




<b>PCN Number:</b>	20200327000.1		<b>PCN Date:</b>	Mar 30, 2020									
<b>Title:</b>	Qualification of TSMC-F10 and TSMC-F11 as additional Wafer Fab Site options for select devices												
<b>Customer Contact:</b>	<a href="#">PCN Manager</a>		<b>Dept:</b>	Quality Services									
<b>Proposed 1<sup>st</sup> Ship Date:</b>	Jun 30, 2020	<b>Estimated Sample Availability:</b>	Date provided at sample request.										
<b>Change Type:</b>													
<input type="checkbox"/> Assembly Site	<input type="checkbox"/> Assembly Process	<input type="checkbox"/> Assembly Materials											
<input type="checkbox"/> Design	<input type="checkbox"/> Electrical Specification	<input type="checkbox"/> Mechanical Specification											
<input type="checkbox"/> Test Site	<input 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 checked="" type="checkbox"/> Wafer Fab Site	<input type="checkbox"/> Wafer Fab Materials	<input type="checkbox"/> Wafer Fab Process											
	<input type="checkbox"/> Part number change												
<b>PCN Details</b>													
<b>Description of Change:</b>													
Texas Instruments is pleased to announce TSMC-F10 (Fab 10) and TSMC-F11 (Fab 11) fabrication facilities as additional Wafer Fab site options for the selected devices listed in "Product Affected" section.													
<table border="1"> <thead> <tr> <th>Current Wafer Fab Site</th> <th>Process</th> <th>Wafer Diameter</th> </tr> </thead> <tbody> <tr> <td>TSMC-WF3 (Fab 3)</td> <td>0.25UM-TSMC</td> <td>200mm</td> </tr> </tbody> </table>					Current Wafer Fab Site	Process	Wafer Diameter	TSMC-WF3 (Fab 3)	0.25UM-TSMC	200mm			
Current Wafer Fab Site	Process	Wafer Diameter											
TSMC-WF3 (Fab 3)	0.25UM-TSMC	200mm											
<table border="1"> <thead> <tr> <th>Additional Fab Site</th> <th>Process</th> <th>Wafer Diameter</th> </tr> </thead> <tbody> <tr> <td>TSMC-F10 (Fab 10)</td> <td>0.25UM-TSMC</td> <td>200mm</td> </tr> <tr> <td>TSMC-WFT (Fab 11)</td> <td>0.25UM-TSMC</td> <td>200mm</td> </tr> </tbody> </table>					Additional Fab Site	Process	Wafer Diameter	TSMC-F10 (Fab 10)	0.25UM-TSMC	200mm	TSMC-WFT (Fab 11)	0.25UM-TSMC	200mm
Additional Fab Site	Process	Wafer Diameter											
TSMC-F10 (Fab 10)	0.25UM-TSMC	200mm											
TSMC-WFT (Fab 11)	0.25UM-TSMC	200mm											
Qual details are provided in the Qual Data Section.													
<b>Reason for Change:</b>													
Continuity of Supply													
<b>Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):</b>													
None													
<b>Changes to product identification resulting from this PCN:</b>													
<b>Current</b>													
Chip Site	Chip Site Origin (20L)	Chip Site Country Code (21L)	Chip Site City										
TSMC-WF3 (Fab 3)	TS5	TWN	Hsinchu										
<b>New Fab Site</b>													
Chip Site	Chip Site Origin (20L)	Chip Site Country Code (21L)	Chip Site City										
TSMC-F10 (Fab 10)	TSS	CHN	Shanghai										
TSMC-WFT (Fab 11)	T13	USA	San Jose										
Sample product shipping label (not actual product label)													
   <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>MADE IN: Malaysia 2DC: 20:</p> <table border="1"> <tr> <td>MSL 2 / 260C / 1 YEAR</td> <td>SEAL DT</td> </tr> <tr> <td>MSL 1 / 235C / UNLIM</td> <td>03/29/04</td> </tr> </table> <p>OPT: ITEM: 39 <b>LBL: 5A (L)T0:1750</b></p> </div> <div style="width: 45%;"> <p>(1P) SN74LS07NSR (Q) 2000 (D) 0336 (31T) LOT: 3959047MLA (4W) TKY (1T) 7523483S12 (P) (2F) REV: (V) 0033517 (20L) CS0: SHE (21L) CCO: USA (22L) AS0: MLA (23L) ACO: MYS</p> </div> </div>					MSL 2 / 260C / 1 YEAR	SEAL DT	MSL 1 / 235C / UNLIM	03/29/04					
MSL 2 / 260C / 1 YEAR	SEAL DT												
MSL 1 / 235C / UNLIM	03/29/04												
<b>Product Affected:</b>													
BQ27546YZFR-G1	BQ27546YZFT-G1												

**Qualification Report**

Approve Date 06-Mar-2020

**Qualification Results**

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

Type	Test Name / Condition	Duration	Qual Device: BQ27546YZFR-G1	QBS Product Reference: BQ27546YZFR-G1	QBS Product Reference: SN27546YFR1-A1	QBS Product Reference: SN27546YPH-A2	QBS Product Reference: SN27546YPH-A2	QBS Product Reference: SN27546YPH-A2	QBS Process Reference: SN27521YFBI-T	QBS Process Reference: SN89340RIZ	QBS Process Reference: SN89340RIZ	QBS Package Reference: TPA2010D1YZE	QBS Package Reference: TPA4411YZH	QBS Package Reference: TSC2001YZG
AC	Autoclave 121C	96 Hours	-	-	-	-	-	-	-	1/77/0	2/154/0	-	-	-
ED	Electrical Characterization Per Datasheet Parameters	-	-	-	Pass	Pass	-	-	Pass	-	-	Pass	Pass	Pass
FW	Firmware Validation (Approved by PE/TE)	-	Pass	Pass	Pass	-	-	-	-	-	-	-	-	-
HAST	Biased HAST 130C/85%RH	96 Hours	-	-	-	1/77/0	1/77/0	1/77/0	-	-	-	3/231/0	1/76/0	-
HBM	ESD - HBM	2500 V	-	-	-	1/3/0	1/3/0	1/3/0	-	-	-	-	-	-
CDM	ESD - CDM	1000 V	-	-	-	1/3/0	1/3/0	1/3/0	-	-	-	-	-	-
HTOL	Life Test, 140C	480 Hours	-	-	1/77/0	-	1/77/0	-	-	-	-	-	-	-
HTOL	Life Test, 150C	300 Hours	-	-	-	-	-	-	1/77/0	-	-	3/231/0	1/77/0	-
HTOL	Life Test, 155C	240 Hours	-	-	-	-	-	-	-	1/77/0	1/77/0	-	-	-
HTSL	High Temp. Storage Bake, 170C	420 Hours	-	-	1/45/0	1/45/0	-	-	-	-	1/77/0	3/231/0	1/77/0	1/77/0
LU	Latchup (per JESD78)	-	-	-	1/6/0	1/6/0	1/6/0	1/6/0	1/6/0	1/6/0	-	-	-	-
PD	Physical Dimensions	-	-	-	-	1/12/0	1/12/0	1/12/0	-	-	-	3/15/0	1/5/0	1/5/0
PGM	Test Program Verification	Base Code and Firmware	Pass	Pass	-	-	-	-	-	-	-	-	-	-
SBS	Bump Shear	Wires	-	-	-	-	-	-	-	-	-	3/150/0	1/50/0	1/50/0
SBS	Solder Ball Shear	-	-	-	-	1/25/0	1/25/0	1/25/0	-	-	-	-	-	-
SD	Solderability	Pb-Free	-	-	-	1/22/0	1/22/0	1/22/0	-	-	-	-	-	-
TC	Temperature Cycle, -55/125C	700 Cycles	-	-	-	1/77/0	1/77/0	1/77/0	-	-	-	3/231/0	1/77/0	1/77/0
TC	Temperature Cycle, -55/150C	500 Cycles	-	-	-	-	-	-	1/77/0	2/154/0	-	-	-	-
TS	Thermal Shock, -65/150C	500 Cycles	-	-	-	-	-	-	1/77/0	2/154/0	-	-	-	-
UHAST	Unbiased HAST, 130C/85%RH	96 Hours	-	-	-	1/77/0	1/77/0	1/77/0	-	-	-	3/231/0	1/77/0	1/77/0

- QBS: Qual By Similarity  
 - Qual Device BQ27546YZFR-G1 is qualified at LEVEL 1-260C  
 - 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 Website: <http://www.ti.com>

**Green/Pb-free Status:**  
 Qualified Pb-Free (SMT) and Green

**Qualification Report**

Approve Date 19-Feb-2020

**Qualification Results**

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

Type	Test Name / Condition	Duration	Qual Device: BQ27546YZFR-G1	QBS Product Reference: BQ27546YZFR-G1	QBS Product Reference: SN27546YFR1-A1	QBS Product Reference: SN27546YPH-A2	QBS Product Reference: SN27546YPH-A2	QBS Product Reference: SN27546YPH-A2	QBS Process Reference: SN27521YFBI-T	QBS Process Reference: SN89340RIZ	QBS Process Reference: SN89340RIZ	QBS Package Reference: TPA2010D1YZE	QBS Package Reference: TPA4411YZH	QBS Package Reference: TSC2001YZG
-	Test Program Validation	(Approved by Test site)	Pass	-	-	-	-	-	-	-	-	-	-	-
ED	Electrical Characterization Per Datasheet Parameters	-	-	-	Pass	Pass	-	-	-	-	-	Pass	Pass	Pass
FW	Firmware Validation (Approved by TE mgr.)	-	Pass	Pass	Pass	-	-	-	-	-	-	-	-	-
HAST	Biased HAST 130C/85%RH	96 Hours	-	-	-	1/77/0	1/77/0	1/77/0	-	-	-	3/231/0	1/76/0	-
HBM	ESD - HBM	2500 V	-	-	-	1/3/0	1/3/0	1/3/0	-	-	-	-	-	-
CDM	ESD - CDM	1000 V	-	-	-	1/3/0	1/3/0	1/3/0	-	-	-	-	-	-
HTOL	Life Test, 140C	480 Hours	-	-	1/77/0	-	1/77/0	-	-	-	-	-	-	-
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PGM	Test Program Verification	Base Code and Firmware	-	Pass	-	-	-	-	-	-	-	-	-	-
SBS	Bump Shear	Wires	-	-	-	-	-	-	-	-	-	3/150/0	1/50/0	1/50/0
SBS	Solder Ball Shear	-	-	-	-	1/25/0	1/25/0	1/25/0	-	-	-	-	-	-
SD	Solderability	Pb-Free	-	-	-	1/22/0	1/22/0	1/22/0	-	-	-	-	-	-
TC	Temperature Cycle, -55/125C	700 Cycles	-	-	-	1/77/0	1/77/0	1/77/0	-	-	-	3/231/0	1/77/0	1/77/0
UHAST	Unbiased HAST, 130C/85%RH	96 Hours	-	-	-	1/77/0	1/77/0	1/77/0	-	-	-	3/231/0	1/77/0	1/77/0

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**Green/Pb-free Status:**  
 Qualified Pb-Free (SMT) and Green

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