

Environmental Management and Materials Information

Product Content Information for: DS18B20+

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Qualifications [Top](#)

Lead-Free Qualified	Yes
REACH	Yes: 19-Dec-12
RoHS Qualified	Yes
Green	No
Moisture Sensitivity Level	Not Available - Contact Us
Flammability Meets UL-94 (V-0 Rating)	Yes
Assembler Qualified	Cirtek

Package Description [Top](#)

Package Code	Q3+1
Package Type	TO92 *
Package Description	TO92
Package Option	Standard
Footprint Area (mm²)	19.5
Body Size	185
Pin Count	3
Unit Weight in Grams	0.2115735236

Chemical Composition Summary [Top](#)

[Maxim NIA/NIU Substance List \(PDF, 24k\)](#)

Substance	CAS Number	Amount (grams)	% of Unit Weight
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Aluminum (Al)	7429-90-5	0	0
Antimony (Sb ₂ O ₃)	1309-64-4	0	0
BCB Resin		0	0
Bromine (Br)	7726-95-6	0	0
Carbon (C)	7440-44-0	0	0
Carbon Black	1333-86-4	0.00055	0.25996
Ceramic (BaTiO ₃)	12047-27-7	0	0
Chromium (Cr)	7440-47-3	0	0
Cobalt (Co)	7440-48-4	0	0
Copper (Cu)	7440-50-8	0.09012843	42.59911
Gold (Au)	7440-57-5	0.001579842	0.74671
Indium (In)	7440-74-6	0	0
Insulator (Polyimide)		0	0
Insulator Film		0	0
Iron (Fe)	7439-89-6	0.00013545	0.06402
FeO ₂	12411-15-36	0	0
Lead (Pb)	7439-92-1	3.6816e-06	0.00174
Magnesium (Mg)	7439-95-4	0	0
Manganese (Mn)	7439-96-5	0	0
MnO ₃		0	0
Nickel (Ni)	7440-02-0	0	0
NiPdAu		0	0
Nickel-V (NiV)		0	0
Palladium (Pd)	7440-05-3	0	0
Phosphorus (P)	7723-14-0	3.612e-05	0.01707
Silica (SiO ₂)	11126-22-0	0.09679	45.74769
Silicon (Si)	7440-21-3	0.0018	0.85077
Silver (Ag)	7440-22-4	0.00017	0.08035
Solder Mask		0	0
Solder Paste		0	0
Spheron Polymer Passivation		0	0
Sulfur (S)	7704-34-9	0	0
Tin (Sn)	7440-31-5	0.00708	3.34635
Titanium (Ti)	7440-32-6	0	0
Titanium-W (TiW)		0	0
Tungsten (W)	7440-33-7	0	0
Vanadium (V)	7440-62-2	0	0

Zinc (Zn)	7440-66-6	0	0
ZnO	1314-13-2	0	0
Zirconium (Zr)	7440-67-7	0	0

Detailed Package Component Data [Top](#)

Bond Wire Components

Summary

Component Weight 0.001579842

Substance	Amount (grams)	% of Component Weight	% of Unit Weight
Gold (Au)	0.001579842	100.00000	0.74671
Aluminum (Al)	0	0	0

Die Attach Epoxy Components

Summary

Die Attach Material 84-1 LMISR4

Component Weight 0.00019

Substance	Amount (grams)	% of Component Weight	% of Unit Weight
Aromatic Amine	2e-05	10.52632	0.00945
Copper (Cu)	0	0	0
Diester	0	0	0
Epoxy	0	0	0
Functionalized Ester	0	0	0
Functionalized Urethane	0	0	0
Indium (In)	0	0	0
Lactone		0	0
Lead (Pb)	0	0	0
Polymeric		0	0
Polyoxypropylenediamine	0	0	0
Resin		0	0
Silver Filler (Ag)	0.00017	89.47368	0.08035
Tin (Sn)	0	0	0
Other	0	0	0

Lead Finish/Plating Components

Summary

Lead Finish Plating

100% matte tin

Assembly Lead Finish Process

Component Weight

0.0070836816

Substance	Amount (grams)	% of Component Weight	% of Unit Weight
Lead (Pb)	3.6816e-06	0.05197	0.00174
Tin (Sn)	0.00708	99.94803	3.34635
NiPdAu		0	0
Gold (Au)		0	0
Nickel (Ni)		0	0

Lead Frame Components

Summary

Lead Frame Material

Copper C194

Component Weight

0.0903

Substance	Amount (grams)	% of Component Weight	% of Unit Weight
Aluminum (Al)		0	0
Carbon (C)		0	0
Chromium (Cr)		0	0
Cobalt (Co)		0	0
Copper (Cu)	0.09012843	99.81000	42.59911
Gold (Au)		0	0
Iron (Fe)	0.00013545	0.15000	0.06402
Lead (Pb)		0	0
Magnesium (Mg)		0	0
Manganese (Mn)		0	0
Nickel (Ni)		0	0
Palladium (Pd)		0	0
Phosphorus (P)	3.612e-05	0	0
Silicon (Si)		0	0
Silver (Ag)		0	0
Sulfur (S)		0	0
Tin (Sn)		0	0
Zinc (Zn)		0	0
Zirconium (Zr)		0	0

Mold Compound Components

Summary

Mold Material G600

Resin Type

Component Weight 0.09734

Substance	Amount (grams)	% of Component Weight	% of Unit Weight
Antimony (Sb ₂ O ₃)		0	0
Bromine (Br)		0	0
Carbon Black	0.00055	0.56503	0.25996
Epoxy	0	0	0
Epoxy Cresol Novolac	0.00221	2.27039	1.04455
Metal Hydroxide		0	0
Phenol Novolac		0	0
Silica (SiO ₂)	0.09679	99.43497	45.74769
Resin		0	0
Other	0.00553	5.68112	2.61375

Silicon Chip Components

Substance	Amount (grams)	% of Component Weight	% of Unit Weight
Silicon Chip	0.0018	100	0.85077

Notes:

1. Lead Form: GW - Gull Wing, TH - Through Hole.
 2. Refer to product data sheet to confirm actual wire diameter.
 3. 'ND' means None Detected, negligible amount present.
- * This package may be remarked. If remarked, the package will contain additional homogeneous materials—inks—that are not listed in contents of this report.

This part is qualified as lead-free.

Parts qualified as lead-free can be manufactured and supplied as lead-free, if and only if, the customer makes such requests to the Maxim Business Units for approval. The navigation bar on the EMMI website contains information regarding the lead-free process (e.g. MSL's, Peak reflow Temperatures, JEDEC methods, frequently asked questions and answers, lead-free package tables, and status/qualification plans for particular package types qualified as lead-free or in the qualification process).

This report was generated on 2013-06-14. For additional information, please visit the Maxim/Dallas Environmental Management and Materials Information website located at:

<http://www.maximintegrated.com/emmi>