

PCN Supporting Data Package

PCN#: 20260915000.1

Title: Qualification of RFAB as an additional Fab site option, Die Revision, Datasheet and Marking update for select devices

Texas Instruments Contact: Gerry Balanon/Muhammad Ammar Bin Muhamad Kamal

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Slide 1

ITSW1

Ivan Tan, Sheng Wei, 6/16/2023

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Site Information



About Richardson RFAB Wafer Fab



Fab Facts:

Wafer Size: 300 mm
Function: IC Manufacturing
- Front-end Process
- Test (Parametric & Multiprobe)
FA Lab

Key Dates:

Establishment: 2010

Technologies: LBC7/LBC8LV/LBC8MV/C05/50HPA07HV
and LBC9/HPA9

End Products: Consumer, Automotive & Industrial
ICs

Cleanroom: Class 10/1;
Class 100 (FOUP)

Shift Model 3 Shifts – 12h / 24/7

C2510048/C2607135 – Fab Process Difference Summary

Process Step	Comments
Form	No impact. The mechanical outline of the product is not changed.
Fit	No impact to datasheet performance.
Function	No impact to datasheet performance.

Process Step	ZVEI ID	FFAB - Sending ASLC10	RFAB – Receiving LBC9PLV
Wafer Fab Site	SEM-PW-13	FFAB	RFAB
Wafer Diameter	SEM-PW-02	200mm	300mm
Processing Technology	SEM-PW-09	ASLC10	LBC9PLV

Fab to Fab Electrical Test Yield Comparisons

FFAB -> RFAB	FFAB	RFAB
Fab to Fab Electrical Test Yield Comparisons		

	>95% of tested parameters with yield greater than 99%
	90% to 95% of tested parameters with yield less than 99%
	<90% of tested parameters with yield less than 99%

- Method

- Final Test (FT) yield is the yield after assembly
- Yields are comparable between both the FABs

Marking Change

Device name	Current Symbol	Additional Symbol
SN74LVC1G00DCKR	CA5, CAS, CAR, CAH, CAP, CAJ	27C
SN74LVC1G02DCKR	CB5, CBS, CBR, CBJ, CBR, CBH, CBF, CBP	27D
SN74LVC1G08DCKR	CE5, CES, CEJ, CER, CEH, CEF, CEP	1MI
SN74LVC1G125DCKR	CM5, CMJ, CMR, CMF	1BC
SN74LVC1G126DCKR	CN5, CNR, CNJ, CNF	1BD
SN74LVC1G132DCKR	D55, D5J, D5R	27E
SN74LVC1G240DCKR	CK5, CKJ, CKR, CKF	27F
SN74LVC1G32DCKR	CG5, CGS, CGJ, CGR, CGH, CGF, CGP	1BB
SN74LVC1G80DCKR	CX5, CXR, CXJ, CXR, CXF	27G
SN74LVC1G86DCKR	CH5, CHR, CHJ, CHR, CHF	27H
SN74LVC1G79DCKR	CR5, CRJ, CRR, CRF	27J
SN74LVC1G38DCKR	D75, D7J, D7R, D7H, D7F, D7P	27K

Datasheet Changes

There will be changes to the datasheets of the affected devices as a result of the physical changes.

The following applies to both the all devices mentioned

- There will be no changes to any of the min / max electrical specs.
- There will be updates to the graphs in the typical characteristics section to represent the performance of the new die.
- Portions of the datasheet that are considered unnecessary have been removed. The headings for these include the following.
 - Principles of Operation – Applies to the old process and is no longer relevant.
 - Parameter Measurement Information – Not necessary for the datasheet.

Side by side Product Electrical Comparison

- Representative Products listed
 - SN74LVC1G08
 - SN74LVC1G125

SN74LVC1G08 Electrical data comparison

PARAMETER	TEST CONDITIONS	V _{CC}	3D Condition	MIN	TYP	MAX	UNIT	ATE-CHAR (RFAB Die)					ATE-CHAR (Legacy LVC1G08 FFAB Die)				
			Level 1					STATS					STATS				
								MIN	MAX	CPK	μ-σ	μ+σ	MIN	MAX	CPK	μ-σ	μ+σ
V _{OH}	I _{OH} = −100 μA	1.1 V to 5.5 V	T _A = 25°C	V _{CC} - 0.1			V	1.0952	1.0956	CPK > 4	1.0949	1.0959	1.0902	1.0903	CPK > 4	1.0899	1.0905
V _{OH}	I _{OH} = −100 μA	1.1 V to 5.5 V	−40°C to 85°C	V _{CC} - 0.1			V	1.0951	1.0954	CPK > 4	1.0948	1.0957	1.0916	1.0917	CPK > 4	1.0913	1.092
V _{OH}	I _{OH} = −100 μA	1.1 V to 5.5 V	−40°C to 125°C	V _{CC} - 0.1			V	1.0947	1.096	CPK > 4	1.0943	1.0964	1.0875	1.0926	CPK > 4	1.0866	1.0931
V _{OH}	I _{OH} = −100 μA	1.2 V to 5.5 V	T _A = 25°C	V _{CC} - 0.1			V	1.1959	1.1962	CPK > 4	1.1956	1.1966	1.1932	1.1934	CPK > 4	1.1929	1.1937
V _{OH}	I _{OH} = −100 μA	1.2 V to 5.5 V	−40°C to 85°C	V _{CC} - 0.1			V	1.1958	1.196	CPK > 4	1.1954	1.1963	1.1938	1.1939	CPK > 4	1.1935	1.1942
V _{OH}	I _{OH} = −100 μA	1.2 V to 5.5 V	−40°C to 125°C	V _{CC} - 0.1			V	1.1953	1.1968	CPK > 4	1.195	1.1971	1.1926	1.1942	CPK > 4	1.1922	1.1944
V _{OH}	I _{OH} = −100 μA	1.2 V	T _A = 25°C	1			V	1.1959	1.1962	CPK > 4	1.1956	1.1966	1.1932	1.1934	CPK > 4	1.1929	1.1937
V _{OH}	I _{OH} = −100 μA	1.2 V	−40°C to 85°C				V	1.1958	1.196	CPK > 4	1.1954	1.1963	1.1938	1.1939	CPK > 4	1.1935	1.1942
V _{OH}	I _{OH} = −100 μA	1.2 V	−40°C to 125°C	1			V	1.1953	1.1968	CPK > 4	1.195	1.1971	1.1926	1.1942	CPK > 4	1.1922	1.1944
V _{OH}	I _{OH} = −100 μA	1.5 V	T _A = 25°C	1.3			V	1.4967	1.4972	CPK > 4	1.4964	1.4975	1.4961	1.4964	CPK > 4	1.4956	1.4969
V _{OH}	I _{OH} = −100 μA	1.5 V	−40°C to 85°C				V	1.4966	1.4969	CPK > 4	1.4963	1.4971	1.4961	1.4962	CPK > 4	1.4957	1.4966
V _{OH}	I _{OH} = −100 μA	1.5 V	−40°C to 125°C	1.3			V	1.4961	1.4976	CPK > 4	1.4959	1.4979	1.4961	1.4964	CPK > 4	1.4957	1.4967
V _{OH}	I _{OH} = −100 μA	3.6V	T _A = 25°C	3.4			V	3.5979	3.5983	CPK > 4	3.5977	3.5985	3.5984	3.5986	CPK > 4	3.598	3.599
V _{OH}	I _{OH} = −100 μA	3.6V	−40°C to 85°C				V	3.5978	3.5981	CPK > 4	3.5975	3.5984	3.5984	3.5986	CPK > 4	3.5979	3.5991
V _{OH}	I _{OH} = −100 μA	3.6V	−40°C to 125°C	3.4			V	3.5976	3.5986	CPK > 4	3.5973	3.5989	3.5983	3.5987	CPK > 4	3.598	3.599
V _{OH}	I _{OH} = −100 μA	5.5V	T _A = 25°C	3.4			V	5.4977	5.4981	CPK > 4	5.4974	5.4985	5.4985	5.4987	CPK > 4	5.4982	5.499
V _{OH}	I _{OH} = −100 μA	5.5V	−40°C to 85°C				V	5.4976	5.498	CPK > 4	5.4973	5.4983	5.4984	5.4986	CPK > 4	5.498	5.4989
V _{OH}	I _{OH} = −100 μA	5.5V	−40°C to 125°C	3.4			V	5.4974	5.4983	CPK > 4	5.4971	5.4987	5.4984	5.4987	CPK > 4	5.4979	5.4992
V _{OH}	I _{OH} = −4 mA	1.65 V	T _A = 25°C	1.2			V	1.5486	1.5573	CPK > 4	1.5471	1.5629	1.5301	1.5313	CPK > 4	1.5273	1.5335
V _{OH}	I _{OH} = −4 mA	1.65 V	−40°C to 85°C	1.2			V	1.5463	1.5481	CPK > 4	1.5446	1.5502	1.5248	1.5263	CPK > 4	1.5214	1.5291
V _{OH}	I _{OH} = −4 mA	1.65 V	−40°C to 125°C	1.2			V	1.5259	1.5758	CPK > 4	1.5204	1.5841	1.5218	1.5368	CPK > 4	1.5184	1.5388
V _{OH}	I _{OH} = −8 mA	2.3 V	T _A = 25°C	1.9			V	2.1399	2.1574	CPK > 4	2.1366	2.1704	2.1604	2.1614	CPK > 4	2.1582	2.1633
V _{OH}	I _{OH} = −8 mA	2.3 V	−40°C to 85°C	1.9			V	2.1393	2.1429	CPK > 4	2.1363	2.1471	2.1491	2.1504	CPK > 4	2.1466	2.1525
V _{OH}	I _{OH} = −8 mA	2.3 V	−40°C to 125°C	1.9			V	2.1038	2.1857	CPK > 4	2.0927	2.2025	2.1408	2.1722	CPK > 4	2.1374	2.1736
V _{OH}	I _{OH} = −12 mA	2.7 V	T _A = 25°C	2.2			V	2.4779	2.504	CPK > 4	2.473	2.5242	2.5258	2.527	CPK > 4	2.5231	2.5293
V _{OH}	I _{OH} = −12 mA	2.7 V	−40°C to 85°C	2.2			V	2.479	2.4842	CPK > 4	2.4747	2.4904	2.5103	2.5121	CPK > 4	2.5069	2.5151
V _{OH}	I _{OH} = −12 mA	2.7 V	−40°C to 125°C	2.2			V	2.4287	2.5423	CPK > 4	2.412	2.5681	2.4989	2.5412	CPK > 4	2.4949	2.5427
V _{OH}	I _{OH} = −16 mA	3 V	T _A = 25°C	2.4			V	2.7157	2.7505	CPK > 4	2.7092	2.7782	2.7901	2.7915	CPK > 4	2.7873	2.794
V _{OH}	I _{OH} = −16 mA	3 V	−40°C to 85°C	2.4			V	2.7188	2.7258	CPK > 4	2.7131	2.7339	2.7712	2.7731	CPK > 4	2.7676	2.7763
V _{OH}	I _{OH} = −16 mA	3 V	−40°C to 125°C	2.4			V	2.6539	2.7989	CPK > 4	2.6315	2.8332	2.7571	2.8089	CPK > 4	2.7525	2.8108
V _{OH}	I _{OH} = −24 mA	3 V	T _A = 25°C	2.3			V	2.5698	2.6224	CPK > 4	2.5598	2.6647	2.6755	2.6775	CPK > 4	2.6712	2.6813
V _{OH}	I _{OH} = −24 mA	3 V	−40°C to 85°C	2.3			V	2.5739	2.5844	CPK > 4	2.5652	2.5968	2.645	2.6482	CPK > 4	2.6388	2.6537
V _{OH}	I _{OH} = −24 mA	3 V	−40°C to 125°C	2.3			V	2.4739	2.6966	CPK > 4	2.4394	2.7487	2.6224	2.7053	CPK > 4	2.6149	2.7085
V _{OH}	I _{OH} = −32 mA	4.5 V	T _A = 25°C	3.8			V	3.9971	4.065	CPK > 4	3.9837	4.1241	4.2012	4.2024	CPK > 4	4.1986	4.205
V _{OH}	I _{OH} = −32 mA	4.5 V	−40°C to 85°C	3.8			V	4.0101	4.0245	CPK > 4	3.9992	4.0408	4.1744	4.1768	CPK > 4	4.1703	4.181
V _{OH}	I _{OH} = −32 mA	4.5 V	−40°C to 125°C	3.8			V	3.8943	4.1458	CPK > 4	3.8495	4.2154	4.1541	4.2265	CPK > 4	4.1489	4.2289
V _{OL}	I _{OL} = 100 μA	1.1 V to 5.5 V	T _A = 25°C			0.1	V	0.0033464	0.0039398	CPK > 4	0.0029662	0.0044385	0.0041584	0.0044707	CPK > 4	0.0035698	0.0049968
V _{OL}	I _{OL} = 100 μA	1.1 V to 5.5 V	−40°C to 85°C			0.1	V	0.0035338	0.0042208	CPK > 4	0.0032205	0.0046551	0.0043145	0.0046268	CPK > 4	0.0037871	0.0051792
V _{OL}	I _{OL} = 100 μA	1.1 V to 5.5 V	−40°C to 125°C			0.15	V	0.003284	0.0044707	CPK > 4	0.0027621	0.004971	0.0038773	0.0049079	CPK > 4	0.0032919	0.0054454
V _{OL}	I _{OL} = 100 μA	1.2 V to 5.5 V	T _A = 25°C			0.1	V	0.0026594	0.0031903	CPK > 4	0.0023848	0.0035872	0.0035026	0.0037836	CPK > 4	0.0030203	0.0043346
V _{OL}	I _{OL} = 100 μA	1.2 V to 5.5 V	−40°C to 85°C			0.1	V	0.0029092	0.0035026	CPK > 4	0.0025754	0.0038319	0.0038149	0.0040959	CPK > 4	0.0031919	0.0047002
V _{OL}	I _{OL} = 100 μA	1.2 V to 5.5 V	−40°C to 125°C			0.2	V	0.002472	0.0038149	CPK > 4	0.0019301	0.0042641	0.0033152	0.0042833	CPK > 4	0.0028626	0.0048324

- Electrical parameters are guaranteed to the product datasheet limits and stated test conditions.
- Cpk values > 2.0 are 6sigma limits with DPPM rates of less than 0.00198 (parts per million) and exceed the TI Quality Guidelines.

SN74LVC1G08 Electrical data comparison

PARAMETER	TEST CONDITIONS	V _{CC}	3D Condition	MIN	TYP	MAX	UNIT	ATE-CHAR (RFAB Die)					ATE-CHAR (Legacy LVC1G08 FFAB Die)				
			Level 1					STATS					STATS				
								MIN	MAX	CPK	μ-nσ	μ+nσ	MIN	MAX	CPK	μ-nσ	μ+nσ
V _{OL}	I _{OL} = 100 μA	1.2 V	T _A = 25°C			0.1	V	0.0026594	0.0031903	CPK > 4	0.0023848	0.0035872	0.0035026	0.0037836	CPK > 4	0.0030203	0.0043346
V _{OL}	I _{OL} = 100 μA	1.2 V	-40°C to 85°C			0.1	V	0.0029092	0.0035026	CPK > 4	0.0025754	0.0038319	0.0038149	0.0040959	CPK > 4	0.0031919	0.0047002
V _{OL}	I _{OL} = 100 μA	1.2 V	-40°C to 125°C			0.2	V	0.002472	0.0038149	CPK > 4	0.0019301	0.0042641	0.0033152	0.0042833	CPK > 4	0.0028626	0.0048324
V _{OL}	I _{OL} = 100 μA	1.5 V	T _A = 25°C			0.1	V	0.001785	0.0022534	CPK > 4	0.0014584	0.0025722	0.0026594	0.0027843	CPK > 4	0.0023896	0.0030167
V _{OL}	I _{OL} = 100 μA	1.5 V	-40°C to 85°C			0.1	V	0.0019724	0.0024408	CPK > 4	0.0017172	0.0028364	0.0028155	0.0030654	CPK > 4	0.0023122	0.0035437
V _{OL}	I _{OL} = 100 μA	1.5 V	-40°C to 125°C			0.2	V	0.0015039	0.0027843	CPK > 4	0.0010885	0.0032056	0.0023159	0.003284	CPK > 4	0.0017922	0.0036493
V _{OL}	I _{OL} = 100 μA	3.6 V	T _A = 25°C			0.1	V	0.00066075	0.0011916	CPK > 4	0.0004354	0.001509	0.0015039	0.0015664	CPK > 4	0.0013551	0.0016903
V _{OL}	I _{OL} = 100 μA	3.6 V	-40°C to 85°C			0.1	V	0.00091058	0.001379	CPK > 4	0.00061804	0.0016495	0.0015664	0.0017225	CPK > 4	0.0012853	0.0020348
V _{OL}	I _{OL} = 100 μA	3.6 V	-40°C to 125°C			0.2	V	0.00056707	0.0015039	CPK > 4	0.00031999	0.0018237	0.0013166	0.0019099	CPK > 4	0.0010501	0.0020292
V _{OL}	I _{OL} = 100 μA	5.5 V	T _A = 25°C			0.1	V	0.0005983	0.001098	CPK > 4	0.00029058	0.0013871	0.0012853	0.0014102	CPK > 4	0.00099492	0.0016757
V _{OL}	I _{OL} = 100 μA	5.5 V	-40°C to 85°C			0.1	V	0.00072321	0.0011916	CPK > 4	0.00047181	0.0014959	0.001379	0.0015664	CPK > 4	0.0010538	0.0019166
V _{OL}	I _{OL} = 100 μA	5.5 V	-40°C to 125°C			0.2	V	0.00047338	0.001379	CPK > 4	0.00014165	0.0016567	0.0011604	0.0016913	CPK > 4	0.00072379	0.0020049
V _{OL}	I _{OL} = 4 mA	1.65 V	T _A = 25°C			0.24	V	0.05781	0.066585	CPK > 4	0.051218	0.071709	0.085197	0.087758	CPK > 4	0.080801	0.093192
V _{OL}	I _{OL} = 4 mA	1.65 V	-40°C to 85°C			0.45	V	0.064399	0.080263	CPK > 4	0.060238	0.086915	0.095846	0.098626	CPK > 4	0.09096	0.10483
V _{OL}	I _{OL} = 4 mA	1.65 V	-40°C to 125°C			0.45	V	0.046099	0.090756	CPK > 4	0.033334	0.1026	0.076016	0.10818	CPK > 4	0.072305	0.11544
V _{OL}	I _{OL} = 8 mA	2.3 V	T _A = 25°C			0.3	V	0.076484	0.090412	CPK > 4	0.065226	0.097908	0.12589	0.12836	CPK > 4	0.12171	0.13349
V _{OL}	I _{OL} = 8 mA	2.3 V	-40°C to 85°C			0.3	V	0.086571	0.11252	CPK > 4	0.077273	0.1236	0.1431	0.14594	CPK > 4	0.13795	0.15253
V _{OL}	I _{OL} = 8 mA	2.3 V	-40°C to 125°C			0.3	V	0.058497	0.12892	CPK > 4	0.036652	0.14797	0.11134	0.16127	CPK > 4	0.10818	0.16926
V _{OL}	I _{OL} = 12 mA	2.7 V	T _A = 25°C				V	0.098782	0.11833	CPK > 4	0.081562	0.12911	0.16973	0.1727	CPK > 4	0.16482	0.17855
V _{OL}	I _{OL} = 12 mA	2.7 V	-40°C to 85°C			0.4	V	0.11184	0.14844	CPK > 4	0.096622	0.16481	0.19294	0.19665	CPK > 4	0.18632	0.20509
V _{OL}	I _{OL} = 12 mA	2.7 V	-40°C to 125°C			0.4	V	0.074985	0.17039	CPK > 4	0.043127	0.19719	0.14968	0.21758	CPK > 4	0.14597	0.22708
V _{OL}	I _{OL} = 16 mA	3 V	T _A = 25°C			0.4	V	0.1208	0.14591	CPK > 4	0.097811	0.16013	0.21302	0.21642	CPK > 4	0.20726	0.22337
V _{OL}	I _{OL} = 16 mA	3 V	-40°C to 85°C			0.4	V	0.13691	0.18382	CPK > 4	0.1158	0.20552	0.24234	0.24659	CPK > 4	0.23473	0.2563
V _{OL}	I _{OL} = 16 mA	3 V	-40°C to 125°C			0.4	V	0.091443	0.2113	CPK > 4	0.049031	0.24578	0.18766	0.27291	CPK > 4	0.18313	0.28378
V _{OL}	I _{OL} = 24 mA	3 V	T _A = 25°C			0.55	V	0.18385	0.22179	CPK > 4	0.14923	0.24358	0.32307	0.32841	CPK > 4	0.31402	0.33943
V _{OL}	I _{OL} = 24 mA	3 V	-40°C to 85°C			0.55	V	0.20893	0.28066	CPK > 4	0.17723	0.31399	0.36841	0.37513	CPK > 4	0.35651	0.39029
V _{OL}	I _{OL} = 24 mA	3 V	-40°C to 125°C			0.55	V	0.13854	0.32385	CPK > 4	0.074059	0.3769	0.28431	0.41629	CPK > 4	0.27779	0.43418
V _{OL}	I _{OL} = 32 mA	4.5 V	T _A = 25°C			0.55	V	0.18632	0.2321	CPK > 4	0.13812	0.26111	0.35595	0.36042	CPK > 4	0.34859	0.36924
V _{OL}	I _{OL} = 32 mA	4.5 V	-40°C to 85°C			0.55	V	0.21005	0.29362	CPK > 4	0.16029	0.33781	0.40367	0.40913	CPK > 4	0.39388	0.42159
V _{OL}	I _{OL} = 32 mA	4.5 V	-40°C to 125°C			0.55	V	0.14238	0.33659	CPK > 4	0.059351	0.39942	0.3146	0.45192	CPK > 4	0.30957	0.46684

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- Cpk values > 2.0 are 6sigma limits with DPPM rates of less than 0.00198 (parts per million) and exceed the TI Quality Guidelines.

SN74LVC1G08 Electrical data comparison

PARAMETER	TEST CONDITIONS	V _{CC}	3D Condition	MIN	TYP	MAX	UNIT	ATE-CHAR (RFAB DIE)					ATE-CHAR (Legacy LVC1G08 FFAB DIE)				
			Level 1					STATS					STATS				
								MIN	MAX	CPK	μ-nσ	μ+nσ	MIN	MAX	CPK	μ-nσ	μ+nσ
I _I	V _I = V _{CC} or GND	V _{CC} = 0V to 5.5 V	T _A = 25°C			±1	μA	-0.045757	0.042224	CPK > 4	-0.11774	0.096672	-5.1592e-10	1.6292e-08	CPK > 4	-1.7552e-08	3.4605e-08
I _I	V _I = V _{CC} or GND	V _{CC} = 0V to 5.5 V	-40°C to 85°C			±5	μA	-7.9678e-10	8.1144e-09	CPK > 4	-2.063e-09	9.9578e-09	-8.904e-10	1.982e-08	CPK > 4	-2.4604e-08	4.3879e-08
I _I	V _I = V _{CC} or GND	V _{CC} = 0V to 5.5 V	-40°C to 125°C			±5	μA	-0.045757	0.039082	CPK > 4	-0.11514	0.1118	-8.2799e-10	2.3378e-08	CPK > 4	-2.8019e-08	5.1203e-08
I _{off}	V _I or V _O = V _{CC}	V _{CC} = 0 V	T _A = 25°C			±1	μA	2.6013e-09	0.0087075	CPK > 4	1.0116e-09	0.01066	3.2913e-09	2.2608e-07	CPK > 4	-1.2841e-07	4.2069e-07
I _{off}	V _I or V _O = V _{CC}	V _{CC} = 0 V	-40°C to 85°C			±10	μA	2.792e-09	9.4566e-09	CPK > 4	1.097e-09	1.0918e-08	3.5097e-09	1.2341e-06	CPK > 4	-5.7421e-07	2.2284e-06
I _{off}	V _I or V _O = V _{CC}	V _{CC} = 0 V	-40°C to 125°C			±10	μA	2.3203e-09	0.023925	CPK > 4	-4.1923e-05	0.02576	2.792e-09	4.2839e-06	CPK > 4	-1.6406e-06	7.5379e-06
I _{OZ}	V _O = V _{CC} or GND	5.5 V	T _A = 25°C			±1	μA	-0.0012077	0.0038189	CPK > 4	-0.0022296	0.0052222	-8.955e-10	4.6618e-09	CPK > 4	-2.6397e-09	8.6665e-09
I _{OZ}	V _O = V _{CC} or GND	5.5 V	-40°C to 125°C			±15	μA	-0.013197	0.0098133	CPK > 4	-0.015264	0.01158	-1.9184e-07	5.5989e-08	CPK > 4	-5.5128e-07	4.7296e-07
I _{CC}	V _I = V _{CC} or GND, I _O = 0	V _{CC} = 1.1 V to 5.5 V	T _A = 25°C			1	μA	-0.0026837	0.0016259	CPK > 4	-0.0057409	0.0051138	-1.4658e-09	1.7195e-09	CPK > 4	-7.1615e-09	7.5526e-09
I _{CC}	V _I = V _{CC} or GND, I _O = 0	V _{CC} = 1.1 V to 5.5 V	-40°C to 85°C			10	μA	-2.1528e-09	1.8132e-09	CPK > 4	-4.0352e-09	4.6992e-09	2.5627e-09	7.9965e-09	CPK > 4	-4.5823e-09	1.6141e-08
I _{CC}	V _I = V _{CC} or GND, I _O = 0	V _{CC} = 1.1 V to 5.5 V	-40°C to 125°C			10	μA	-0.0020591	0.014211	CPK > 4	-0.0053201	0.018128	-1.4658e-09	4.0068e-08	CPK > 4	-1.0069e-08	4.6568e-08
I _{CC}	V _I = V _{CC} or GND, I _O = 0	V _{CC} = 1.65 V to 5.5 V	T _A = 25°C			1	μA	7.5145e-10	0.008746	CPK > 4	-0.0022709	0.011852	2.4066e-09	9.1832e-09	CPK > 4	-3.1815e-09	1.6059e-08
I _{CC}	V _I = V _{CC} or GND, I _O = 0	V _{CC} = 1.65 V to 5.5 V	-40°C to 85°C			10	μA	1.5009e-09	5.9979e-09	CPK > 4	1.2013e-10	8.1921e-09	1.0495e-08	1.7084e-08	CPK > 4	4.1377e-09	2.5633e-08
I _{CC}	V _I = V _{CC} or GND, I _O = 0	V _{CC} = 1.65 V to 5.5 V	-40°C to 125°C			10	μA	8.4513e-10	0.02639	CPK > 4	-0.002907	0.031262	1.3136e-09	6.9892e-08	CPK > 4	-2.6508e-09	8.0404e-08
ΔI _{CC}	One input at V _{CC} - 0.6 V, other inputs at V _{CC} or GND	3.0 V to 5.5 V	T _A = 25°C			500	μA	1.7287e-07	0.46202	CPK > 4	-2.0721e-08	0.55588	3.9602e-07	1.3798e-06	CPK > 4	1.9755e-07	1.7176e-06
ΔI _{CC}	One input at V _{CC} - 0.6 V, other inputs at V _{CC} or GND	3.0 V to 5.5 V	-40°C to 85°C			500	μA	7.3232e-07	3.0267e-06	CPK > 4	1.0943e-07	4.5301e-06	2.4013e-06	6.8455e-06	CPK > 4	1.7383e-06	8.3531e-06
ΔI _{CC}	One input at V _{CC} - 0.6 V, other inputs at V _{CC} or GND	3.0 V to 5.5 V	-40°C to 125°C			500	μA	-0.047145	6.176	CPK > 4	-0.13816	6.6906	2.5144e-08	1.9939e-05	CPK > 4	-5.7294e-08	2.3869e-05

- Electrical parameters are guaranteed to the product datasheet limits and stated test conditions.
- Cpk values > 2.0 are 6sigma limits with DPPM rates of less than 0.00198 (parts per million) and exceed the TI Quality Guidelines.

SN74LVC1G125 Electrical data comparison

PARAMETER	TEST CONDITIONS	V _{CC}	3D Condition	MIN	MAX	UNIT	ATE-CHAR (RFAB Die)					ATE-CHAR (Legacy LVC1G125 FFAB Die)				
			Level 1				STATS					STATS				
							MIN	MAX	CPK	μ-nσ	μ+nσ	MIN	MAX	CPK	μ-nσ	μ+nσ
V _{OH}	I _{OH} = −100 μA	1.1 V to 5.5 V	T _A = 25°C	V _{CC} - 0.1		V	1.0952	1.0956	CPK > 4	1.0949	1.0959	1.0859	1.088	CPK > 4	1.0817	1.0925
V _{OH}	I _{OH} = −100 μA	1.1 V to 5.5 V	−40°C to 125°C	V _{CC} - 0.1		V	1.0947	1.096	CPK > 4	1.0943	1.0964	1.0611	1.0901	CPK > 4	1.0253	1.1262
V _{OH}	I _{OH} = −100 μA	1.2 V to 5.5 V	T _A = 25°C	V _{CC} - 0.1		V	1.1959	1.1962	CPK > 4	1.1956	1.1966	1.1919	1.1927	CPK > 4	1.1905	1.1943
V _{OH}	I _{OH} = −100 μA	1.2 V to 5.5 V	−40°C to 125°C	V _{CC} - 0.1		V	1.1953	1.1968	CPK > 4	1.195	1.1971	1.1901	1.1933	CPK > 4	1.1869	1.1955
V _{OH}	I _{OH} = −100 μA	1.2 V	T _A = 25°C	1		V	1.1959	1.1962	CPK > 4	1.1956	1.1966	1.1919	1.1927	CPK > 4	1.1905	1.1943
V _{OH}	I _{OH} = −100 μA	1.2 V	−40°C to 125°C	1		V	1.1953	1.1968	CPK > 4	1.195	1.1971	1.1901	1.1933	CPK > 4	1.1869	1.1955
V _{OH}	I _{OH} = −100 μA	1.5 V	T _A = 25°C	1.3		V	1.4967	1.4972	CPK > 4	1.4964	1.4975	1.496	1.4963	CPK > 4	1.4953	1.4969
V _{OH}	I _{OH} = −100 μA	1.5 V	−40°C to 125°C	1.3		V	1.4961	1.4976	CPK > 4	1.4959	1.4979	1.4959	1.4963	CPK > 4	1.4953	1.4969
V _{OH}	I _{OH} = −100 μA	3.6V	T _A = 25°C	3.4		V	3.5979	3.5983	CPK > 4	3.5977	3.5985	3.5984	3.5986	CPK > 4	3.598	3.599
V _{OH}	I _{OH} = −100 μA	3.6V	−40°C to 125°C	3.4		V	3.5976	3.5986	CPK > 4	3.5973	3.5989	3.5982	3.5987	CPK > 4	3.5975	3.5994
V _{OH}	I _{OH} = −100 μA	5.5V	T _A = 25°C	3.4		V	5.4977	5.4981	CPK > 4	5.4974	5.4985	5.4983	5.4985	CPK > 4	5.4977	5.4991
V _{OH}	I _{OH} = −100 μA	5.5V	−40°C to 125°C	3.4		V	5.4974	5.4983	CPK > 4	5.4971	5.4987	5.4981	5.4986	CPK > 4	5.4977	5.499
V _{OH}	I _{OH} = −4 mA	1.65 V	T _A = 25°C	1.2		V	1.5486	1.5573	CPK > 4	1.5471	1.5629	1.5278	1.537	CPK > 4	1.5105	1.553
V _{OH}	I _{OH} = −4 mA	1.65 V	−40°C to 125°C	1.2		V	1.5259	1.5758	CPK > 4	1.5204	1.5841	1.517	1.5405	CPK > 4	1.4951	1.5556
V _{OH}	I _{OH} = −8 mA	2.3 V	T _A = 25°C	1.9		V	2.1399	2.1574	CPK > 4	2.1366	2.1704	2.1576	2.1674	CPK > 4	2.1391	2.1846
V _{OH}	I _{OH} = −8 mA	2.3 V	−40°C to 125°C	1.9		V	2.1038	2.1857	CPK > 4	2.0927	2.2025	2.1373	2.1698	CPK > 4	2.1074	2.1909
V _{OH}	I _{OH} = −12 mA	2.7 V	T _A = 25°C	2.2		V	2.4779	2.504	CPK > 4	2.473	2.5242	2.5192	2.5319	CPK > 4	2.4943	2.5553
V _{OH}	I _{OH} = −12 mA	2.7 V	−40°C to 125°C	2.2		V	2.4287	2.5423	CPK > 4	2.412	2.5681	2.4903	2.5395	CPK > 4	2.4471	2.5685
V _{OH}	I _{OH} = −16 mA	3 V	T _A = 25°C	2.4		V	2.7157	2.7505	CPK > 4	2.7092	2.7782	2.7793	2.7953	CPK > 4	2.7475	2.8253
V _{OH}	I _{OH} = −16 mA	3 V	−40°C to 125°C	2.4		V	2.6539	2.7989	CPK > 4	2.6315	2.8332	2.742	2.8044	CPK > 4	2.6854	2.8445
V _{OH}	I _{OH} = −24 mA	3 V	T _A = 25°C	2.3		V	2.5698	2.6224	CPK > 4	2.5598	2.6647	2.6603	2.6853	CPK > 4	2.6117	2.7309
V _{OH}	I _{OH} = −24 mA	3 V	−40°C to 125°C	2.3		V	2.4739	2.6966	CPK > 4	2.4394	2.7487	2.6008	2.6994	CPK > 4	2.5109	2.7654
V _{OH}	I _{OH} = −32 mA	4.5 V	T _A = 25°C	3.8		V	3.9971	4.065	CPK > 4	3.9837	4.1241	4.1648	4.1918	CPK > 4	4.1065	4.2483
V _{OH}	I _{OH} = −32 mA	4.5 V	−40°C to 125°C	3.8		V	3.8943	4.1458	CPK > 4	3.8495	4.2154	4.104	4.2042	CPK > 4	3.9983	4.2854

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SN74LVC1G125 Electrical data comparison

PARAMETER	TEST CONDITIONS	V _{CC}	3D Condition	MIN	MAX	UNIT	ATE-CHAR (RFAB Die)					ATE-CHAR (Legacy LVC1G125 FFAB Die)				
			Level 1				STATS					STATS				
							MIN	MAX	CPK	μ-σ	μ+σ	MIN	MAX	CPK	μ-σ	μ+σ
V _{OL}	I _{OL} = 100 μA	1.1 V to 5.5 V	T _A = 25°C		0.1	V	0.0033464	0.0039398	CPK > 4	0.0029662	0.0044385	0.003971	0.0043145	CPK > 4	0.0033404	0.0048764
V _{OL}	I _{OL} = 100 μA	1.1 V to 5.5 V	-40°C to 125°C		0.15	V	0.003284	0.0044707	CPK > 4	0.0027621	0.004971	0.0037524	0.0043458	CPK > 4	0.0030837	0.0048334
V _{OL}	I _{OL} = 100 μA	1.2 V to 5.5 V	T _A = 25°C		0.1	V	0.0026594	0.0031903	CPK > 4	0.0023848	0.0035872	0.0032215	0.0035963	CPK > 4	0.0025528	0.0043025
V _{OL}	I _{OL} = 100 μA	1.2 V to 5.5 V	-40°C to 125°C		0.2	V	0.002472	0.0038149	CPK > 4	0.0019301	0.0042641	0.0030029	0.0037836	CPK > 4	0.0023753	0.0041026
V _{OL}	I _{OL} = 100 μA	1.2 V	T _A = 25°C		0.1	V	0.0026594	0.0031903	CPK > 4	0.0023848	0.0035872	0.0032215	0.0035963	CPK > 4	0.0025528	0.0043025
V _{OL}	I _{OL} = 100 μA	1.2 V	-40°C to 125°C		0.2	V	0.002472	0.0038149	CPK > 4	0.0019301	0.0042641	0.0030029	0.0037836	CPK > 4	0.0023753	0.0041026
V _{OL}	I _{OL} = 100 μA	1.5 V	T _A = 25°C		0.1	V	0.001785	0.0022534	CPK > 4	0.0014584	0.0025722	0.0024096	0.0025969	CPK > 4	0.0020326	0.0029115
V _{OL}	I _{OL} = 100 μA	1.5 V	-40°C to 125°C		0.2	V	0.0015039	0.0027843	CPK > 4	0.0010885	0.0032056	0.0020036	0.0027843	CPK > 4	0.0015011	0.0033218
V _{OL}	I _{OL} = 100 μA	3.6 V	T _A = 25°C		0.1	V	0.0006607 5	0.0011916	CPK > 4	0.0004354	0.001509	0.0014102	0.0014727	CPK > 4	0.0012541	0.0016288
V _{OL}	I _{OL} = 100 μA	3.6 V	-40°C to 125°C		0.2	V	0.0005670 7	0.0015039	CPK > 4	0.0003199 9	0.0018237	0.0012541	0.0017538	CPK > 4	0.0007868 4	0.0020988
V _{OL}	I _{OL} = 100 μA	5.5 V	T _A = 25°C		0.1	V	0.0005983	0.001098	CPK > 4	0.0002905 8	0.0013871	0.0012853	0.0014727	CPK > 4	0.0009200 5	0.001838
V _{OL}	I _{OL} = 100 μA	5.5 V	-40°C to 125°C		0.2	V	0.0004733 8	0.001379	CPK > 4	0.0001416 5	0.0016567	0.0011292	0.0015976	CPK > 4	0.0006303 5	0.0019977
V _{OL}	I _{OL} = 4 mA	1.65 V	T _A = 25°C		0.24	V	0.05781	0.066585	CPK > 4	0.051218	0.071709	0.077921	0.081106	CPK > 4	0.072093	0.087496
V _{OL}	I _{OL} = 4 mA	1.65 V	-40°C to 125°C		0.45	V	0.046099	0.090756	CPK > 4	0.033334	0.1026	0.067303	0.091568	CPK > 4	0.05634	0.097605
V _{OL}	I _{OL} = 8 mA	2.3 V	T _A = 25°C		0.3	V	0.076484	0.090412	CPK > 4	0.065226	0.097908	0.11583	0.12142	CPK > 4	0.10575	0.13227
V _{OL}	I _{OL} = 8 mA	2.3 V	-40°C to 125°C		0.3	V	0.058497	0.12892	CPK > 4	0.036652	0.14797	0.098688	0.13863	CPK > 4	0.079664	0.14972
V _{OL}	I _{OL} = 12 mA	2.7 V	T _A = 25°C			V	0.098782	0.11833	CPK > 4	0.081562	0.12911	0.15709	0.16539	CPK > 4	0.14232	0.18127
V _{OL}	I _{OL} = 12 mA	2.7 V	-40°C to 125°C		0.4	V	0.074985	0.17039	CPK > 4	0.043127	0.19719	0.1337	0.1896	CPK > 4	0.10667	0.20644
V _{OL}	I _{OL} = 16 mA	3 V	T _A = 25°C		0.4	V	0.1208	0.14591	CPK > 4	0.097811	0.16013	0.19809	0.20914	CPK > 4	0.17846	0.23015
V _{OL}	I _{OL} = 16 mA	3 V	-40°C to 125°C		0.4	V	0.091443	0.2113	CPK > 4	0.049031	0.24578	0.1688	0.24019	CPK > 4	0.13399	0.26266
V _{OL}	I _{OL} = 24 mA	3 V	T _A = 25°C		0.55	V	0.18385	0.22179	CPK > 4	0.14923	0.24358	0.29952	0.31676	CPK > 4	0.26949	0.34911
V _{OL}	I _{OL} = 24 mA	3 V	-40°C to 125°C		0.55	V	0.13854	0.32385	CPK > 4	0.074059	0.3769	0.25499	0.36426	CPK > 4	0.20225	0.39835
V _{OL}	I _{OL} = 32 mA	4.5 V	T _A = 25°C		0.55	V	0.18632	0.2321	CPK > 4	0.13812	0.26111	0.33828	0.35989	CPK > 4	0.30022	0.40039
V _{OL}	I _{OL} = 32 mA	4.5 V	-40°C to 125°C		0.55	V	0.14238	0.33659	CPK > 4	0.059351	0.39942	0.29009	0.41451	CPK > 4	0.22626	0.45997

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SN74LVC1G125 Electrical data comparison

PARAMETER	TEST CONDITIONS	V _{CC}	3D Condition	MIN	MAX	UNIT	ATE-CHAR (RFAB Die)					ATE-CHAR (Legacy LVC1G125 FFAB Die)				
			Level 1				STATS					STATS				
							MIN	MAX	CPK	μ-nσ	μ+nσ	MIN	MAX	CPK	μ-nσ	μ+nσ
I _I	V _I = V _{CC} or GND	V _{CC} = 0V to 5.5 V	T _A = 25°C		±1	μA	-0.045757	0.042224	CPK > 4	-0.11774	0.096672	-3.6331e-08	8.2705e-09	CPK > 4	-9.2276e-08	5.4039e-08
I _I	V _I = V _{CC} or GND	V _{CC} = 0V to 5.5 V	-40°C to 125°C		±5	μA	-0.045757	0.039082	CPK > 4	-0.11514	0.1118	-4.89e-08	1.6927e-07	CPK > 4	-3.9255e-07	4.7303e-07
I _{off}	V _I or V _O = V _{CC}	V _{CC} = 0 V	T _A = 25°C		±1	μA	2.6013e-09	0.0087075	CPK > 4	1.0116e-09	0.01066	2.2615e-09	3.2667e-08	CPK > 4	-7.887e-09	5.7636e-08
I _{off}	V _I or V _O = V _{CC}	V _{CC} = 0 V	-40°C to 125°C		±10	μA	2.3203e-09	0.023925	CPK > 4	-4.1923e-05	0.02576	1.887e-09	3.4528e-07	CPK > 4	-4.5599e-07	7.3691e-07
I _{oz}	V _O = V _{CC} or GND	5.5 V	T _A = 25°C		±1	μA	-0.0012077	0.0038189	CPK > 4	-0.0022296	0.0052222	-8.955e-10	4.6618e-09	CPK > 4	-2.6397e-09	8.6665e-09
I _{oz}	V _O = V _{CC} or GND	5.5 V	-40°C to 125°C		±15	μA	-0.013197	0.0098133	CPK > 4	-0.015264	0.01158	-1.9184e-07	5.5989e-08	CPK > 4	-5.5128e-07	4.7296e-07
I _{CC}	V _I = V _{CC} or GND, I _O = 0	V _{CC} = 1.1 V to 5.5 V	T _A = 25°C		1	μA	-0.0026837	0.0016259	CPK > 4	-0.0057409	0.0051138	-2.2153e-09	2.0318e-09	CPK > 4	-9.0179e-09	9.2717e-09
I _{CC}	V _I = V _{CC} or GND, I _O = 0	V _{CC} = 1.1 V to 5.5 V	-40°C to 125°C		10	μA	-0.0020591	0.014211	CPK > 4	-0.0053201	0.018128	-1.497e-09	6.4395e-08	CPK > 4	-1.6085e-07	1.8619e-07
I _{CC}	V _I = V _{CC} or GND, I _O = 0	V _{CC} = 1.65 V to 5.5 V	T _A = 25°C		1	μA	7.5145e-10	0.008746	CPK > 4	-0.0022709	0.011852	3.0624e-09	7.9028e-09	CPK > 4	-2.4073e-09	1.4366e-08
I _{CC}	V _I = V _{CC} or GND, I _O = 0	V _{CC} = 1.65 V to 5.5 V	-40°C to 125°C		10	μA	8.4513e-10	0.02639	CPK > 4	-0.002907	0.031262	2.9999e-09	4.0448e-07	CPK > 4	-9.8696e-07	1.1568e-06
ΔI _{CC}	One input at V _{CC} - 0.6 V, other inputs at V _{CC} or GND	3.0 V to 5.5 V	T _A = 25°C		500	μA	1.7287e-07	0.46202	CPK > 4	-2.0721e-08	0.55588	6.286e-09	2.263e-07	CPK > 4	-3.2376e-07	5.7646e-07
ΔI _{CC}	One input at V _{CC} - 0.6 V, other inputs at V _{CC} or GND	3.0 V to 5.5 V	-40°C to 125°C		500	μA	-0.047145	6.176	CPK > 4	-0.13816	6.6906	-2.5144e-08	1.3389e-06	CPK > 4	-1.8845e-06	3.2976e-06

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- Cpk values > 2.0 are 6sigma limits with DPPM rates of less than 0.00198 (parts per million) and exceed the TI Quality Guidelines.

PCN Supporting Information

- For PCN 20260915000.1 there have been no changes to existing ECO parameters. Additional information can be found as follows:
- TI's comprehensive approach to environmental and product stewardship information, including RoHS, REACH, and TI's operations and data on substances contained in our products can be found on the Quality & Reliability page at:
 - http://www.ti.com/lscs/ti/quality/environmental_info/environmentalhome.page

Conclusion

- The wafer fab site process change from FFAB to RFAB has been qualified.
- The electrical data comparisons show that the two processes are performing to required datasheet guarantee.
- Texas Instruments is pleased to announce the Qualification of new Fab site (RFAB) using qualified Process Technology, Die Revision, and marking options for the devices listed in “Product Affected” section of the PCN notice.
- For further information of questions, please contact your PCN representative.

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