

TLV74330PDBVR

Quality, reliability & packaging data download

Status: ACTIVE

Report date: 10/11/2024



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

RoHS	Yes
REACH	Yes
Device marking	1DGT
Lead finish/Ball material	NIPDAU
MSL rating/Peak reflow	Level-1-260C-UNLIM
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	0.015862	96.666464	966665	0.101919	1019
Precious Metals	Gold	7440-57-5	0.000089	0.542385	5424	0.000572	6
Precious Metals	Palladium	7440-05-3	0.000458	2.791151	27912	0.002943	29
Sub-total	—	—	0.016409	100	1000000	0.105434	1054
Die Attach Adhesive							
Precious Metals	Silver	7440-22-4	0.058003	75.000323	750003	0.372690	3727
Thermoplastics	Epoxy	85954-11-6	0.019334	24.999677	249997	0.124228	1242
Sub-total	—	—	0.077337	100	1000000	0.496918	4969
Lead Frame							
Copper and Its Alloys	Copper	7440-50-8	5.334588	97.346496	973465	34.276620	342766
Copper and Its Alloys	Iron	7439-89-6	0.133767	2.441004	24410	0.859500	8595
Copper and Its Alloys	Phosphorus	7723-14-0	0.004521	0.082500	825	0.029049	290
Zinc and Its Alloys	Zinc	7440-66-6	0.007124	0.130000	1300	0.045774	458
Sub-total	—	—	5.480000	100	1000000	35.210944	352109
Lead Frame Plating							
Nickel and Its Alloys	Nickel	7440-02-0	0.042804	95.120000	951200	0.275031	2750
Precious Metals	Gold	7440-57-5	0.000351	0.780000	7800	0.002255	23
Precious Metals	Palladium	7440-05-3	0.001845	4.100000	41000	0.011855	119
Sub-total	—	—	0.045000	100	1000000	0.289141	2891
Mold Compound							
Other Inorganic Materials	Fused Silica	60676-86-0	8.590363	88.000001	880000	55.196130	551961
Other Organic Materials	Carbon Black	1333-86-4	0.029285	0.299997	3000	0.188167	1882
Other Organic Materials	Chlorine	7782-50-5	0.000098	0.001004	10	0.000630	6
Thermoplastics	Epoxy	85954-11-6	1.14203	11.698998	116990	7.337948	73379
Sub-total	—	—	9.761776	100	1000000	62.722874	627229
Semiconductor Device							
Ceramics / Glass	Doped Silicon	7440-21-3	0.182821	100.000000	1000000	1.174690	11747
Sub-total	—	—	0.182821	100	1000000	1.174690	11747
Total	—	—	15.563343	—	—	100	1000000

Assembly site: TI Semiconductor

RoHS	Yes
REACH	Yes
Device marking	1DGT
Lead finish/Ball material	SN
MSL rating/Peak reflow	Level-1-260C-UNLIM
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	0.016299	97.534558	975346	0.104735	1047
Not Categorized	Proprietary Materials	—	0.000002	0.011968	120	0.000013	0
Precious Metals	Gold	7440-57-5	0.000009	0.053857	539	0.000058	1
Precious Metals	Palladium	7440-05-3	0.000401	2.399617	23996	0.002577	26
Sub-total	—	—	0.016711	100	1000000	0.107382	1074
Die Attach Adhesive							
Precious Metals	Silver	7440-22-4	0.06187	79.999483	799995	0.397567	3976
Thermoplastics	Epoxy	85954-11-6	0.015468	20.000517	200005	0.099395	994
Sub-total	—	—	0.077338	100	1000000	0.496962	4970
Lead Frame							
Copper and Its Alloys	Copper	7440-50-8	5.31834	97.050000	970500	34.174823	341748
Copper and Its Alloys	Iron	7439-89-6	0.14248	2.600000	26000	0.915554	9156
Copper and Its Alloys	Phosphorus	7723-14-0	0.00822	0.150000	1500	0.052820	528
Zinc and Its Alloys	Zinc	7440-66-6	0.01096	0.200000	2000	0.070427	704
Sub-total	—	—	5.48000	100	1000000	35.213625	352136
Lead Frame Plating							
Other Nonferrous Metals and Alloys	Tin	7440-31-5	0.05	100.000000	1000000	0.321292	3213
Sub-total	—	—	0.05	100	1000000	0.321292	3213
Mold Compound							
Other Inorganic Materials	Fused Silica	60676-86-0	8.625072	88.000002	880000	55.423367	554234

Other Organic Materials	Carbon Black	1333-86-4	0.029404	0.300004	3000	0.188946	1889
Other Organic Materials	Chlorine	7782-50-5	0.000098	0.001000	10	0.000630	6
Thermoplastics	Epoxy	85954-11-6	1.146644	11.698995	116990	7.368155	73682
Sub-total	—	—	9.801218	100	1000000	62.981098	629811
Semiconductor Device							
Ceramics / Glass	Doped Silicon	7440-21-3	0.136891	100.000000	1000000	0.879640	8796
Sub-total	—	—	0.136891	100	1000000	0.879640	8796
Total	—	—	15.562158	—	—	100	1000000

Assembly site: Ext-Mfg

RoHS	Yes
REACH	Yes
Device marking	1DGT
Lead finish/Ball material	SN
MSL rating/Peak reflow	Level-1-260C-UNLIM
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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	0.016969	97.388659	973887	0.101930	1019
Precious Metals	Gold	7440-57-5	0.000037	0.212351	2124	0.000222	2
Precious Metals	Palladium	7440-05-3	0.000418	2.398990	23990	0.002511	25
Sub-total	—	—	0.017424	100	1000000	0.104663	1047
Die Attach Adhesive							
Precious Metals	Silver	7440-22-4	0.063417	80.000252	800003	0.380934	3809
Thermoplastics	Epoxy	85954-11-6	0.015854	19.999748	199997	0.095232	952
Sub-total	—	—	0.079271	100	1000000	0.476166	4762
Lead Frame							
Copper and Its Alloys	Copper	7440-50-8	6.632428	97.535706	975357	39.839750	398398
Copper and Its Alloys	Iron	7439-89-6	0.153136	2.252000	22520	0.919859	9199

Copper and Its Alloys	Phosphorus	7723-14-0	0.001496	0.022000	220	0.008986	90
Precious Metals	Silver	7440-22-4	0.004304	0.063294	633	0.025853	259
Zinc and Its Alloys	Zinc	7440-66-6	0.008636	0.127000	1270	0.051875	519
Sub-total	—	—	6.800000	100	1000000	40.846324	408463
Lead Frame Plating							
Other Nonferrous Metals and Alloys	Tin	7440-31-5	0.04	100.000000	1000000	0.240272	2403
Sub-total	—	—	0.04	100	1000000	0.240272	2403
Mold Compound							
Other Inorganic Materials	Fused Silica	60676-86-0	8.28467	86.849999	868500	49.764458	497645
Other Organic Materials	Carbon Black	1333-86-4	0.014309	0.150004	1500	0.085951	860
Other Organic Materials	Proprietary Non Halide Flame Retardant	Trade Secret	0.047695	0.499997	5000	0.286495	2865
Thermoplastics	Epoxy	85954-11-6	1.192382	12.500000	125000	7.162415	71624
Sub-total	—	—	9.539056	100	1000000	57.299319	572993
Semiconductor Device							
Ceramics / Glass	Doped Silicon	7440-21-3	0.172014	100.000000	1000000	1.033256	10333
Sub-total	—	—	0.172014	100	1000000	1.033256	10333
Total	—	—	16.647765	—	—	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
9.999999999×10^9	0.1	55	60	0.7	125	1000	183306	0	—

Qualification summary

Stress	Reference	Min lot qty	SS / lot	Condition	Duration	Result	Notes
HTOL	JESD22-A108	3	77	Life test, 125C	1000 hours	Pass	Or equivalent JEDEC condition
HTSL	JESD22-A103	3	25	High temp storage bake, 150C	1000 hours	Pass	Or equivalent JEDEC condition
AC/UHAST	JESD22-A102/JESD22-A118	3	25	Unbiased HAST 130C / 85% RH	96 hours	Pass	Or equivalent JEDEC condition
THB/HAST	JESD22-A101/JESD22-A110	3	25	HAST 130C/85%RH	96 hours	Pass	Or equivalent JEDEC condition
TC	JESD22-A104	3	25	Temperature cycle -65/150C	500 cycles	Pass	Or equivalent JEDEC condition
SD	J-STD-002	3	22	Per specification	>95% lead coverage	Pass	—
HBM	JS-001	1	3	ESD - HBM	Classification	See data sheet	—
CDM	JS-002	1	3	ESD - CDM	Classification	See data sheet	—
LU	JESD78	1	3	Latch-up	Per JESD78	Pass	As applicable per JESD78
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 (4Q2023 - 3Q2024) Sample Size	Cumulative Sample Size	Disposition
Power BICMOS	Life test 125C, 1000 Hours or Equivalent JEDEC Condition	27044	403351	Pass

Assembly process reliability data

Package Family	Reliability Test	Rolling Year (4Q2023 - 3Q2024) Sample Size	Cumulative Sample Size	Disposition
SOP/SOT	Biased HAST 130C/85%RH, 96 Hours or Equivalent JEDEC Condition	9919	102573	Pass
SOP/SOT	High temp storage bake 150C, 1000 Hours or Equivalent JEDEC Condition	9671	80769	Pass
SOP/SOT	Temperature cycle -65/150C, 500 Hours or Equivalent JEDEC Condition	18740	187894	Pass
SOP/SOT	Unbiased HAST 130C/85% RH, 96 Hours or Equivalent JEDEC Condition	13709	156679	Pass

Additional resources

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[Certifications](#)

[Conflict minerals specialized disclosure report](#)

[Restricted chemical test report](#)

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