

PCN Number:	20170220001	PCN Date:	March 1, 2017
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 1, 2017	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 checked="" 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"/>	Wafer Bump Site
		<input type="checkbox"/>	Wafer Bump Material
		<input type="checkbox"/>	Wafer Bump Process
		<input type="checkbox"/>	Wafer Fab Site
		<input type="checkbox"/>	Wafer Fab Materials
		<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. Current assembly sites and Material differences are as follows.

Assembly Site	Assembly Site Origin	Assembly Country Code	Assembly Site City
Amkor P1	AKR	PHL	Cupang, Muntinlupa City
TI Clark	QAB	PHL	Angeles City, Pampanga
TI Malaysia	MLA	MYS	Kuala Lumpur

Material Differences:

Group 1 Devices (Assembly Only):

	Amkor P1	TI Malaysia
Mount compound	101374994	4208458
Mold compound	101325958	4222468
Lead finish	Sn	NiPdAu

Company Logo:

Amkor P1	TI Malaysia
<pre> ! \NS/YMLLLLP3 ! LM98555 ! CCMH ! ! 0 </pre>	<pre> ! \TI/YMLLLLSG4 ! LM98555 ! CCMH ! ! 0 </pre>

Group 2 Devices (Assembly & Test):

	TI Clark	TI Malaysia
Mount compound	4207123	4207768

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

Reason for Change:

Group 1 Device: Discontinuation of production line at AMKOR P1 for HTSSOP package device

Group 2 Device: Continuity of supply for the QFN package device

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

None

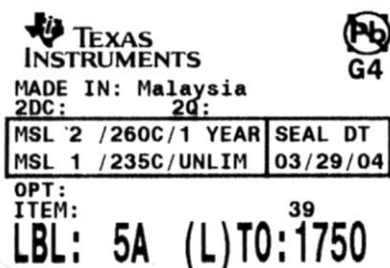
Anticipated impact on Material Declaration

<input type="checkbox"/>	No Impact to the Material Declaration	<input checked="" 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		
AMKOR P1	Assembly Site Origin (22L)	ASO: AKR
TI-CLARK	Assembly Site Origin (22L)	ASO: QAB
TI Malaysia	Assembly Site Origin (22L)	ASO: MLA

Sample product shipping label (not actual product label)



(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

ASSEMBLY SITE CODES: AKR = 4, QAB = I, [MLA = K](#)

Product Affected Group 1 Devices:

LM98555CCMH/NOPB	LM98555CCMHX/NOPB
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Product Affected Group 2 Devices:

BQ40Z551RSMR	BQ40Z551RSMT
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Group 1: Qualification Report

LM98555 AP1 Offload assembly to MLA (64 TSSOP)

Approved Date 15-Feb-2017

Product Attributes

Attributes	Qual Device: LM98555
Assembly Site	TI MALAYSIA
Package Family	HTSSOP
Flammability Rating	UL 94 V-0
Wafer Fab Supplier	MAINEFAB
Wafer Process	CMOS7

- QBS: Qual By Similarity

- Qual Device LM98555 is qualified at LEVEL3-260C

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: LM98555
AC	Autoclave 121C	96HRS	3/231/0
HTSL	High Temp Storage Bake 150C	1000HRS	3/231/0
THB	Biased Temperature and Humidity, 85C/85%RH	1000HRS	1/77/0
TC	Temperature Cycle, -65/150C	500CYC	3/231/0
VQR	Visual Quality Reliability	TMCL 500CYC	1/2/0
AC	Autoclave 121C	96HRS	3/231/0
MQ	Manufacturing Assembly	Per Specific site	3/pass
MSL	SAM	TMCL 500CYC	3/66/0
MSL	SAM	AFTER PRECOND	3/66/0
MSL	SAM	BEFORE PRECOND	3/66/0
VQR	Visual Quality Reliability	Post TMCL 500CYC	1/2/0
WBP	Bond Pull	wires	Pass
WBS	Bond Shear	Wires	Pass
PD	Package Dimension		1/30/0

- Preconditioning was performed for Autoclave, Unbiased HAST, THB/Biased HAST, Temperature Cycle, Thermal Shock, and HTSL, as applicable
 - The following are equivalent HTOL options based on an activation energy of 0.7eV : 125C/1k Hours, 140C/480 Hours, 150C/300 Hours, and 155C/240 Hours
 - The following are equivalent HTSL options based on an activation energy of 0.7eV : 150C/1k Hours, and 170C/420 Hours
 - The following are equivalent Temp Cycle options per JESD47 : -55C/125C/700 Cycles and -65C/150C/500 Cycles
- Quality and Environmental data is available at TI's external Web site: <http://www.ti.com/>

Green/Pb-free Status:

Qualified Pb-Free(SMT) and Green

Group 2: Qualification Report

BQ40Z551RSM Firmware Spin of BQ9000RSM in (RFAB Miho8/LBC7/TSMC FAB3, FAB10)

32-pin 4x4mm QFN in Clark and TIM

Approve Date 23-Feb-2016

Product Attributes

Attributes	Qual Device: BQ40Z551RSM	QBS Product Reference: BQ9000RSM	QBS Product Reference: BQ9000RSM	QBS Process Reference: MSP430F5510IRGC	QBS Process Reference: TPIC2020RTQ	QBS Process Reference: TPS62110RSA
Assembly Site	TIM (A) AND CLARK (T)	CLARK	TIM (MAL)	MLA (TIM)	TI-CLARK	CAR
Package Family	QFN	QFN	QFN	VQFN	VQFN	QFN
Flammability Rating	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0
Wafer Fab Supplier	MIHO8 OR RFAB, TSMC-FAB10 OR FAB3	RFAB, TSMC FAB 10	MIHO8, TSMC FAB 3	TSMC-10	RFAB	MIHO8
Wafer Process	0.18UM-28L-EFLASH, LBC7	0.18UM-28L-EFLASH, LBC7	0.18UM-28L-EFLASH, LBC7	TSMC EMB FLASH	LBC7	LBC7

- QBS: Qual By Similarity
- Qual Device BQ40Z551RSM is qualified at LEVEL2-260C
- Device BQ40Z551RSM contains multiple dies.

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: BQ40Z551RSM	QBS Product Reference: BQ9000RSM	QBS Product Reference: BQ9000RSM	QBS Process Reference: MSP430F5510IRGC	QBS Process Reference: TPIC2020RTQ	QBS Process Reference: TPS62110RSA
AC	Autoclave 121C	96 Hours	-	3/231/0	3/231/0	3/231/0	1/77/0	3/231/0
ED	Electrical Characterization	Per Datasheet Parameters	-	Pass	Pass	-	-	-
EDR	Non Volatile Memory Endurance 105C	20000 Cycles	-	-	-	3/42/0	-	-
EDR	Non Volatile Memory Endurance Room Temp	20000 Cycles	-	-	-	3/84/0	-	-
ELFR	Early Life Failure Rate, 140C	48 Hours	-	-	-	-	-	3/1881/0
ELFR	Early Life Failure Rate, 125C	24 Hours	-	-	-	3/2400/0	-	-
FW	Firmware Validation	EVM or Customer	Pass	-	-	-	-	-
HAST	Biased HAST, 130C/85%RH	96 Hours	-	3/231/0	3/78/0	3/231/0	1/77/0	3/231/0
HBM	ESD - HBM	1500 V	-	-	2/6/0	3/9/0	-	3/9/0
CDM	ESD - CDM	1000 V	-	2/6/0	2/6/0	-	-	-
HTOL	Life Test, 125C	1000 Hours	-	-	-	-	3/231/0	-
HTOL	Life Test, 140C	480 Hours	-	3/231/0	3/231/0	-	-	3/231/0
HTOL	Life Test, 150C Tj	300 Hours	-	-	-	3/231/0	-	-
HTSL	High Temp. Storage Bake, 150C	1000 Hours	-	-	-	-	1/77/0	-
HTSL	High Temp. Storage Bake, 170C	420 Hours	-	3/231/0	3/231/0	3/231/0	-	3/231/0
LU	Latch-up	(per JESD78)	-	3/36/0	3/38/0	3/18/0	3/38/0	3/15/0
SD	Solderability	8 Hours Steam Age	-	2/44/0	1/22/0	-	-	-
TC	Temperature Cycle, -65/150C	500 Cycles	-	3/231/0	3/231/0	3/231/0	3/231/0	3/231/0
TS	Thermal Shock, -65/150C	500 Cycles	-	-	-	-	-	3/231/0
WBP	Bond Strength	Wires	-	1/5/0	1/4/0	-	-	-

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Quality and Environmental data is available at TI's external Web site: <http://www.ti.com/>

Green/Pb-free Status:

Qualified Pb-Free(SMT) and Green

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

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USA	PCNAmericasContact@list.ti.com
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