - 0.5	0.3	0.3291555
Bonding Wire (0.0065 mg)	Cu	7440-50-8	99.99 min.	99.998	0.00649987
	Others	—	0.01 max.	0.002	0.00000013
Lead Frame (77.85 mg)	Fe	7439-89-6	98.569	98.569	76.7359665
	Cu	7440-50-8	0.955	0.955	0.7434675
	Ag	7440-22-4	0.476	0.476	0.370566
Dice (0.365 mg)	Basis	Si	7440-21-3	93.2	0.34018
	Obverse Metal	Al	7429-90-5	0.8	0.00292
	Back Metal	Au	7440-57-5	6	0.0219

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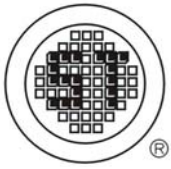
傳真 Fax: (852) 2688 6051

電郵地址 E-mail: st@semtech.com.hk

網址 Website: http://www.semtech.com.hk



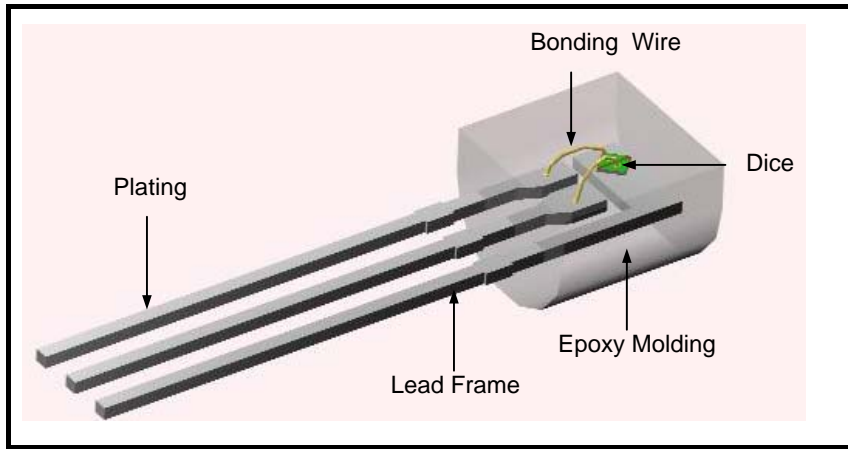
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 ISO 14001 : 2004 Certificate No. 7116
 ISO 9001 : 2008 Certificate No. 0500989
 BS-OHSAS 18001 : 2007 Certificate No. 7116
 IECQ QC 080000 Certificate No. PCC/188/1481



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Subsidiary of a Sino-Tech International(BVI) Limited

Chemical Composition of Transistor (TO-92 HAF)



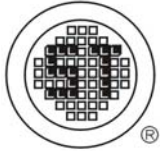
Weight: 190 mg / pc

2009-9-8

Make up of material	Chemical Composition	CAS No.	Content Spec. (%)	Content (%)	Substance Weight (mg)
Plating (2.06 mg)	Sn	7440-31-5	99.95 min.	99.97	2.059382
	Others	—	0.05 max.	0.03	0.000618
Epoxy Molding (109.7185 mg)	Silica	14808-60-7	65 - 80	75.0	82.288875
	Epoxy Resin	Trade secret	2 - 10	9.5	10.4232575
	Phenol Resin	Trade secret	2 - 10	8.0	8.77748
	Flame Retardants	Trade secret	<5	4.5	4.9373325
	Pigment	1333-86-4	<2	1.5	1.6457775
	Coupling Agents	2530-83-8	<2	1.5	1.6457775
Bonding Wire (0.0065 mg)	Cu	7440-50-8	99.99 min.	99.998	0.00649987
	Others	—	0.01 max.	0.002	0.00000013
Lead Frame (77.85 mg)	Fe	7439-89-6	98.569	98.569	76.7359665
	Cu	7440-50-8	0.955	0.955	0.7434675
	Ag	7440-22-4	0.476	0.476	0.370566
Dice (0.365 mg)	Basis	Si	7440-21-3	93.2	0.34018
	Obverse Metal	Al	7429-90-5	0.8	0.00292
	Back Metal	Au	7440-57-5	6	0.0219

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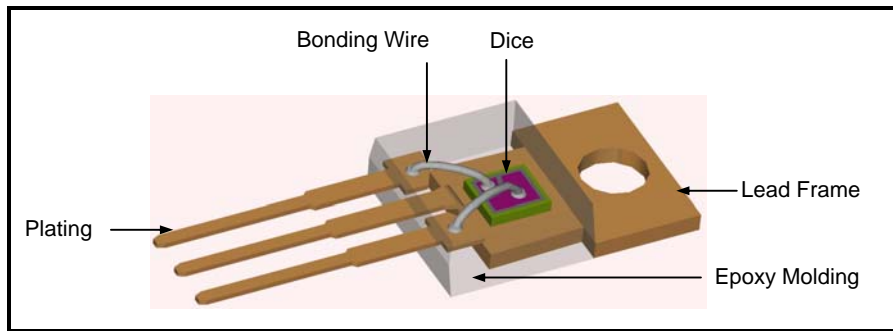


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SEMTECH ELECTRONICS LIMITED

Subsidiary of a Sino-Tech International(BVI) Limited

Chemical Composition of Transistor (TO-220)



Weight: 1862mg / pc

11-Jun-10

Make up of material	Chemical Composition	CAS No.	Content Spec. (%)	Content (%)	Substance Weight (mg)
Plating (58.25 mg)	Sn	7440-31-5	99.95 min.	99.97	58.2325
	Others	—	0.05 max.	0.03	0.0175
Solder (11.5 mg)	Pb	7439-92-1	78.3	78.3	9.0045
	Sn	7440-31-5	6.96	6.96	0.8004
	Ag	7440-22-4	1.74	1.74	0.2001
	Colophony	8050-9-7	5.85	5.85	0.6728
	Hexanedioic Acid	42331-63-5	0.13	0.13	0.0150
	Active Additive	—	1.17	1.17	0.1346
	Solvent	—	5.85	5.85	0.6728
	Epoxy Molding (584.736 mg)	Epoxy Resin	61788-97-4	5 - 20	12
Phenolic Resin		9003-35-4	5 - 10	8	46.7789
4-methylimidazole		822-36-6	1 max.	0.5	2.9237
SiO ₂		7440-21-3	70 - 91	76.9	449.6620
Brominated Epoxy Resin		69928-70-1	1.5 max.	0.8	4.6779
Antimony Trioxide		1309-64-4	1.5 max.	0.8	4.6779
Carnauba wax		8015-86-9	1 max.	0.5	2.9237
Carbon Black		1333-86-4	1 max.	0.5	2.9237
Bonding Wire (0.014 mg)	Al	7429-90-5	98.5 min.	98.5	0.0138
	Si	7440-21-3	1.5 max.	1.5	0.0002
Lead Frame (1205 mg)	Cu	7440-50-8	99.87	99.869	1203.4215
	Fe	7439-89-6	0.03	0.03	0.3615
	P	7723-14-0	0.1	0.1	1.2050
	Ni	7440-02-0	0.001	0.001	0.0121
Dice (2.5 mg)	Si	7440-21-3	99.9	99.9	2.4975
	Al	7429-90-5	0.1	0.1	0.0025

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