

Product Change Notification / JAON-230Q0C341

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31-May-2023

Product Category:

Memory

PCN Type:

Manufacturing Change

Notification Subject:

CCB 6126 Final Notice: Qualification of United Microelectronics Corporation - Fab 8D (U08D) as new fabrication site for selected 24LC515, 24AA515, and 24FC515 device families available in 8L SOIJ (.208in) and 8L PDIP (.300in) packages.

Affected CPNs:

JAON-230QOC341_Affected_CPN_05312023.pdf JAON-230QOC341_Affected_CPN_05312023.csv

Notification Text:

PCN Status:Final 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 United Microelectronics Corporation - Fab 8D (U08D) as new fabrication site for selected 24LC515, 24AA515, and 24FC515 device families available in 8L SOIJ (.208in) and 8L PDIP (.300in) packages.

Pre and Post Change Summary:

Pre Change	Post Change
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Fabrication Site	Die # 1: Microchip Technology Tempe – Fab 2 (TMGR)	United Microelectronics Corporation - Fab 8D
	Die # 2: Microchip Technology Tempe	(U08D)
	– Fab 2 (TMGR) or Microchip	
	Technology Gresham – Fab 4 (GRTM)	
Wafer Technology	Die # 1: 121k Technology	66.88k Technology
	Die # 2: 150k Technology	
Wafer Diameter	Die # 1: 8 inches	8 inches
	Die # 2: 8 inches	
Quality Certification	ISO-9001	ISO-9001
	IATF16949	IATF16949
	ISO-14001 CERTIFIED	ISO-14001 CERTIFIED

Note: This change is from dual die to single die solution while keeping the same Catalog Part Number (CPN).

Impacts to Data Sheet:None

Change ImpactNone

Reason for Change:To improve manufacturability by qualifying United Microelectronics Corporation - Fab 8D (U08D) as a new wafer fabrication site.

Change Implementation Status:In Progress

Estimated First Ship Date: July 2, 2023 (date code: 2327)

Note: Please be advised that after the estimated first ship date customers may receive pre and post change parts.

Time Table Summary:

		Janu	ary 2	2023		>		Ма	ay 20)23		>		Ju	ly 20	23	
Workweek	0	0	0	0	0		1	1	2	2	2		2	2	2	3	3
VVOIKWEEK	1	2	3	4	5		8	9	0	1	2		7	8	9	0	1
Initial PCN Issue				v													
Date				X													
Qual Report											V						
Availability											Х						
Final PCN Issue																	
Date											Х						

Estimated									
Implementation							Х		
Date									

Method to Identify Change: Traceability code

Qualification Report:Please open the attachments included with this PCN labeled as PCN_#_Qual_Report.

Revision History: January 26, 2023: Issued initial notification.

May 31, 2023: Issued final notification. Attached the Qualification Report. Provided estimated first ship date to be on July 2, 2023.

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

Attachments:

PCN_JAON-230QOC341_Qual Report 1 of 2.pdf PCN JAON-230QOC341 Qual Report 2 of 2.pdf

Please contact your local Microchip sales office with questions or concerns regarding this notification.

Terms and Conditions:

If you wish to <u>receive Microchip PCNs via email</u> please register for our PCN email service at our <u>PCN</u> home page select register then fill in the required fields. You will find instructions about registering for Microchips PCN email service in the <u>PCN FAQ</u> section.

If you wish to <u>change your PCN profile</u>, <u>including opt out</u>, please go to the <u>PCN home page</u> select login and sign into your myMicrochip account. Select a profile option from the left navigation bar and make the applicable selections.

JAON-23OQOC341 - CCB 6126 Final Notice: Qualification of United Microelectronics Corporation - Fab 8D (U08D) as new fabrication site for selected 24LC515, 24AA515, and 24FC515 device families available in 8L SOIJ (.208in) and 8L PDIP (.300in) packages.

Affected Catalog Part Numbers (CPN)

24LC515-I/SM

24AA515-I/SM

24LC515-I/P

24AA515-I/P

24LC515T-I/SM

24AA515T-I/SM

24FC515-I/SM

24FC515-I/P

24FC515T-I/SM

Date: Tuesday, May 30, 2023



QUALIFICATION REPORT SUMMARY

PCN #: JAON-230Q0C341

Date: June 24, 2021

Qualification of United Microelectronics Corporation - Fab 8D (U08D) as new fabrication site for selected 24LC515, 24AA515, and 24FC515 device families available in 8L SOIJ (.208in) and 8L PDIP (.300in) packages.

Purpose: Qualification of United Microelectronics Corporation - Fab 8D (U08D) as new fabrication site for selected 24LC515, 24AA515, and 24FC515 device families available in 8L SOIJ (.208in) and 8L PDIP (300in) packages

(.300in) packages. **CCB No.:** 6126

Device Description:

Device	AT24C512C, 24CS512, 24FC512, 24LC512, 24AA512
Product	512kBit I2C SEEPROM Memory

Qualification Material:

Test Lot	Lot 1	Lot 2	Lot 3	Lot 4
CPN	24CS512	24CS512	24CS512	24CS512
WAFER FAB	UMC - 8D	UMC - 8D	UMC - 8D	UMC - 8D
ASSEMBLY LOT	MTAI204401928	MTAI210902449	MTAI211103063	MTAI211103064
PACKAGE	8L SOIC	8L SOIC	8L SOIC	8L SOIC
ASSEMBLY SITE	MTAI	MTAI	MTAI	MTAI
FINAL TEST	MTAI	MTAI	MTAI	MTAI
QUAL TESTS -SJ	END, ESD/LU	END/DLT,	END/DLT,	END/DLT,
		END/DR	END/DR	END/DR
ASSEMBLY LOT	Note 1	MMT-210900044	MMT-211300072	MMT-211300073
PACKAGE	Note 1	8L PDIP	8L PDIP	8L PDIP
ASSEMBLY SITE	Note 1	MMT	MMT	MMT
FINAL TEST	Note 1	MMT	MMT	MMT
QUAL TESTS – MTHAI	Note 1	ELFR / DLT	ELFR / DLT	ELFR / DLT

Note 1: Lot 1 used for ESD/LU testing only, as only 3 lots are required for ELFR/DLT per QCI-39000.

Qualification Data:

Endurance / Dynamic Life Test (Stress conducted at MCHP San Jose)

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Stress Method	MIL-STD 883 Method 1033						
Stress Condition	Ta = 85°C / Vo	Ta = 85°C / V _{CC} = 5V / 100,000 cycles (Write					
		0x00h)					
Min Sample Size		77 pieces/lot					
Test Temperatures	25C, -40C, 85C, 125C						
Lot #; Fail / Pass	Lot 2; 0 Fails / 92 Lot 3; 0 Fails / 92 Lot 4; 0 Fails /						
Stress Method	MIL-STD 883 Method 1005						
Stress Condition	Ta = 150°C / VCC= 5.5V / 408 hours						
Min Sample Size		77 pieces/lot					
Test Temperatures	250	C, -40C, 85C, 125C					
Readpoint 1	408 hours						
Lot #; Fail / Pass	Lot 2; 0 Fails / 92 Lot 3; 0 Fails / 92 Lot 4; 0 Fails / 92						
Readpoint 2	+600 hours (1008 Total)						
Lot # Fail / Pass	Lot 2; 0 Fails / 92 Lot 3; 0 Fails / 92 Lot 4; 0 Fails / 92						

Endurance / Data Retention (Stress conducted at MCHP San Jose)

Stress Method	MIL-STD 883 Method 1033						
Stress Condition	Ta = 85°C / V	Ta = 85°C / Vcc = 5V / 100,000 cycles (Write					
		0x00h)					
Min Sample Size		231 pieces/lot					
Test Temperatures	25C, -40C, 85C, 125C						
Lot #; Fail / Pass	Lot 2; 0 Fails / 246 Lot 3; 0 Fails / 246 Lot 4; 0 Fails /						
Stress Method		JESD22A-103					
Stress Condition	Ta	= 175°C 504 hours					
Min Sample Size		231 pieces/lot					
Test Temperatures	25C, -40C, 85C, 125C						
Readpoint 1	504 hours						
Lot #; Fail / Pass	Lot 2; 0 Fails / 246 Lot 3; 0 Fails / 246 Lot 4; 0 Fails / 246						

Endurance Testing (Stress conducted at MCHP San Jose)

Test Method	MIL-STD 883 Method 1033
Test Condition	Ta = +25°C / VCC= 5V / 1,000,000 cycles Write
	0x00h
Min Sample Size	Not Required
Readpoint 1 – 9	Every 100,000 Cycles
Lot#; Fail / Pass,	Lot 2; 0 / 92, QC
Test Criteria	Test +25C
Readpoint 10	1,000,000 Cycles
Lot #; Fail / Pass,	Lot 2; 0 / 92, QC Test +25C, -40C, +85C, +125C
Test Criteria	0 / 10. Margin Test at +25C

Early Life Reliability (ELFR) + Dynamic Life Test (Stress conducted at MTAI)

Early Life Reliability (ELFR) + Dynamic Life Test (Stress conducted at MTAI)						
Stress Method	MIL-STD 883 Method 1005					
Stress Condition	Ta = 150°C / VCC= 5.5V / 408					
		hours				
Min Sample Size	ELFR 80	00 Pieces/Lot, 0 Fails				
Readpoint 1	24 hours					
Test Temperatures	25C, -40C, 85C, 125C					
Lot# Fail / Pass	Lot 2; 0 / 815	Lot 3; 0 Fails / 815	Lot 4; 0 Fails / 814			
Min Sample Size	DLT 600	0 Pieces/Lot, 0 Fails				
Readpoint 2	+3	312 hours (408				
Test Temperatures	Total) 25C, -40C,					
	85C, 125C					
Lot# Fail / Pass	Lot 2; 0 / 615 Lot 3; 0 Fails / 615 Lot 4; 0 Fails / 6					

Note: Lot 4 sample excludes one device failed for handling induced damage not related to product stress.

ESD & Latchup Characterization (Stress conducted at MCHP San Jose)

Test	Sample Size	Reference Method	Result
ESD – HBM	12	JEDEC JS-001-2017	Pass ±5000 V
CDM	18	JEDEC JS-002	Pass ±1500 V
Latch Up @ 25°C	6	JESD78	200mAmp Pass
Latch Up @ 125°C	6	JESD78	200mAmp Pass





QUALIFICATION REPORT SUMMARY

PCN #: JAON-230Q0C341

Date: January 24, 2023

Qualification of United Microelectronics Corporation - Fab 8D (U08D) as new fabrication site for selected 24LC515, 24AA515, and 24FC515 device families available in 8L SOIJ (.208in) and 8L PDIP (.300in) packages.

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CCB No.: 6126

ESD-CDM & Latchup Characterization for SOIJ package

Test	Sample Size	Reference Method	Results
CDM	18	JEDEC JS-002	Passed
Latch Up @ 25°C	6	JESD78	Passed
Latch Up @ 125°C	6	JESD78	Passed