

SN74LVC1G125DCKR

Quality, reliability & packaging data download

Status: ACTIVE

Report date: 03/17/2025



Assembly site: TI Semiconductor

RoHS	Yes
REACH	Yes
Device marking	CM5, CMT, CMR, CMK, CMJ, CMF
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	0.007723	97.537257	975373	0.105146	1051
Not Categorized	Proprietary Materials	—	0.000001	0.012629	126	0.000014	0
Precious Metals	Gold	7440-57-5	0.000004	0.050518	505	0.000054	1
Precious Metals	Palladium	7440-05-3	0.00019	2.399596	23996	0.002587	26
Sub-total	—	—	0.007918	100	1000000	0.107801	1078
Die Attach Adhesive							
Precious Metals	Silver	7440-22-4	0.04064	80.000000	800000	0.553300	5533
Thermoplastics	Epoxy	85954-11-6	0.01016	20.000000	200000	0.138325	1383
Sub-total	—	—	0.05080	100	1000000	0.691625	6916
Lead Frame							
Copper and Its Alloys	Copper	7440-50-8	3.25799	96.963988	969640	44.356448	443564
Copper and Its Alloys	Iron	7439-89-6	0.071904	2.140000	21400	0.978949	9789
Copper and Its Alloys	Phosphorus	7723-14-0	0.00084	0.025000	250	0.011436	114
Other Nonferrous Metals and Alloys	Lead	7439-92-1	0.000034	0.001012	10	0.000463	5
Precious Metals	Silver	7440-22-4	0.02688	0.800000	8000	0.365962	3660
Zinc and Its Alloys	Zinc	7440-66-6	0.002352	0.070000	700	0.032022	320
Sub-total	—	—	3.360000	100	1000000	45.745280	457453
Lead Frame Plating							
Other Nonferrous Metals and Alloys	Tin	7440-31-5	0.064	100.000000	1000000	0.871339	8713
Sub-total	—	—	0.064	100	1000000	0.871339	8713
Mold Compound							
Other Inorganic Materials	Fused Silica	60676-86-0	3.319698	88.000002	880000	45.196582	451966
Other Organic Materials	Carbon Black	1333-86-4	0.011317	0.299996	3000	0.154077	1541
Other Organic Materials	Chlorine	7782-50-5	0.000038	0.001007	10	0.000517	5
Thermoplastics	Epoxy	85954-11-6	0.441331	11.698995	116990	6.008575	60086
Sub-total	—	—	3.772384	100	1000000	51.359751	513598
Semiconductor Device							
Ceramics / Glass	Doped Silicon	7440-21-3	0.089918	100.000000	1000000	1.224204	12242
Sub-total	—	—	0.089918	100	1000000	1.224204	12242
Total	—	—	7.345020	—	—	100	1000000

Assembly site: Ext-Mfg

RoHS	Yes
REACH	Yes
Device marking	CM5, CMT, CMR, CMK, CMJ, CMF
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							
Not Categorized	Proprietary Materials	—	0.000002	0.008937	89	0.000029	0
Precious Metals	Gold	7440-57-5	0.022377	99.991063	999911	0.323178	3232
Sub-total	—	—	0.022379	100	1000000	0.323207	3232
Die Attach Adhesive							
Precious Metals	Silver	7440-22-4	0.032449	72.999483	729995	0.468642	4686
Thermoplastics	Epoxy	85954-11-6	0.012002	27.000517	270005	0.173338	1733
Sub-total	—	—	0.044451	100	1000000	0.641980	6420
Lead Frame							
Copper and Its Alloys	Copper	7440-50-8	3.02312	96.746032	967460	43.661139	436611
Copper and Its Alloys	Iron	7439-89-6	0.070649	2.260913	22609	1.020342	10203
Copper and Its Alloys	Phosphorus	7723-14-0	0.000775	0.024802	248	0.011193	112
Other Nonferrous Metals and Alloys	Lead	7439-92-1	0.00155	0.049603	496	0.022386	224
Precious Metals	Silver	7440-22-4	0.0248	0.793651	7937	0.358172	3582
Zinc and Its Alloys	Zinc	7440-66-6	0.003906	0.125000	1250	0.056412	564
Sub-total	—	—	3.124800	100	1000000	45.129644	451296
Lead Frame Plating							
Nickel and Its Alloys	Nickel	7440-02-0	0.009512	95.120000	951200	0.137376	1374
Precious Metals	Gold	7440-57-5	0.000078	0.780000	7800	0.001127	11
Precious Metals	Palladium	7440-05-3	0.00041	4.100000	41000	0.005921	59
Sub-total	—	—	0.010000	100	1000000	0.144424	1444

Mold Compound							
Other Inorganic Materials	Fused Silica	60676-86-0	3.140027	86.995021	869950	45.349558	453496
Other Organic Materials	Carbon Black	1333-86-4	0.018047	0.499995	5000	0.260642	2606
Other Organic Materials	Organic Phosphorus	1330-78-5	0.00018	0.004987	50	0.002600	26
Thermoplastics	Epoxy	85954-11-6	0.451179	12.499997	125000	6.516112	65161
Sub-total	—	—	3.609433	100	1000000	52.128912	521289
Semiconductor Device							
Ceramics / Glass	Doped Silicon	7440-21-3	0.112989	100.000000	1000000	1.631833	16318
Sub-total	—	—	0.112989	100	1000000	1.631833	16318
Total	—	—	6.924052	—	—	100	1000000

Assembly site: Ext-Mfg

RoHS	Yes
REACH	Yes
Device marking	CM5, CMT, CMR, CMK, CMJ, CMF
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	0.012591	97.385722	973857	0.177951	1780
Precious Metals	Gold	7440-57-5	0.000028	0.216567	2166	0.000396	4
Precious Metals	Palladium	7440-05-3	0.00031	2.397711	23977	0.004381	44
Sub-total	—	—	0.012929	100	1000000	0.182728	1827
Die Attach Adhesive							
Precious Metals	Silver	7440-22-4	0.041656	80.000000	800000	0.588731	5887
Thermoplastics	Epoxy	85954-11-6	0.010414	20.000000	200000	0.147183	1472
Sub-total	—	—	0.052070	100	1000000	0.735913	7359
Lead Frame							

Copper and Its Alloys	Copper	7440-50-8	3.0972	96.787500	967875	43.773214	437732
Copper and Its Alloys	Iron	7439-89-6	0.0752	2.350000	23500	1.062813	10628
Copper and Its Alloys	Phosphorus	7723-14-0	0.00264	0.082500	825	0.037312	373
Other Nonferrous Metals and Alloys	Lead	7439-92-1	0.00016	0.005000	50	0.002261	23
Precious Metals	Silver	7440-22-4	0.0208	0.650000	6500	0.293970	2940
Zinc and Its Alloys	Zinc	7440-66-6	0.004	0.125000	1250	0.056533	565
Sub-total	—	—	3.20000	100	1000000	45.226102	452261
Lead Frame Plating							
Other Nonferrous Metals and Alloys	Tin	7440-31-5	0.08	100.000000	1000000	1.130653	11307
Sub-total	—	—	0.08	100	1000000	1.130653	11307
Mold Compound							
Other Inorganic Materials	Fused Silica	60676-86-0	3.141861	86.849992	868500	44.404415	444044
Other Organic Materials	Carbon Black	1333-86-4	0.005426	0.149990	1500	0.076687	767
Other Organic Materials	Proprietary Non Halide Flame Retardant	Trade Secret	0.018088	0.500004	5000	0.255641	2556
Thermoplastics	Epoxy	85954-11-6	0.452197	12.500014	125000	6.390971	63910
Sub-total	—	—	3.617572	100	1000000	51.127713	511277
Semiconductor Device							
Ceramics / Glass	Doped Silicon	7440-21-3	0.112989	100.000000	1000000	1.596891	15969
Sub-total	—	—	0.112989	100	1000000	1.596891	15969
Total	—	—	7.075560	—	—	100	1000000

Assembly site: **Ext-Mfg**

RoHS	Yes
REACH	Yes
Device marking	CM5, CMT, CMR, CMK, CMJ, CMF
Lead finish/Ball material	NIPDAU
MSL rating/Peak reflow	Level-1-260C-UNLIM
Rating	Catalog

Material content

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Component	Substance	CAS Number	Amount (mg)	Percentage %	ppm	Percentage %	ppm
Bond Wire							
Precious Metals	Gold	7440-57-5	0.008056	100.000000	1000000	0.102443	1024
Sub-total	—	—	0.008056	100	1000000	0.102443	1024
Die Attach Adhesive							
Precious Metals	Silver	7440-22-4	0.030594	72.999284	729993	0.389046	3890
Thermoplastics	Epoxy	85954-11-6	0.011316	27.000716	270007	0.143899	1439
Sub-total	—	—	0.041910	100	1000000	0.532944	5329
Lead Frame							
Copper and Its Alloys	Copper	7440-50-8	3.241136	97.040000	970400	41.215581	412156
Copper and Its Alloys	Iron	7439-89-6	0.08684	2.600000	26000	1.104292	11043
Copper and Its Alloys	Phosphorus	7723-14-0	0.00501	0.150000	1500	0.063709	637
Other Nonferrous Metals and Alloys	Lead	7439-92-1	0.000334	0.010000	100	0.004247	42
Zinc and Its Alloys	Zinc	7440-66-6	0.00668	0.200000	2000	0.084946	849
Sub-total	—	—	3.340000	100	1000000	42.472775	424728
Lead Frame Plating							
Nickel and Its Alloys	Nickel	7440-02-0	0.057072	95.120000	951200	0.725750	7258
Precious Metals	Gold	7440-57-5	0.000468	0.780000	7800	0.005951	60
Precious Metals	Palladium	7440-05-3	0.00246	4.100000	41000	0.031282	313
Sub-total	—	—	0.060000	100	1000000	0.762984	7630
Mold Compound							
Other Inorganic Materials	Fused Silica	60676-86-0	3.617706	85.000014	850000	46.004196	460042
Other Organic Materials	Carbon Black	1333-86-4	0.012768	0.299991	3000	0.162363	1624
Thermoplastics	Epoxy	85954-11-6	0.62565	14.699995	147000	7.956015	79560
Sub-total	—	—	4.256124	100	1000000	54.122574	541226
Semiconductor Device							
Ceramics / Glass	Doped Silicon	7440-21-3	0.157771	100.000000	1000000	2.006279	20063
Sub-total	—	—	0.157771	100	1000000	2.006279	20063
Total	—	—	7.863861	—	—	100	1000000

Assembly site: Ext-Mfg

RoHS	Yes
REACH	Yes
Device marking	CM5, CMT, CMR, CMK, CMJ, CMF
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							
Precious Metals	Gold	7440-57-5	0.014294	100.000000	1000000	0.206942	2069
Sub-total	—	—	0.014294	100	1000000	0.206942	2069
Die Attach Adhesive							
Precious Metals	Silver	7440-22-4	0.041656	80.000000	800000	0.603076	6031
Thermoplastics	Epoxy	85954-11-6	0.010414	20.000000	200000	0.150769	1508
Sub-total	—	—	0.052070	100	1000000	0.753845	7538
Lead Frame							
Copper and Its Alloys	Copper	7440-50-8	3.215603	97.442486	974425	46.554006	465540
Copper and Its Alloys	Iron	7439-89-6	0.07755	2.349999	23500	1.122733	11227
Copper and Its Alloys	Phosphorus	7723-14-0	0.002723	0.082515	825	0.039422	394
Zinc and Its Alloys	Zinc	7440-66-6	0.004125	0.125000	1250	0.059720	597
Sub-total	—	—	3.300001	100	1000000	47.775881	477759
Lead Frame Plating							
Nickel and Its Alloys	Nickel	7440-02-0	0.057072	95.120000	951200	0.826262	8263
Precious Metals	Gold	7440-57-5	0.000468	0.780000	7800	0.006775	68
Precious Metals	Palladium	7440-05-3	0.00246	4.100000	41000	0.035615	356
Sub-total	—	—	0.060000	100	1000000	0.868652	8687
Mold Compound							
Other Inorganic Materials	Fused Silica	60676-86-0	3.098806	93.249982	932500	44.863074	448631
Other Organic Materials	Carbon Black	1333-86-4	0.008308	0.250006	2500	0.120279	1203

Thermoplastics	Epoxy	85954-11-6	0.216003	6.500012	65000	3.127191	31272
Sub-total	—	—	3.323117	100	1000000	48.110544	481105
Semiconductor Device							
Ceramics / Glass	Doped Silicon	7440-21-3	0.157771	100.000000	1000000	2.284135	22841
Sub-total	—	—	0.157771	100	1000000	2.284135	22841
Total	—	—	6.907253	—	—	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
2.21×10 ⁹	0.5	55	60	0.7	125	1000	25789	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 (1Q2024 - 4Q2024) Sample Size	Cumulative Sample Size	Disposition
CMOS	Life test 125C, 1000 Hours or Equivalent JEDEC Condition	425	53536	Pass

Assembly process reliability data

Package Family	Reliability Test	Rolling Year (1Q2024 - 4Q2024) Sample Size	Cumulative Sample Size	Disposition
SOP/SOT	Biased HAST 130C/85%RH, 96 Hours or Equivalent JEDEC Condition	8268	107124	Pass
SOP/SOT	High temp storage bake 150C, 1000 Hours or Equivalent JEDEC Condition	9291	84258	Pass
SOP/SOT	Temperature cycle -65/150C, 500 Hours or Equivalent JEDEC Condition	17019	194236	Pass
SOP/SOT	Unbiased HAST 130C/85% RH, 96 Hours or Equivalent JEDEC Condition	12474	160218	Pass

Additional resources

[General quality guidelines](#)

[Certifications](#)

[Conflict minerals specialized disclosure report](#)

[Restricted chemical test report](#)

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