



Product Change Notification / ALAN-25IRJK305

Date:

25-May-2023

Product Category:

Access Networks

PCN Type:

Manufacturing Change

Notification Subject:

CCB 5107, 5106, 5106.001 Initial Notice: Qualification of MCSO as a new fabrication location for catalog part numbers LE79272PQC, LE79272PQCT, LE79271AMQC, LE79271MQC, LE79271AMQCT and LE79271MQCT available in 48L VQFN (7x7x1mm) and 28L VQFN (4x5x1mm) packages.

Affected CPNs:

[ALAN-25IRJK305_Affected_CPN_05252023.pdf](#)

[ALAN-25IRJK305_Affected_CPN_05252023.csv](#)

Notification Text:

PCN Status:Initial Notification

PCN Type:Manufacturing Change

Microchip Parts Affected:Please open one of the files found in the Affected CPNs section.

Note: For your convenience Microchip includes identical files in two formats (.pdf and .xls)

Description of Change:Qualification of MCSO as new fabrication location for catalog part numbers LE79272PQC, LE79272PQCT, LE79271AMQC, LE79271MQC, LE79271AMQCT and LE79271MQCT available in 48L VQFN (7x7x1mm) and 28L VQFN (4x5x1mm) packages.

Pre and Post Change Summary:

	Pre Change		Post Change		
Fabrication Site	Global Foundries, Singapore (Fab 2) (GF02)		Microchip Technology Colorado – Fab 5 (MCSO)		
Wafer Size	8 inches		6 inches		
MSL	5491		3654		
Certification	IATF16949	ISO-14001	ISO-9001	IATF16949	ISO-14001

Impacts to Data Sheet:None

Change Impact:None

Reason for Change:To improve manufacturability and on-time delivery performance by qualifying MCSO as new fabrication site.

Change Implementation Status:In Progress

Estimated Qualification Completion Date:July 2023

Note: Please be advised the qualification completion times may be extended because of unforeseen business conditions however implementation will not occur until after qualification has completed and a final PCN has been issued. The final PCN will include the qualification report and estimated first ship date. Also note that after the estimated first ship date guided in the final PCN customers may receive pre and post change parts.

Time Table Summary:

	May 2023					>	July 2023				
Workweek	1 8	1 9	2 0	2 1	2 2		27	28	29	30	31
Initial PCN Issue Date				X							
Qual Report Availability							X				
Final PCN Issue Date							X				

Method to Identify Change:Traceability code

Qualification Plan:Please open the attachments included with this PCN labeled as PCN_#_Qual_Plan.

Revision History:May 25, 2023: Issued initial notification.

The change described in this PCN does not alter Microchip's current regulatory compliance regarding the material content of the applicable products.

Attachments:

[PCN_ALAN-25IRJK305_Qual_Plan.pdf](#)

Please contact your local [Microchip sales office](#) with questions or concerns regarding this notification.

Terms and Conditions:

If you wish to receive Microchip PCNs via email please register for our PCN email service at our [PCN home page](#) select register then fill in the required fields. You will find instructions about registering for Microchips PCN email service in the [PCN FAQ](#) section.

If you wish to change your PCN profile, including opt out, please go to the [PCN home page](#) select login and sign into your myMicrochip account. Select a profile option from the left navigation bar and make the applicable selections.

ALAN-25IRJK305 - CCB 5107, 5106, 5106.001 Initial Notice: Qualification of MCSO as a new fabrication location for catalog part numbers LE79272PQC, LE79272PQCT, LE79271AMQC, LE79271MQC, LE79271AMQCT and LE79271MQCT available in 48L VQFN (7x7x1mm) and 28L VQFN (4x5x1mm) packages.

Affected Catalog Part Numbers (CPN)

LE79272PQC

LE79272PQCT

LE79271AMQC

LE79271MQC

LE79271AMQCT

LE79271MQCT



MICROCHIP

QUALIFICATION PLAN SUMMARY
RELIABILITY LABORATORY

PCN# ALAN-25IRJK305

Date:
March 7, 2023

Qualification of MCSO as a new fabrication location for catalog part numbers LE79272PQC, LE79272PQCT, LE79271AMQC, LE79271MQC, LE79271AMQCT and LE79271MQCT available in 48L VQFN (7x7x1mm) and 28L VQFN (4x5x1mm) packages.

Purpose: Qualification of MCSO as a new fabrication location for catalog part numbers LE79272PQC, LE79272PQCT, LE79271AMQC, LE79271MQC, LE79271AMQCT and LE79271MQCT available in 48L VQFN (7x7x1mm) and 28L VQFN (4x5x1mm) packages.

CCB: 5107

Process Qual Test	Lot Qty	# units/lot
HTOL/DLT (Life Test) 1k hours	3	77 + 20 GF control
ESD/HBM	1	12
ESD/CDM	1	18
Characterization	3	30
GF to Fab 5 comparison distribution	1	30 + 30 GF control
Electromigration (information only)	3	3 wafers



MICROCHIP PACKAGE QUALIFICATION REPORT

CN	E000119070
QUAL ID	R2200898
MP CODE	1E0027LZCA02
Part No.	LE79271MQC
Bonding No.	BD-000624 Rev.01
CCB	5106 and 5107
<u>Package</u>	
Type	28LD VQFN
Package size	4 x 5 x 1 mm
<u>Lead Frame</u>	
Paddle size	102 x 142 mils
Material	A194
Surface	Yes
Process	Etched
Lead Lock	Yes
Part Number	412506
<u>Material</u>	
Epoxy	8290
Wire	CuPd wire
Mold Compound	G700HP
Plating Composition	Matte Sn



MICROCHIP PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
UNIC231500001.000	MCSO522425111.300	22287V2
UNIC231500002.000	MCSO522425111.300	22287VR
UNIC231600001.000	MCSO522425111.300	22297W2

Result

Pass Fail _____

28LD VQFN (4x5x1 mm) assembled by UNIC pass reliability test per QCI-39000.
This package was qualified the Moisture/Reflow Sensitivity Classification Level 3 at 260°C
reflow temperature per IPC/JEDEC J-STD-020E standard.

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS	Result	Remarks
Precondition Prior Perform Reliability Tests (At MSL Level 3)	Electrical Test: +87°C System: ETS300_LCLD	JESD22-A113	693(0)	0/693		Good Devices
	Bake 150°C, 24 hrs. System: CHINEE	JIP/IPC/JEDEC		0/693		
	30°C/60%RH Moisture Soak 192 hrs. System: TABAI ESPEC Model PR-3SPH	J-STD-020E		0/693		
	3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243			0/693		
	Electrical Test: +87°C System: ETS300_LCLD		693(0)	0/693	Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
Temp Cycle	Stress Condition: -65°C to +150°C, 500 Cycles System: TABAI ESPEC TSA-70H	JESD22-A104		0/231		Parts had been pre-conditioned at 260°C
	Electrical Test: +87°C System: ETS300_LCLD		231(0)	0/231	Pass	77 units / lot
	Bond Strength: Wire Pull (>3.00 grams) Bond Shear (>14.00 grams)		15(0) 15(0)	0/15 0/15	Pass Pass	
UNBIASED-HAST	Stress Condition: +130°C/85%RH, 96 hrs. System: HAST 6000X	JESD22-A118		0/231		Parts had been pre-conditioned at 260°C
	Electrical Test: +87°C System: ETS300_LCLD		231(0)	0/231	Pass	77 units / lot
HAST	Stress Condition: +130°C/85%RH, 96 hrs. Bias Volt: VCC = 3.3 Volt, VREF = 1.5 Volt, VBH/L = -20 Volt, VBP = 20 Volt System: HAST 6000X	JESD22-A110		0/231		Parts had been pre-conditioned at 260°C
	Electrical Test: +87°C System: ETS300_LCLD		231(0)	0/231	Pass	77 units / lot

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
High Temperature Storage Life	Stress Condition: Bake 150°C, 504 hrs. System: SHEL LAB	JESD22- A103		0/135		45 units / lot
	Electrical Test: +87°C System: ETS300_LCLD		135(0)	0/135	Pass	
	Stress Condition: Bake 150°C, 1008 hrs. System: SHEL LAB			0/135		
	Electrical Test: +87°C System: ETS300_LCLD		135(0)	0/135	Pass	
Bond Strength Data Assembly	Wire Pull (>3.00 grams)	Mil. Std. 883-2011	30(0) Wires	0/30	Pass	
	Bond Shear (>14.00 grams)	CDF-AEC- Q100-001	30(0) bonds	0/30	Pass	



MICROCHIP PACKAGE QUALIFICATION REPORT

CN	E000137807
QUAL ID	R2201330
MP CODE	1E0027LZCA02
Part No.	LE79271MQC
Bonding No.	BD-000423 Rev.01
CCB	5107 and 5196.001
<u>Package</u>	
Type	28L VQFN
Package size	4 x 5 x 1.0 mm
<u>Lead Frame</u>	
Paddle size	114 x 154 mils
Material	A194
Surface	Selective Ag Plating
Process	Etched
Lead Lock	Yes
Part Number	10102842
Treatment	BOT
<u>Material</u>	
Epoxy	AB3280
Wire	CuPdAu wire
Mold Compound	G700LTD
Plating Composition	Matte Sn



MICROCHIP PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
MMT-232801343.000	MCSO522373444.400	2241J9T
MMT-232902039.000	MCSO522373444.400	224234R
MMT-232801896.000	MCSO522373444.400	2241VYR

Result

Pass Fail _____

28L VQFN (4x4x1.0 mm) assembled by MMT pass reliability test per QCI-39000. This package was qualified the Moisture/Reflow Sensitivity Classification Level 3 at 260°C reflow temperature per IPC/JEDEC J-STD-020E standard.

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS	Result	Remarks
<u>Precondition</u> <u>Prior Perform</u> <u>Reliability Tests</u> (At MSL Level 3)	Electrical Test: +87°C System: ETS300_LCLD	JESD22-A113	693(0)	0/693		Good Devices
	Bake 150°C, 24 hrs. System: CHINEE	JIP/ IPC/JEDEC		0/693		
	30°C/60%RH Moisture Soak 192 hrs. System: TABAI ESPEC Model PR-3SPH	J-STD-020E		0/693		
	3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243			0/693		
	Electrical Test: +87°C System: ETS300_LCLD		693(0)	0/693	Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
HAST	Stress Condition: +130°C/85%RH, 96 hrs. Bias Volt: VCC= 3.3 V, VREF= 1.5 V, VBH/L= -20V, VBP= 20 Volt System: HAST 6000X Electrical Test: +87°C System: ETS300_ICLD	JESD22- A110	231(0)	0/231 0/231	Pass	Parts had been pre-conditioned at 260°C 77 units / lot
Bond Strength Data Assembly	Wire Pull (>2.50 grams) Bond Shear (>12.60 grams)	Mil. Std. 883-2011	30(0) Wires	0/30	Pass	