ON Semiconductor®

Initial Product/Process Change Notification

Document # : IPCN22650X
Issue Date: 20 March 2019

Title of Change:	PQFN 56CLP Metal Clip with Cu Gate Wire Conversion.
Proposed First Ship date:	27 September 2019
Contact Information:	Contact your local ON Semiconductor Sales Office or <edward.compra@onsemi.com>
Samples:	Contact your local ON Semiconductor Sales Office or <PCN.Samples@onsemi.com> Sample requests are to be submitted no later than 30 days from the date of first notification, Initial PCN or Final PCN, for this change.
Type of Notification:	This is an Initial Product/Process Change Notification (IPCN) sent to customers. An IPCN is an advance notification about an upcoming change and contains general information regarding the change details and devices affected. It also contains the preliminary reliability qualification plan. The completed qualification and characterization data will be included in the Final Product/Process Change Notification (FPCN). This IPCN notification will be followed by a Final Product/Process Change Notification (FPCN) at least 90 days prior to implementation of the change. In case of questions, 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):

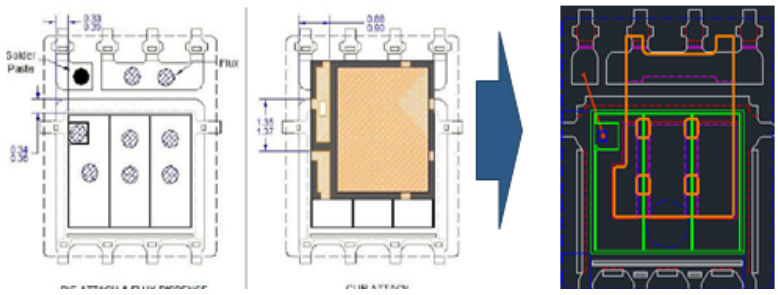
☐ Manufacturing Site Addition
☐ Manufacturing Site Transfer
☑ Manufacturing Process Change
☑ Material Change
☐ Product specific change
☐ Datasheet/Product Doc change
☐ Shipping/Packaging/Marking
☐ Other: _____

Sites Affected:	ON Semiconductor Sites: ON Cebu, Philippines	External Foundry/Subcon Sites: None

Description and Purpose:

PQFN 56CLP conversion from Pre-Molded Clip to Metal Clip with Cu Gate wire to improve gate leadpost interconnection.

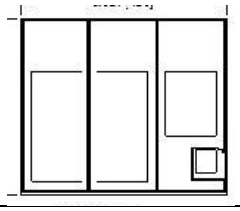
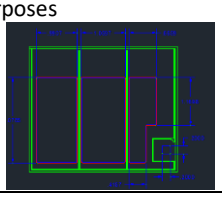
Current: *Proposed*



ITEM	CURRENT	PROPOSED
Clip Design	Pre-molded	Metal
Gate connection	Pre-Molded / No Wire	Wire: Cu 2.0mil (SN:500807)
Gate leadpost (LF)	Bare Cu (SN:500811)	Ag plated (SN:501354)

The conversion will entail the following changes in assembly processes:

1. Elimination of pre-assembly steps for pre-molded clip flow
2. Addition of assembly processes (Flux Clean, Wirebond)

	Before Change Description	After Change Description
LeadFrame	Bare Cu gate finish, Etched type	Ag plated gate finish, Stamped type
Die Attach	DA SLDR PASTE IND 92.5Pb5Sn2.5Ag NC-SMQ75	Same
Bond Wire	No Wire	BW, Cu,2.0 MIL
Mold Compound	CEL9240HF10LS (filler size = 45um)	CEL9240HF10LS (filler size = 75um)
Assembly Site	OSPI-Cebu	Same
Die Solderable Top Metal(STM)	Both Gate and Source pads have TiNiAg STM 	Only source pad has TiNiAg STM. Gate pad has no TiNiAg STM for Cu wire bonding purposes 

There is no product marking change as a result of this change.

Qualification Plan:

QV DEVICE NAME: FDMS86181
RMS: to follow
PACKAGE: PQFN8 CLIP SNGL HPBF

Test	Specification	Condition	Interval
HTRB	JESD22-A108	Ta=150°C, 80% max rated V	1008 hrs
HTGB	JESD22-A108	Ta=150°C, 100% max rated Vgss	1008 hrs
HTSL	JESD22-A103	Ta= 150°C	1008 hrs
PC	J-STD-020 JESD-A113	MSL 1 @ 260 °C	
IOL + PC	MIL-STD-750 (M1037) AEC-Q101	Ta=+25°C, delta Tj=100°C On/off = 2 min	15000 cyc
TC + PC	JESD22-A104	Ta= -55°C to +150°C	1000 cyc
HAST + PC	JESD22-A110	130°C, 85% RH, 18.8psig, bias	192 hrs
uHAST + PC	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hrs
RSH	JESD22- B106	Ta = 265C	10 Secs

QV DEVICE NAME: FDMS7556S
RMS: to follow
PACKAGE: PQFN8 CLIP SNGL HPBF

Test	Specification	Condition	Interval
HTRB	JESD22-A108	Ta=125°C, 80% max rated V	1008 hrs
HTGB	JESD22-A108	Ta=150°C, 100% max rated Vgss	1008 hrs
HTSL	JESD22-A103	Ta= 150°C	1008 hrs
PC	J-STD-020 JESD-A113	MSL 1 @ 260 °C	
IOL + PC	MIL-STD-750 (M1037) AEC-Q101	Ta=+25°C, delta Tj=100°C On/off = 2 min	15000 cyc
TC + PC	JESD22-A104	Ta= -55°C to +150°C	1000 cyc
HAST + PC	JESD22-A110	130°C, 85% RH, 18.8psig, bias	192 hrs
uHAST + PC	JESD22-A118	130°C, 85% RH, 18.8psig, unbiased	96 hrs
RSH	JESD22- B106	Ta = 265C	10 Secs

Estimated date for qualification completion: 12 April 2019

List of Affected Parts:

Note: Only the standard (off the shelf) part numbers are listed in the parts list. Any custom parts affected by this PCN are shown in the customer specific PCN addendum in the PCN email notification, or on the **PCN Customized Portal.**

Part Number	Qualification Vehicle
FDMS8560S	FDMS7556S
FDMS8558S	
FDMS7572S	
FDMS7570S	
FDMS7560S	
FDMS7558S	
FDMS7556S	
FDMS10C4D2N	FDMS86181
FDMS86181	
FDMS8320L	
FDMS7560S	