LM5012QDDARQ1

Quality, reliability & packaging data download

Status: ACTIVE

Report date: 10/23/2023

Assembly site: **Ext-Mfg**

RoHS	Yes
REACH	Yes
Device marking	LM5012
Lead finish/Ball material	NIPDAUAG
MSL rating/Peak reflow	Level-2-260C-1 YEAR
Rating	Automotive

Material content

				Homogeneous Material Level		Component Level	
Component	**Substance**	**CAS Number**	**Amount (mg)**	**Percentage %**	**ppm**	**Percentage %**	**ppm**
Bond Wire							
Copper and Its Alloys	Copper	7440-50-8	0.078679	96.622825	966228	0.080765	808
Precious Metals	Gold	7440-57-5	0.000261	0.320525	3205	0.000268	3
Precious Metals	Palladium	7440-05-3	0.002489	3.056651	30567	0.002555	26
Sub-total	—	—	0.081429	100	1000000	0.083588	836
Die Attach Adhesive							
Precious Metals	Silver	7440-22-4	0.569669	82.000035	820000	0.584773	5848
Thermoplastics	Epoxy	85954-11-6	0.125049	17.999965	180000	0.128365	1284
Sub-total	—	—	0.694718	100	1000000	0.713138	7131
Lead Frame							
Copper and Its Alloys	Copper	7440-50-8	35.907021	97.279998	972800	36.859062	368591
Copper and Its Alloys	Iron	7439-89-6	0.90432	2.450001	24500	0.928297	9283
Copper and Its Alloys	Phosphorus	7723-14-0	0.044293	0.119999	1200	0.045467	455
Zinc and Its Alloys	Zinc	7440-66-6	0.055367	0.150001	1500	0.056835	568
Sub-total	—	—	36.911001	100	1000000	37.889661	378897
Lead Frame Plating							
Nickel and Its Alloys	Nickel	7440-02-0	0.4865	97.300000	973000	0.499399	4994
Precious Metals	Gold	7440-57-5	0.0015	0.300000	3000	0.001540	15
Precious Metals	Palladium	7440-05-3	0.0105	2.100000	21000	0.010778	108
Precious Metals	Silver	7440-22-4	0.0015	0.300000	3000	0.001540	15
Sub-total	—	—	0.5000	100	1000000	0.513257	5133
Mold Compound							
Other Inorganic Materials	Fused Silica	60676-86-0	50.04334	90.000000	900000	51.370192	513702
Other Plastics and Rubber	Carbon Black	1333-86-4	0.222415	0.400000	4000	0.228312	2283
Thermoplastics	Epoxy	85954-11-6	5.337956	9.600000	96000	5.479487	54795
Sub-total	—	—	55.603711	100	1000000	57.077991	570780
Semiconductor Device							
Ceramics / Glass	Doped Silicon	7440-21-3	3.626219	100.000000	1000000	3.722365	37224
Sub-total	—	—	3.626219	100	1000000	3.722365	37224
Total	—	—	97.417078	—	—	100	1000000

MTBF/FIT estimates

MTBF / FIT		MTBF / FIT supporting data							
MTBF	**FIT**	**Usage temp (°C)**	**Conf level (%)**	**Activation energy (eV)**	**Test temp (°C)**	**Test duration (hours)**	**Sample size**	**Fails**	**Additional comments**
5.38×10^8	1.98	55	60	0.7	125	1000	6280	0	—

Qualification summary

No results found

Ongoing reliability monitoring

FAB process reliability data

Fab Process	Reliability Test	Rolling Year (3Q2022 - 2Q2023) Sample Size	Cumulative Sample Size	Disposition
Power BICMOS	Life test 125C, 1000 Hours or Equivalent JEDEC Condition	29548	373295	Pass

Assembly process reliability data

Package Family	Reliability Test	Rolling Year (3Q2022 - 2Q2023) Sample Size	Cumulative Sample Size	Disposition
HSOP, HSSOP	Biased HAST 130C/85%RH, 96 Hours or Equivalent JEDEC Condition	518	10611	Pass
HSOP, HSSOP	High temp storage bake 150C, 1000 Hours or Equivalent JEDEC Condition	1117	7838	Pass
HSOP, HSSOP	Temperature cycle -65/150C, 500 Hours or Equivalent JEDEC Condition	2135	19638	Pass
HSOP, HSSOP	Unbiased HAST 130C/85% RH, 96 Hours or Equivalent JEDEC Condition	1771	16785	Pass

Additional resources

General quality guidelines

Certifications

Conflict minerals specialized disclosure report

Restricted chemical test report

For additional component information, please visit Material content search

For additional information, please contact TI customer support center

Important Notice and Disclaimer

TI PROVIDES TECHNICAL AND RELIABILITY DATA (INCLUDING DATASHEETS), DESIGN RESOURCES (INCLUDING REFERENCE DESIGNS), APPLICATION OR OTHER DESIGN ADVICE, WEB TOOLS, SAFETY INFORMATION, AND OTHER RESOURCES "AS IS" AND WITH ALL FAULTS, AND DISCLAIMS ALL WARRANTIES, EXPRESS AND IMPLIED, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT OF THIRD PARTY INTELLECTUAL PROPERTY RIGHTS.

These resources are intended for skilled developers designing with TI products. You are solely responsible for (1) selecting the appropriate TI products for your application, (2) designing, validating and testing your application, and (3) ensuring your application meets applicablestandards, and any other safety, security, or other requirements.

These resources are subject to change without notice. TI grants you permission to use these resources only for development of an application that uses the TI products described in the resource. Other reproduction and display of these resources is prohibited. No license is granted to any other TI intellectual property right or to any third party intellectual property right. TI disclaims responsibility for, and you will fully indemnify TI and its representatives against, any claims, damages, costs, losses, and liabilities arising out of your use of these resources.

TI's products are provided subject to TI's Terms of Sale or other applicable terms available either on ti.com or provided in conjunction with such TI products. TI's provision of these resources does not expand or otherwise alter TI's applicable warranties or warranty disclaimers for TI products.

TI objects to and rejects any additional or different terms you may have proposed.

Copyright © 2023 Texas Instruments Incorporated