



Title of Change:	Qualification of Lead Frame raw material change used in the ON Semiconductor from C50710 to C19400 of SSOP16, SSOP20, TSSOP20 (225mil) and SSOP24, SSOP30, TSSOP30, TSSOP36 (275mil).																																																														
Proposed first ship date:	21 October 2016																																																														
Contact information:	Contact your local ON Semiconductor Sales Office or <Takeshi2.Hoshino@onsemi.com>, <Yutaka.Okamura@onsemi.com>, <Takehito.Tsukui@onsemi.com>, <Shuichi.Takahashi@onsemi.com>, <Naoki.Koyama@onsemi.com>, <Shinya.Okada@onsemi.com>, <Ikuo.Saeki@onsemi.com>, <Hiroshi.Kojima@onsemi.com>, <Tetsuya.Fukushima@onsemi.com>																																																														
Samples:	Contact your local ON Semiconductor Sales Office																																																														
Additional Reliability Data:	Contact your local ON Semiconductor Sales Office																																																														
Type of notification:	This is a Final Product/Process Change Notification (FPCN) sent to customers. FPCNs are issued 90 days prior to implementation of the change. ON Semiconductor will consider this change accepted, unless an inquiry is made in writing within 30 days of delivery of this notice. To do so, contact <PCN.Support@onsemi.com>.																																																														
Change Part Identification:	Affected products will be identified with date code.																																																														
Change category:	☐ Wafer Fab Change ☒ Assembly Change ☐ Test Change ☐ Other _____																																																														
Change Sub-Category(s):	☐ Manufacturing Site Change/Addition ☒ Material Change ☐ Datasheet/Product Doc change ☐ Manufacturing Process Change ☐ Product specific change ☐ Shipping/Packaging/Marking ☐ Other: _____																																																														
Sites Affected:	☐ All site(s) ☐ not applicable ☒ ON Semiconductor site(s) : ON Tarlac City, Philippines ☐ External Foundry/Subcon site(s)																																																														
Description and Purpose:																																																															
This is a Final Process Change to announce the replacement of existing lead frame raw material from C50710 to C19400 (C50710/C19400: ASTM code). The reason is that the existing lead frame raw material will no longer be available. The table below shows comparison of mechanical and chemical properties between the two materials. <table border="1"> <thead> <tr> <th colspan="2">Material Name</th> <th>C19400(Alternative)</th> <th>C50710(Existing)</th> </tr> </thead> <tbody> <tr> <td colspan="4">Mechanical properties</td> </tr> <tr> <td>Coefficient of Thermal Expansion</td> <td>X10⁻⁶/K</td> <td>17.6</td> <td>17.0</td> </tr> <tr> <td>Thermal Conductivity</td> <td>W (m·K)</td> <td>262</td> <td>155</td> </tr> <tr> <td>Electrical Resistivity</td> <td>μΩm</td> <td>0.025</td> <td>0.054</td> </tr> <tr> <td>Electrical Conductivity</td> <td>%IACS</td> <td>65</td> <td>32</td> </tr> <tr> <td>Modulus Elasticity</td> <td>KN/mm²</td> <td>121</td> <td>125</td> </tr> <tr> <td colspan="4">Chemical properties</td> </tr> <tr> <td>Cu</td> <td>%</td> <td>Remain</td> <td>Remain</td> </tr> <tr> <td>Zn</td> <td>%</td> <td>0.05 ~ 0.20</td> <td>Max 0.20</td> </tr> <tr> <td>Pb</td> <td>%</td> <td>Max 0.03</td> <td>Max 0.02</td> </tr> <tr> <td>Fe</td> <td>%</td> <td>2.10 ~ 2.60</td> <td>Max 0.10</td> </tr> <tr> <td>P</td> <td>%</td> <td>0.01 ~ 0.15</td> <td>Max 0.15</td> </tr> <tr> <td>Sn</td> <td>%</td> <td>None</td> <td>1.70 ~ 2.30</td> </tr> <tr> <td>Ni</td> <td>%</td> <td>None</td> <td>0.10 ~ 0.40</td> </tr> </tbody> </table>				Material Name		C19400(Alternative)	C50710(Existing)	Mechanical properties				Coefficient of Thermal Expansion	X10 ⁻⁶ /K	17.6	17.0	Thermal Conductivity	W (m·K)	262	155	Electrical Resistivity	μΩm	0.025	0.054	Electrical Conductivity	%IACS	65	32	Modulus Elasticity	KN/mm ²	121	125	Chemical properties				Cu	%	Remain	Remain	Zn	%	0.05 ~ 0.20	Max 0.20	Pb	%	Max 0.03	Max 0.02	Fe	%	2.10 ~ 2.60	Max 0.10	P	%	0.01 ~ 0.15	Max 0.15	Sn	%	None	1.70 ~ 2.30	Ni	%	None	0.10 ~ 0.40
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Reliability Data Summary:

QV DEVICE NAME : LV8860V-TLM-H

PACKAGE : SSOP16

Test	Specification	Condition	Interval	Results
HTSL	JEITA ED-4701/200	Ta=150°C	1008 hrs	0/22
AC	JEITA ED-4701-3	Ta=121°C , 15psig	96 hrs	0/22
TC	JEITA ED-4701/100	Ta= -65°C to +150°C	100 cyc	0/22
SD	JEITA ED-4701/301	Ta = 245°C , 5 sec	-	PASS
PC	JEITA ED-4701/300	MSL 3 @ 260 °C	2 times-	PASS

QV DEVICE NAME : LV8011V-MPB-E

PACKAGE : SSOP20

Test	Specification	Condition	Interval	Results
HTSL	JEITA ED-4701/200	Ta=150°C	1008 hrs	0/22
AC	JEITA ED-4701-3	Ta=121°C , 15psig	96 hrs	0/22
TC	JEITA ED-4701/100	Ta= -65°C to +150°C	100 cyc	0/22
SD	JEITA ED-4701/301	Ta = 245°C , 5 sec	-	PASS
PC	JEITA ED-4701/300	MSL 3 @ 260 °C	2 times-	PASS

QV DEVICE NAME : LV23401V-N-TLM-H

PACKAGE : SSOP30

Test	Specification	Condition	Interval	Results
HTSL	JEITA ED-4701/200	Ta=150°C	1008 hrs	0/22
AC	JEITA ED-4701-3	Ta=121°C , 15psig	96 hrs	0/22
TC	JEITA ED-4701/100	Ta= -65°C to +150°C	100 cyc	0/22
SD	JEITA ED-4701/301	Ta = 245°C , 5 sec	-	PASS
PC	JEITA ED-4701/300	MSL 3 @ 260 °C	2 times-	PASS

QV DEVICE NAME : LB1939T-MPB-E

PACKAGE : TSSOP20

Test	Specification	Condition	Interval	Results
HTSL	JEITA ED-4701/200	Ta=150°C	1008 hrs	0/22
AC	JEITA ED-4701-3	Ta=121°C , 15psig	96 hrs	0/22
TC	JEITA ED-4701/100	Ta= -65°C to +150°C	100 cyc	0/22
SD	JEITA ED-4701/301	Ta = 245°C , 5 sec	-	PASS
PC	JEITA ED-4701/300	MSL 3 @ 260 °C	2 times-	PASS



QV DEVICE NAME : LB11948T-MPB-E

PACKAGE : TSSOP30

Test	Specification	Condition	Interval	Results
HTSL	JEITA ED-4701/200	Ta=150°C	1008 hrs	0/22
AC	JEITA ED-4701-3	Ta=121°C , 15psig	96 hrs	0/22
TC	JEITA ED-4701/100	Ta= -65°C to +150°C	100 cyc	0/22
SD	JEITA ED-4701/301	Ta = 245°C , 5 sec	-	PASS
PC	JEITA ED-4701/300	MSL 3 @ 260 °C	2 times-	PASS

Electrical Characteristic Summary:

Electrical characteristics are not impacted.

List of affected Standard Parts:

Part Number	Qualification Vehicle
LA4814JA-AE	LV8011V-MPB-E
LA4814JA-ZE	LV8011V-MPB-E
LA6584JA-AH	LV8011V-MPB-E
LA73076V-TLM-E	LV8860V-TLM-H
LA77000V-A-TLM-E	LV8860V-TLM-H
LA77000V-TLM-E	LV8860V-TLM-H
LB11660FV-TLM-E	LV8860V-TLM-H
LB11660FV-TLM-H	LV8860V-TLM-H
LB11660FV-W-AH	LV8860V-TLM-H
LB11660RV-TLM-E	LV8860V-TLM-H
LB11660RV-TLM-H	LV8860V-TLM-H
LB11660RV-W-AH	LV8860V-TLM-H
LB11696V-TRM-E	LV23401V-N-TLM-H
LB11861JA-AH	LV8011V-MPB-E
LB11867FV-TLM-H	LV8860V-TLM-H
LB11867RV-TLM-E	LV8860V-TLM-H
LB11921T-TLM-E	LB11948T-MPB-E
LB11948T-TLM-E	LB11948T-MPB-E
LB11961V-TLM-E	LV8860V-TLM-H
LB11961V-TLM-H	LV8860V-TLM-H
LB11967V-TLM-E	LV8011V-MPB-E
LB11967V-TLM-H	LV8011V-MPB-E



LB11967V-W-AH	LV8011V-MPB-E
LB1843V-TLM-E	LV8011V-MPB-E
LB1991V-TLM-E	LV23401V-N-TLM-H
LC72121V-D-MPB-E	LV23401V-N-TLM-H
LC72121V-D-TLM-E	LV23401V-N-TLM-H
LC72121V-TLM-E	LV23401V-N-TLM-H
LC72122V-TLM-E	LV8011V-MPB-E
LC72148V-TLM-E	LV23401V-N-TLM-H
LC72725KV-TLM-E	LV8860V-TLM-H
LC87F0N04AUJD-H	LV8860V-TLM-H
LC89091JA-AH	LV8860V-TLM-H
LC89091JA-H	LV8860V-TLM-H
LV2105V-TLM-E	LV8860V-TLM-H
LV23400V-A-TLM-E	LV23401V-N-TLM-H
LV4910T-MPB-E	LB11948T-MPB-E
LV4910T-TLM-E	LB11948T-MPB-E
LV5050NV-TLM-E	LV8011V-MPB-E
LV5052V-TLM-E	LV23401V-N-TLM-H
LV5066V-TLM-H	LV8860V-TLM-H
LV5068V-TLM-H	LV8860V-TLM-H
LV5234VZ-TLM-H	LV23401V-N-TLM-H
LV5609V-HAS-TLM-E	LV8011V-MPB-E
LV5609V-MPB-E	LV8011V-MPB-E
LV5609V-TLM-E	LV8011V-MPB-E
LV5725JA-AH	LV8860V-TLM-H
LV5725JAZ-AH	LV8860V-TLM-H
LV5768V-A-TLM-E	LV8860V-TLM-H
LV5769VZ-TLM-E	LV8860V-TLM-H
LV8019V-TLM-E	LV8860V-TLM-H
LV8127T-TLM-H	LB11948T-MPB-E
LV8136V-TLM-H	LV23401V-N-TLM-H
LV8139JA-AH	LV23401V-N-TLM-H
LV8291T-TLM-E	LB11948T-MPB-E
LV8400V-TLM-E	LV8860V-TLM-H
LV8401V-TLM-E	LV8860V-TLM-H
LV8402V-TLM-E	LV8860V-TLM-H
LV8405V-TLM-E	LV8860V-TLM-H



LV8850GA-AH	LB11948T-MPB-E
LV8862JA-AH	LV8860V-TLM-H

List of affected Customer Specific Parts:

Part Number	Qualification Vehicle
C9902-TLM-E	LV23401V-N-TLM-H
LA6584-TLM-H	LV8011V-MPB-E
LB11867FV-NMB-TLM-E	LV8860V-TLM-H
LB11967V-NMB-TLM3-E	LV8011V-MPB-E
LB1979VS-TLM-E	LV8011V-MPB-E
LC24006G-15C-H	LV23401V-N-TLM-H
LC709W01AGA-FH	LB1939T-MPB-E
LC72725KV-UKS-TLM-E	LV8860V-TLM-H
LC72725KV-UMTI-TLM-E	LV8860V-TLM-H
LC72725KV-UONK-TLM-E	LV8860V-TLM-H
LC98500JT-18H-AH	LV8860V-TLM-H