ISO6762DWR

Quality, reliability & packaging data download

Status: ACTIVE

Report date: 03/24/2022

Assembly site: **TI MALAYSIA A/T**

Rating	Catalog

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	0.214899	97.585996	975860	0.038702	387
Nickel and Its Alloys	Nickel	7440-02-0	0.000001	0.000454	5	0.000000	0
Not Categorized	Proprietary Materials	—	0.000024	0.010898	109	0.000004	0
Precious Metals	Palladium	7440-05-3	0.005285	2.399927	23999	0.000952	10
Precious Metals	Silver	7440-22-4	0.000006	0.002725	27	0.000001	0
Sub-total	—	—	0.220215	100	1000000	0.039660	397
Bond Wire 2							
Copper and Its Alloys	Iron	7439-89-6	0.000001	0.000165	2	0.000000	0
Other Nonferrous Metals and Alloys	Beryllium	7440-41-7	0.000001	0.000165	2	0.000000	0
Other Nonferrous Metals and Alloys	Calcium	7440-70-2	0.000002	0.000330	3	0.000000	0
Other Nonferrous Metals and Alloys	Yttrium	7440-65-5	0.000004	0.000660	7	0.000001	0
Precious Metals	Gold	7440-57-5	0.606156	99.997525	999975	0.109166	1092
Precious Metals	Silver	7440-22-4	0.000007	0.001155	12	0.000001	0
Sub-total	—	—	0.606171	100	1000000	0.109168	1092
Die Attach Adhesive							

Precious Metals	Silver	7440-22-4	0.23598	75.000000	750000	0.042499	425
Thermoplastics	Epoxy	85954-11-6	0.07866	25.000000	250000	0.014166	142
Sub-total	—	—	0.31464	100	1000000	0.056665	567
Die Attach Adhesive 2							
Precious Metals	Silver	7440-22-4	0.23598	75.000000	750000	0.042499	425
Thermoplastics	Epoxy	85954-11-6	0.07866	25.000000	250000	0.014166	142
Sub-total	—	—	0.31464	100	1000000	0.056665	567
Lead Frame							
Copper and Its Alloys	Copper	7440-50-8	204.29025	97.050000	970500	36.791685	367917
Copper and Its Alloys	Iron	7439-89-6	5.473	2.600000	26000	0.985661	9857
Copper and Its Alloys	Phosphorus	7723-14-0	0.31575	0.150000	1500	0.056865	569
Zinc and Its Alloys	Zinc	7440-66-6	0.421	0.200000	2000	0.075820	758
Sub-total	—	—	210.50000	100	1000000	37.910031	379100
Lead Frame Plating							
Nickel and Its Alloys	Nickel	7440-02-0	0.66584	95.120000	951200	0.119915	1199
Precious Metals	Gold	7440-57-5	0.00546	0.780000	7800	0.000983	10
Precious Metals	Palladium	7440-05-3	0.0287	4.100000	41000	0.005169	52
Sub-total	—	—	0.70000	100	1000000	0.126067	1261
Mold Compound							
Other Inorganic Materials	Fused Silica	60676-86-0	304.572531	89.500000	895000	54.852038	548520
Other Organic Materials	Chlorine	7782-50-5	0.006806	0.002000	20	0.001226	12
Other Plastics and Rubber	Carbon Black	1333-86-4	1.701523	0.500000	5000	0.306436	3064
Thermoplastics	Epoxy	85954-11-6	34.023644	9.998000	99980	6.127494	61275
Sub-total	—	—	340.304504	100	1000000	61.287193	612872
Semiconductor Device							
Ceramics / Glass	Doped Silicon	7440-21-3	1.150923	100.000000	1000000	0.207276	2073
Sub-total	—	—	1.150923	100	1000000	0.207276	2073
Semiconductor Device 2							
Ceramics / Glass	Doped Silicon	7440-21-3	1.150923	100.000000	1000000	0.207276	2073
Sub-total	—	—	1.150923	100	1000000	0.207276	2073
Total	—	—	555.262016	—	—	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**
2.5×10^9	.4	55	60	0.7	125	1000	72462	0	—

Qualification summary

Stress	Reference	Min lot qty	SS / lot	Condition	Duration	Result
HTOL	JESD22-A108	3	77	Life test, 125C	1000 hours	Pass
HTSL	JESD22-A103	3	25	High temp storage bake 150C	1000 hours	Pass
AC/UHAST	JESD22-A102/JESD22-A118	3	25	Autoclave 121C or unbiased HAST 130C / 85% RH	96 hours	Pass
THB/HAST	JESD22-A101/JESD22-A110	3	25	THB 85C/85%RH or HAST 130C/110C/85%RH	1000 hours or 96 hours	Pass
TC	JESD22-A104	3	25	Temperature cycle -65/150C	500 cycles	Pass
SD	J-STD-002	3	22	Per specification	>95% lead coverage	Pass
HBM	JS-001	1	3	ESD - HBM	Classification	See data sheet
CDM	JESD22-C101	1	3	ESD - CDM	Classification	See data sheet
MSL	J-STD-020	—	—	Per J-STD-020	Classification	See data sheet

Ongoing reliability monitoring

FAB process reliability data

Fab Process	Reliability Test	Rolling Year (4Q20 - 3Q21) Sample Size	Cumulative Sample Size	Disposition
Power BICMOS	High Temperature Operating Life, 125C, 1000 Hours (or Equivalent)	27838	313592	Pass

Assembly process reliability data

Package Family	Reliability Test	Rolling Year (4Q20 - 3Q21) Sample Size	Cumulative Sample Size	Disposition
SOIC	Autoclave, 121C, 96 Hours	8482	83447	Pass
SOIC	Biased HAST, 130C/85%RH, 96 Hours	4988	55094	Pass
SOIC	High Temperature Storage Life, 150C, 1000 Hours	1474	18909	Pass
SOIC	High Temperature Storage Life, 170C, 420 Hours	924	29635	Pass
SOIC	Temperature Cycle, -40/125C, 850 Cycles	0	231	Pass
SOIC	Temperature Cycle, -55/125C, 700 Cycles	0	845	Pass
SOIC	Temperature Cycle, -65/150C, 500 Cycles	14135	128192	Pass
SOIC	Temperature-Humidity Bias Test (85C/85%RH), 1000 Hours	231	1823	Pass
SOIC	Unbiased HAST, 130C/85%RH, 96 Hours	2124	15071	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

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