



Title of Change:	Bump Site Change for TCC-20x, TCP-31xx, and TCP-40xx parts – ON-Semi Gunma to ON-Semi Niigata
Proposed first ship date:	9 December 2015
Contact information:	Contact your local ON Semiconductor Sales Office or <rene.teng@onsemi.com>
Samples:	Contact your local ON Semiconductor Sales Office
Additional Reliability Data:	Contact your local ON Semiconductor Sales Office or < rene.teng @onsemi.com>.
Type of notification:	This is a Final Product/Process Change Notification (FPCN) sent to customers.
Change Part Identification:	Location Code (SOP7-19A) will change in marking from ‘S’ (ON Semi Gunma) to ‘Z’ (ON Semi Niigata) for TCC products, traceability through date code is possible for TCP products
Change category:	<input type="checkbox"/> Wafer Fab Change <input type="checkbox"/> Assembly Change <input type="checkbox"/> Test Change <input checked="" type="checkbox"/> Other Bump Site Location

Change Sub-Category(s):		
<input checked="" type="checkbox"/> Manufacturing Site Change/Addition	<input type="checkbox"/> Material Change	<input type="checkbox"/> Datasheet/Product Doc change
<input type="checkbox"/> Manufacturing Process Change	<input type="checkbox"/> Product specific change	<input type="checkbox"/> Shipping/Packaging/Marking
		<input type="checkbox"/> Other: _____

Sites Affected:		
<input type="checkbox"/> All site(s) applicable	<input type="checkbox"/> not	<input checked="" type="checkbox"/> ON Semiconductor site(s) : Gunma move to Niigata
		<input type="checkbox"/> External Foundry/Subcon site(s)

Description and Purpose:
 As part of an ON-Semi manufacturing realignment, all equipment, process and personnel were relocated from Gunma to Niigata (both in Japan). The Equipment, Process and Personnel for the bump remain identical to the material qualified originally for TCC-202, TCC-206, TCP-31xx-DT, and TCP-40xx parts. As the address of the bumping location is changed this is considered a “major change” and so FPCN is issued.

Qualification has been run to show identical performance for material from both sites. The base wafer is unchanged for both cases and so no electrical property is changed.

Reliability Data Summary:

QV DEVICE NAME: Gunma to Niigata transfer – Test Vehicle TCC-2xy

PACKAGE: 20 bump WLCSP 4 x 5 array

Test	Specification	Condition	Interval	Results
PC	J-STD-020 JESD22-A113	MSL1 @ 3x260°C	n/a	PASS
SAT	J-STD-020	Post PC	n/a	0/45
uHAST	JESD22-A118	110°C, 85% RH, 18.8psig, unbiased	264 hrs	0/150
TC	JESD22-A104	Ta= -40°C to +125°C	500 cyc	0/150
HTSL	JESD22-A103	Ta=150°C	504 hrs	0/150
PD	JESD22-B100	Cpk ≥ 1.33	n/a	0/30
BST	AEC-Q100-010	Cpk ≥ 1.33	pre stress	0/50
CA		Custom Construction analysis	n/a	0/45
CDPA		Custom Destructive Physical Analysis	Post TC	0/9



PACKAGE: 8 and 12 bump WLCSP
 QVs: TCP-3147H-DT, TCP-4047UB-DT

Test	Specification	Condition	Test / Interval Point	# of Lots / # of Parts Per Lot	Result (Fails/Passes)	Judgement
TC	JESD22-A104D	- 55C to +125C	500 cycles	3 / 77	(0/231)	PASS
Drop	JESD22-B104	1500g / 05ms / 0.5 sine pulse	post stress condition	3 / 13	(0/39)	PASS
Vibration	JESD22-B103B	Condition 2, 10g peak, 10 - 10000 Hz	post stress condition	3 / 13	(0/39)	PASS
2nd Order Assembly	MIL-STD-883H	Visual Placement Force (L, M, H --> 180g to 230g)	post assembly	3 / 5	(0/15)	PASS
ELFR	JEDEC-A108D	125C /20V (assembled on boards)	1.5 hrs	3 / 240	(0/720)	PASS
HTOL	JEDEC-A108D	125C /20V (assembled on boards)	5 hrs	3 / 77	(0/231)	PASS
THB	JEDEC-A101C	Assembled on Boards PreCondition : 3x reflow @ 260C 85C/85%RH/11V	500hrs	3 / 77	(0/231)	PASS
HTS	JEDEC-A103D AEC-Q100-005	150C	1008 hrs	3 / 77	(0/231)	PASS
ESD - HBM	JESD22-A114E AEC-Q100-002	500V, class 1B	after all pulses	1 / 15	(0/15)	PASS
ESD - MM	JESD22-A115C AEC-Q100-003	400V, class M4	after all pulses	1 / 15	(0/15)	PASS
Solderability	JEDEC-B102E	-55C to +125C	500 cycles	3 / 5	(0/15)	PASS
PD	JESD22-B100	non stressed	Cpk \geq 1.33	3 / 10	(0/30)	PASS
Construction Physical Analysis		FIB, SEM, TEM of physical features, non-stressed	n/a	1 / 1	(0/1)	PASS
Destructive Physical Analysis		Mechanical x-section, shear strength & FM, post TC	post TC	3 / 5	(0/15)	PASS

To access file attachments on pdf copy of PCN, please be guided by the steps below:

1. Download pdf copy of the PCN to your computer
2. Open the downloaded pdf copy of the PCN
3. Click on the paper clip icon available on the menu provided in the left/bottom portion of the screen to reveal the Attachment field
4. Then click on the attached file/s

Electrical Characteristic Summary:

Electrical characteristics are not impacted.



List of affected Standard Parts:	
Part Number	QV(s) Used
TCC-202A-RT	TCC-206
TCC-206A-RT	TCC-206
TCP-3112H-DT	TCP-3147H-DT
TCP-3118H-DT	TCP-3147H-DT
TCP-3127H-DT	TCP-3147H-DT
TCP-3133H-DT	TCP-3147H-DT
TCP-3139H-DT	TCP-3147H-DT
TCP-3147H-DT	TCP-3147H-DT
TCP-3156H-DT	TCP-3147H-DT
TCP-3168H-DT	TCP-3147H-DT
TCP-3182H-DT	TCP-3147H-DT
TCP-4012UB-DT	TCP-4047UB-DT
TCP-4018UB-DT	TCP-4047UB-DT
TCP-4027UB-DT	TCP-4047UB-DT
TCP-4039UB-DT	TCP-4047UB-DT
TCP-4047UB-DT	TCP-4047UB-DT
TCP-4056UB-DT	TCP-4047UB-DT
TCP-4068UB-DT	TCP-4047UB-DT
TCP-4082UB-DT	TCP-4047UB-DT