

SN74LVC1G66QDCKRQ1

Quality, reliability & packaging data download

Status: ACTIVE

Report date: 02/18/2026



Assembly site: Ext-Mfg

RoHS	Yes
REACH	Yes
Device marking	C60
Lead finish/Ball material	NiPdAu
MSL rating/Peak reflow	Level-1-260C-UNLIM
Rating	Automotive

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	0.019422	100.000000	1000000	0.283502	2835
Sub-total	—	—	0.019422	100	1000000	0.283502	2835
Die Attach Adhesive							
Precious Metals	Silver	7440-22-4	0.043803	77.000018	770000	0.639391	6394
Thermoplastics	Epoxy	85954-11-6	0.013084	22.999982	230000	0.190987	1910
Sub-total	—	—	0.056887	100	1000000	0.830378	8304
Lead Frame							
Copper and Its Alloys	Copper	7440-50-8	2.6796	97.440000	974400	39.114057	391141
Copper and Its Alloys	Iron	7439-89-6	0.064625	2.350000	23500	0.943330	9433
Copper and Its Alloys	Phosphorus	7723-14-0	0.0022	0.080000	800	0.032113	321
Zinc and Its Alloys	Zinc	7440-66-6	0.003575	0.130000	1300	0.052184	522
Sub-total	—	—	2.750000	100	1000000	40.141684	401417
Lead Frame Plating							
Nickel and Its Alloys	Nickel	7440-02-0	0.19024	95.120000	951200	2.776929	27769
Precious Metals	Gold	7440-57-5	0.00156	0.780000	7800	0.022771	228
Precious Metals	Palladium	7440-05-3	0.0082	4.100000	41000	0.119695	1197
Sub-total	—	—	0.20000	100	1000000	2.919395	29194
Mold Compound							
Other Inorganic Materials	Fused Silica	60676-86-0	3.151584	86.999984	870000	46.003596	460036
Other Organic Materials	Carbon Black	1333-86-4	0.003623	0.100013	1000	0.052885	529
Thermoplastics	Epoxy	85954-11-6	0.467304	12.900002	129000	6.821225	68212
Sub-total	—	—	3.622511	100	1000000	52.877706	528777
Semiconductor Device							
Ceramics / Glass	Doped Silicon	7440-21-3	0.201914	100.000000	1000000	2.947334	29473
Sub-total	—	—	0.201914	100	1000000	2.947334	29473
Total	—	—	6.850734	—	—	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

Type	AEC Q100 test #	Test spec	Min lot qty	SS / lot	Test name	Condition	Result	Notes
Test group A - accelerated environment stress test								
THB/HAST	A2	JESD22-A101/JESD22-A110	3	77	Biased HAST	130C/85%RH 96 hours	Pass	Or equivalent Q100 condition
AC/UHAST	A3	JESD22-A102/JESD22-A118	3	77	Unbiased HAST	130C/85%RH for 96 hours	Pass	Or equivalent Q100 condition
TC	A4	JESD22-A104	3	77	Temperature cycle	Per grade requirements. See data sheet.	Pass	—
TC-WBP	A4	MIL-STD883 method 2011	1	30	Post temp cycle bond pull	Per requirements	Pass	As applicable per die configuration
HTSL	A6	JESD22-A103	1	45	High temp storage bake	Per grade requirements. See data sheet.	Pass	—
Test group B - accelerated lifetime simulation test								
HTOL	B1	JESD22-A108	3	77	High temperature operating life	Per grade requirements. See data sheet.	Pass	—
ELFR	B2	AEC Q100-008	3	800	Early life failure rate	Per grade requirements. See data sheet.	Pass	—
Test group C - package assembly integrity tests								
WBS	C1	AEC Q100-001	1	30	Wire bond shear	Cpk > 1.67	Pass	As applicable per die configuration
WBP	C2	MIL-STD883 method 2011	1	30	Wire bond pull	Cpk > 1.67	Pass	As applicable per die configuration
SD	C3	JEDEC J-STD-002	1	15	Solderability	>95% lead coverage	Pass	—
PD	C4	JESD22-B100 and B108	3	10	Physical dimensions	Cpk > 1.67	Pass	—
SBS	C5	AEC Q100-010	3	5 balls from 10 devices	Solder Ball Shear	Cpk > 1.67	Pass	As applicable per die configuration
Test group D - die fabrication reliability tests								
EM	D1	—	—	—	Electromigration	Per technology requirements	Pass	—
TDDDB	D2	—	—	—	Time dependent dielectric breakdown	Per technology requirements	Pass	—
HCI	D3	—	—	—	Hot carrier injection	Per technology requirements	Pass	—
BTI	D4	—	—	—	Bias temperature instability	Per technology requirements	Pass	—
SM	D5	—	—	—	Stress Migration	Per technology requirements	Pass	—
Test group E - electrical verification								
HBM	E2	AEC Q100-002	1	3	Electrostatic discharge - human body model	Per AEC Q100-002	See data sheet	—
CDM	E3	AEC Q100-011	1	3	Electrostatic discharge - charged device model	Per AEC Q100-011	See data sheet	—
LU	E4	AEC Q100-004	1	3	Latch-up	Per AEC Q100-004	Pass	As applicable per Q100-004
ED	E5	AEC Q100-009	3	30	Electrical distributions	Per AEC Q100-009	Pass	—

Ongoing reliability monitoring

FAB process reliability data

Fab Process	Reliability Test	Rolling Year (1Q2025 - 4Q2025) Sample Size	Cumulative Sample Size	Disposition
CMOS	Life test 125C, 1000 Hours or Equivalent JEDEC Condition	77	53613	Pass

Fab Process	Reliability Test	Rolling Year (1Q2025 - 4Q2025) Sample Size	Cumulative Sample Size	Disposition
Power BICMOS	High temperature reverse bias 125C, 1000 Hours or Equivalent JEDEC Condition	231	462	Pass
Power BICMOS	Life test 125C, 1000 Hours or Equivalent JEDEC Condition	28045	438807	Pass

Assembly process reliability data

Package Family	Reliability Test	Rolling Year (1Q2025 - 4Q2025) Sample Size	Cumulative Sample Size	Disposition
SOP/SOT	Biased HAST 130C/85%RH, 96 Hours or Equivalent JEDEC Condition	7757	114132	Pass
SOP/SOT	High temp storage bake 150C, 1000 Hours or Equivalent JEDEC Condition	5859	89228	Pass
SOP/SOT	Temperature cycle -65/150C, 500 Hours or Equivalent JEDEC Condition	18461	212749	Pass
SOP/SOT	Unbiased HAST 130C/85% RH, 96 Hours or Equivalent JEDEC Condition	11319	171691	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 DATA SHEETS), 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 applicable standards, 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.