

PCN Number:	20201204001.2	PCN Date:	Dec 08, 2020
Title:	Qualification of TI Malaysia (TIM) as an additional Assembly & Test site for select devices		
Customer Contact:	PCN Manager	Dept:	Quality Services
Proposed 1st Ship Date:	June 08, 2021	Estimated Sample Availability:	Date Provided at Sample request
Change Type:			
<input checked="" type="checkbox"/>	Assembly Site	<input type="checkbox"/>	Design
<input type="checkbox"/>	Assembly Process	<input type="checkbox"/>	Data Sheet
<input type="checkbox"/>	Assembly Materials	<input type="checkbox"/>	Part number change
<input type="checkbox"/>	Mechanical Specification	<input checked="" type="checkbox"/>	Test Site
<input checked="" type="checkbox"/>	Packing/Shipping/Labeling	<input type="checkbox"/>	Test Process
<input type="checkbox"/>		<input type="checkbox"/>	Wafer Bump Site
<input type="checkbox"/>		<input type="checkbox"/>	Wafer Bump Material
<input type="checkbox"/>		<input type="checkbox"/>	Wafer Bump Process
<input type="checkbox"/>		<input type="checkbox"/>	Wafer Fab Site
<input type="checkbox"/>		<input type="checkbox"/>	Wafer Fab Materials
<input type="checkbox"/>		<input type="checkbox"/>	Wafer Fab Process

PCN Details

Description of Change:

Texas Instruments Incorporated is announcing the qualification TI Malaysia (TIM) as Additional Assembly & test Site for select devices listed in the "Product Affected" Section. No material differences between sites.

Assembly Site	Assembly Site Origin	Assembly Country Code	Assembly Site City
TI Taiwan	TAI	TWN	Chung Ho, New Taipei City
TI Malaysia	MLA	MYS	Kuala Lumpur

Test coverage, insertions, conditions will remain consistent with current testing and verified with test MQ.

Reason for Change:

Continuity of supply

Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):

None


Anticipated impact on Material Declaration

<input checked="" type="checkbox"/>	No Impact to the Material Declaration	<input type="checkbox"/>	Material Declarations or Product Content reports are driven from production data and will be available following the production release. Upon production release the revised reports can be obtained at the site link below http://www.ti.com/quality/docs/materialcontentsearch.tsp
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Changes to product identification resulting from this PCN:

Assembly Site		
TI-Taiwan	Assembly Site Origin (22L)	ASO: TAI
TI Malaysia	Assembly Site Origin (22L)	ASO: MLA


Sample product shipping label (not actual product label)




MADE IN: Malaysia
2DC: 2Q:

MSL 2 / 260C / 1 YEAR	SEAL DT
MSL 1 / 235C / UNLIM	03 / 29 / 04

OPT: 39
ITEM: 5A (L)T0:1750





(1P) SN74LS07NSR
(Q) 2000 (D) 0336
(31T) LOT: 3959047MLA
(4W) TKY (1T) 7523483SI2
(P)
(2P) REV: (V) 0033317
(20L) CSO: SHE (21L) CCO:USA
(22L) ASO: MLA (23L) ACO: MYS

Product Affected:			
UCC21520AQDWQ1	UCC21520AQDWRQ1	UCC21520QDWQ1	UCC21520QDWRQ1

Qualification Report

Automotive New Product Qualification Summary

(As per AEC-Q100 and JEDEC Guidelines)
Approved 20-Nov-2020

Qualification Results

Data Displayed as: Number of lots / Total sample size / Total failed

Typ e	#	Test Spec	M i n L o t Q t y	S S / L o t	Test Name / Condition	Duration	Qual Device: <u>UCC21520AQDWRQ1</u>	QBS Product Reference: <u>UCC21520AQDWRQ1</u>	QBS Product Reference: <u>UCC21520QDWRQ1</u>	QBS Process Reference: <u>ISO7741FQDWQ1</u>	QBS Product Reference: <u>ISO7741FQDWQ1</u>
Test Group A – Accelerated Environment Stress Tests											
PC	A 1	JEDEC J-STD-020 JESD22-A113	3	7 7	Preconditioning	Level 2-260C	3/828/0	1/370/0	3/800/0	3/1304/0	1/330/0
HAST	A 2	JEDEC JESD22-A110	3	7 7	Biased HAST, 130C/85%RH	96 Hours	3/231/0	1/77/0	3/231/0	3/231/0	1/77/0
AC	A 3	JEDEC JESD22-A102	3	7 7	Autoclave 121C	96 Hours	3/231/0	1/77/0	2/154/0	3/231/0	1/77/0
TC	A 4	JEDEC JESD22-A104 and Appendix 3	3	7 7	Temperature Cycle, -65/150C	500 Cycles	3/231/0	1/77/0	1/77/0	3/230/1 ^{Note 2}	1/77/0
TC - BP	A 4	MIL-STD883 Method 2011	1	3 0	Post 500 Temp. Cycle, Bond Pull	Wires	3/150/0	1/5/0	3/15/0	2/100/0	1/60/0
PT C	A 5	JEDEC JESD22-A105	1	4 5	Power Temperature Cycle, -40/125C	1000 Cycles	-	1/45/0	1/50/0	-	-
HT SL	A 6	JEDEC JESD22-A103	1	4 5	High Temp. Storage Bake, 150C	1000 Hours	-	1/45/0	1/45/0	-	-
HT SL	A 6	JEDEC JESD22-A103	1	4 5	High Temp. Storage Bake, 175C	500 Hours	3/135/0	-	-	3/231/0	1/45/0
Test Group B – Accelerated Lifetime Simulation Tests											
HT OL	B 1	JEDEC JESD22-A108	3	7 7	Life Test, 125C	1000 Hours	1/77/0	1/77/1 ^{Note 1}	3/230/1 ^{Note 2}	3/231/0	1/77/0
EL FR	B 2	AEC Q100-008	3	8 0 0	Early Life Failure Rate, 125C	48 Hours	-	-	-	3/2400/0	-

	ED R	B 3	AEC Q100-005	3	7 7	NVM Endurance, Data Retention, and Operational Life	--	N/A	N/A	N/A	N/A	N/A
Test Group C – Package Assembly Integrity Tests												
	W BS	C 1	AEC Q100-001	1	3 0	Bond Shear (Cpk>1.67)	Wires	3/90/0	-	3/90/0	3/228/0	1/76/0
	W BP	C 2	MIL-STD883 Method 2011	1	3 0	Bond Pull (Cpk>1.67)	Wires	3/90/0	-	3/90/0	3/228/0	1/76/0
	SD	C 3	JEDEC JESD22-B102	1	1 5	Surface Mount Solderability >95% Lead Coverage	--	1/15/0	-	-	-	1/15/0
	PD	C 4	JEDEC JESD22-B100 and B108	3	1 0	Physical Dimensions (Cpk>1.67)	--	3/90/0	-	-	3/30/0	-
	LI	C 6	JEDEC JESD22-B105	1	5 0	Lead Integrity	Leads	1/48/0	-	-	-	1/45/0
Test Group D – Die Fabrication Reliability Tests												
	EM	D 1	JESD61	-	-	Electromigration	--	Completed Per Process Technology Requirements	-	-	-	-
	TD DB	D 2	JESD35	-	-	Time Dependant Dielectric Breakdown	--	Completed Per Process Technology Requirements	-	-	-	-
	HC I	D 3	JESD60 & 28	-	-	Hot Injection Carrier	--	Completed Per Process Technology Requirements	-	-	-	-
	NB TI	D 4	-	-	-	Negative Bias Temperature Instability	--	Completed Per Process Technology Requirements	-	-	-	-
	SM	D 5	-	-	-	Stress Migration	--	Completed Per Process Technology Requirements	-	-	-	-
Test Group E – Electrical Verification Tests												
	HB M	E 2	AEC Q100-002	1	3	ESD - HBM	5000 V	-	1/3/0	-	1/3/0	-
	CD M	E 3	AEC Q100-011	1	3	ESD - CDM	1500 V	1/3/0	1/3/0	-	-	-
	LU	E 4	AEC Q100-004	1	6	Latch-up	(Per AED Q100-004)	-	1/6/0	1/6/0	1/6/0	-
	ED	E 5	AEC Q100-009	3	3 0	Electrical Distributions	Cpk>1.67 Room, Hot, & Cold	3/90/0	3/90/0	3/90/0	3/90/0	-

- QBS: Qual By Similarity
- Qual Device UCC21520AQDWRQ1 is qualified at LEVEL3-260C
- Device UCC21520AQDWRQ1 contains multiple dies

A1 (PC): Preconditioning:

Performed for THB, Biased HAST, AC, uHAST, TC & PTC samples, as applicable.

Ambient Operating Temperature by Automotive Grade Level:

Grade 0 (or E): -40°C to +150°C

Grade 1 (or Q): -40°C to +125°C

Grade 2 (or T): -40°C to +105°C

Grade 3 (or I): -40°C to +85°C

E1 (TEST): Electrical test temperatures of Qual samples (High temperature according to Grade level):
Room/Hot/Cold: HTOL, ED
Room/Hot: THB / HAST, TC / PTC, HTSL, ELFR, ESD & LU
Room: AC/uHAST
Green/Pb-free Status:
Qualified Pb-Free (SMT) and Green

NOTES:

1. One unit failed during HTOL (168 hrs interim read point) due to mis-handling induced electrical overstress. Contact TI Quality group for full 8D report.
2. One unit failed during HTOL (168 hrs interim read point) and 1 unit during Temp Cycle due to Test Solution induced electrical overstress. Contact TI Quality group for full 8D report.

For questions regarding this notice, e-mails can be sent to the regional contacts shown below or your local Field Sales Representative.

Location	E-Mail
USA	PCNAmericasContact@list.ti.com
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