



Product Change Notification - KSRA-16BWET454

Date:

15 Aug 2019

Product Category:

Others; 16-Bit - Microcontrollers and Digital Signal Controllers; 32-bit Microcontrollers; Capacitive Touch Sensors

Affected CPNs:**Notification subject:**

CCB 3027 Final Notice: Qualification of palladium coated copper with gold flash (CuPdAu) bond wire for selected products of the 0.18um TSMC wafer technology available in 44L QFN (8x8x0.9mm) package at NSEB assembly site.

Notification text:**PCN Status:**

Final notification

PCN Type:

Manufacturing Change

Microchip Parts Affected:

Please open one of the icons found in the Affected CPNs section above.

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

Description of Change:

Qualification of palladium coated copper with gold flash (CuPdAu) bond wire in selected products of the 0.18um TSMC wafer technology available in 44L QFN (8x8x0.9mm) package at NSEB assembly site.

Pre Change:

Using gold (Au) bond wire

Post Change:

Using palladium coated copper with gold flash (CuPdAu) bond wire

Pre and Post Change Summary:

	Pre Change	Post Change
Assembly Site	UTAC Thai Limited LTD. (NSEB)	UTAC Thai Limited LTD. (NSEB)
Wire material	Au	CuPdAu
Die attach material	8600	8600
Molding compound material	G700LTD	G700LTD
Lead frame material	C194	C194

Impacts to Data Sheet:

None

Change Impact:

None

Reason for Change:

To improve manufacturability by qualifying CuPdAu bond wire at NSEB assembly site.

Change Implementation Status:



In Progress

Estimated First Ship Date:

September 15, 2019 (date code: 1938)

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

Time Table Summary:

Workweek	July 2017						->	August 2019					September 2019				
	26	27	28	29	30	31		31	32	33	34	35	36	37	38	39	40
Initial PCN Issue Date				X													
Qual Report Availability									X								
Final PCN Issue Date									X								
Estimated Implementation Date													X				

Method to Identify Change:

Traceability code

Qualification Report:

Please open the attachments included with this PCN labeled as PCN_#_Qual Report

Revision History:

July 18, 2017: Issued initial notification.

August 15, 2019: Issued final notification. Attached the qualification report. Updated the affected CPN list based on the scope. Provide estimated first ship date to be on September 15, 2019.

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

Attachment(s):

[PCN_KSRA-16BWET454_Qual_Report.pdf](#)

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

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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.

Affected Catalog Part Numbers (CPN)

DSPIC33EP128GM304-E/ML
DSPIC33EP128GM304-I/ML
DSPIC33EP128GM604-E/ML
DSPIC33EP128GM604-I/ML
DSPIC33EP128GP504-E/ML
DSPIC33EP128GP504-H/ML
DSPIC33EP128GP504-I/ML
DSPIC33EP128GP504-I/MLA3
DSPIC33EP128GP504T-E/ML
DSPIC33EP128GP504T-I/ML
DSPIC33EP128MC204-E/ML
DSPIC33EP128MC204-H/ML
DSPIC33EP128MC204-I/ML
DSPIC33EP128MC204-I/MLA3
DSPIC33EP128MC204T-E/ML
DSPIC33EP128MC204T-I/ML
DSPIC33EP128MC504-E/ML
DSPIC33EP128MC504-H/ML
DSPIC33EP128MC504-I/ML
DSPIC33EP128MC504-I/MLA3
DSPIC33EP128MC504T-E/ML
DSPIC33EP128MC504T-H/ML
DSPIC33EP128MC504T-I/ML
DSPIC33EP16GS504-E/ML
DSPIC33EP16GS504-I/ML
DSPIC33EP16GS504T-E/ML
DSPIC33EP16GS504T-I/ML
DSPIC33EP256GM304-E/ML
DSPIC33EP256GM304-I/ML
DSPIC33EP256GM604-E/ML
DSPIC33EP256GM604-I/ML
DSPIC33EP256GP504-E/ML
DSPIC33EP256GP504-H/ML
DSPIC33EP256GP504-I/ML
DSPIC33EP256GP504T-E/ML
DSPIC33EP256GP504T-H/ML
DSPIC33EP256GP504T-I/ML
DSPIC33EP256MC204-E/ML
DSPIC33EP256MC204-H/ML
DSPIC33EP256MC204-I/ML
DSPIC33EP256MC204T-E/ML
DSPIC33EP256MC204T-E/MLC02
DSPIC33EP256MC204T-H/ML
DSPIC33EP256MC204T-I/ML
DSPIC33EP256MC504-E/ML
DSPIC33EP256MC504-H/ML

KSRA-16BWET454 - CCB 3027 Final Notice: Qualification of palladium coated copper with gold flash (CuPdAu) bond wire for selected products of the 0.18um TSMC wafer technology available in 44L QFN (8x8x0.9mm) package at NSEB assembly site.

DSPIC33EP256MC504-I/ML
DSPIC33EP256MC504T-E/ML
DSPIC33EP256MC504T-H/ML
DSPIC33EP256MC504T-I/ML
DSPIC33EP32GP504-E/ML
DSPIC33EP32GP504-H/ML
DSPIC33EP32GP504-I/ML
DSPIC33EP32GP504T-E/ML
DSPIC33EP32GP504T-H/ML
DSPIC33EP32GP504T-I/ML
DSPIC33EP32GS504-E/ML
DSPIC33EP32GS504-I/ML
DSPIC33EP32GS504-I/MLC09
DSPIC33EP32GS504-I/MLC10
DSPIC33EP32GS504T-E/ML
DSPIC33EP32GS504T-I/ML
DSPIC33EP32GS504T-I/MLC09
DSPIC33EP32GS504T-I/MLC10
DSPIC33EP32MC204-E/ML
DSPIC33EP32MC204-H/ML
DSPIC33EP32MC204-I/ML
DSPIC33EP32MC204T-E/ML
DSPIC33EP32MC204T-H/ML
DSPIC33EP32MC204T-I/ML
DSPIC33EP32MC504-E/ML
DSPIC33EP32MC504-H/ML
DSPIC33EP32MC504-I/ML
DSPIC33EP32MC504T-E/ML
DSPIC33EP32MC504T-H/ML
DSPIC33EP32MC504T-I/ML
DSPIC33EP512GM304-E/ML
DSPIC33EP512GM304-I/ML
DSPIC33EP512GM604-E/ML
DSPIC33EP512GM604-I/ML
DSPIC33EP512GP504-E/ML
DSPIC33EP512GP504-H/ML
DSPIC33EP512GP504-I/ML
DSPIC33EP512GP504T-H/ML
DSPIC33EP512GP504T-I/ML
DSPIC33EP512MC204-E/ML
DSPIC33EP512MC204-H/ML
DSPIC33EP512MC204-I/ML
DSPIC33EP512MC204T-E/ML
DSPIC33EP512MC204T-H/ML
DSPIC33EP512MC204T-I/ML
DSPIC33EP512MC504-E/ML
DSPIC33EP512MC504-H/ML
DSPIC33EP512MC504-I/ML
DSPIC33EP512MC504T-E/ML

KSRA-16BWET454 - CCB 3027 Final Notice: Qualification of palladium coated copper with gold flash (CuPdAu) bond wire for selected products of the 0.18um TSMC wafer technology available in 44L QFN (8x8x0.9mm) package at NSEB assembly site.

DSPIC33EP512MC504T-H/ML

DSPIC33EP512MC504T-I/ML

DSPIC33EP64GP504-E/ML

DSPIC33EP64GP504-H/ML

DSPIC33EP64GP504-I/ML

DSPIC33EP64GP504-I/MLA3

DSPIC33EP64GP504T-E/ML

DSPIC33EP64GP504T-H/ML

DSPIC33EP64GP504T-I/ML

DSPIC33EP64GS504-E/ML

DSPIC33EP64GS504-E/MLC06

DSPIC33EP64GS504-I/ML

DSPIC33EP64GS504-I/MLC11

DSPIC33EP64GS504-I/MLRB3

DSPIC33EP64GS504T-E/ML

DSPIC33EP64GS504T-I/ML

DSPIC33EP64GS504T-I/MLC11

DSPIC33EP64GS504T-I/MLRB3

DSPIC33EP64MC204-E/ML

DSPIC33EP64MC204-H/ML

DSPIC33EP64MC204-I/ML

DSPIC33EP64MC204T-E/ML

DSPIC33EP64MC204T-H/ML

DSPIC33EP64MC204T-I/ML

DSPIC33EP64MC504-E/ML

DSPIC33EP64MC504-H/ML

DSPIC33EP64MC504-I/ML

DSPIC33EP64MC504T-E/ML

DSPIC33EP64MC504T-H/ML

DSPIC33EP64MC504T-I/ML

DSPIC33EV128GM004-E/ML

DSPIC33EV128GM004-H/ML

DSPIC33EV128GM004-I/ML

DSPIC33EV128GM004T-I/ML

DSPIC33EV128GM104-E/ML

DSPIC33EV128GM104-H/ML

DSPIC33EV128GM104-I/ML

DSPIC33EV128GM104T-I/ML

DSPIC33EV256GM004-E/ML

DSPIC33EV256GM004-H/ML

DSPIC33EV256GM004-I/ML

DSPIC33EV256GM004T-I/ML

DSPIC33EV256GM104-E/ML

DSPIC33EV256GM104-H/ML

DSPIC33EV256GM104-I/ML

DSPIC33EV256GM104T-I/ML

DSPIC33EV64GM004-E/ML

DSPIC33EV64GM004-H/ML

DSPIC33EV64GM004-I/ML

Date: Thursday, August 15, 2019

KSRA-16BWET454 - CCB 3027 Final Notice: Qualification of palladium coated copper with gold flash (CuPdAu) bond wire for selected products of the 0.18um TSMC wafer technology available in 44L QFN (8x8x0.9mm) package at NSEB assembly site.

DSPIC33EV64GM004I-I/ML
DSPIC33EV64GM104-E/ML
DSPIC33EV64GM104-H/ML
DSPIC33EV64GM104-I/ML
DSPIC33EV64GM104T-I/ML
HA7619-I/ML027
HA7619T-I/ML025
HA7619T-I/ML027
MTCH6301-I/ML
MTCH6301T-I/ML
PIC24EP128GP204-E/ML
PIC24EP128GP204-H/ML
PIC24EP128GP204-I/ML
PIC24EP128GP204-I/MLA3
PIC24EP128GP204T-I/ML
PIC24EP128MC204-E/ML
PIC24EP128MC204-H/ML
PIC24EP128MC204-I/ML
PIC24EP128MC204-I/MLA3
PIC24EP128MC204T-I/ML
PIC24EP256GP204-E/ML
PIC24EP256GP204-H/ML
PIC24EP256GP204-I/ML
PIC24EP256GP204T-E/ML
PIC24EP256GP204T-H/ML
PIC24EP256GP204T-I/ML
PIC24EP256GP204T-I/ML029
PIC24EP256MC204-E/ML
PIC24EP256MC204-H/ML
PIC24EP256MC204-I/ML
PIC24EP256MC204T-E/ML
PIC24EP256MC204T-H/ML
PIC24EP256MC204T-I/ML
PIC24EP32GP204-E/ML
PIC24EP32GP204-H/ML
PIC24EP32GP204-I/ML
PIC24EP32GP204T-E/ML
PIC24EP32GP204T-H/ML
PIC24EP32GP204T-I/ML
PIC24EP32MC204-E/ML
PIC24EP32MC204-H/ML
PIC24EP32MC204-I/ML
PIC24EP32MC204T-E/ML
PIC24EP32MC204T-H/ML
PIC24EP32MC204T-I/ML
PIC24EP512GP204-E/ML
PIC24EP512GP204-H/ML
PIC24EP512GP204-I/ML
PIC24EP512GP204T-E/ML

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PIC24EP512GP204I-H/ML
PIC24EP512GP204T-I/ML
PIC24EP512MC204-E/ML
PIC24EP512MC204-H/ML
PIC24EP512MC204-I/ML
PIC24EP512MC204T-E/ML
PIC24EP512MC204T-H/ML
PIC24EP512MC204T-I/ML
PIC24EP64GP204-E/ML
PIC24EP64GP204-H/ML
PIC24EP64GP204-I/ML
PIC24EP64GP204-I/MLA3
PIC24EP64GP204T-E/ML
PIC24EP64GP204T-H/ML
PIC24EP64GP204T-I/ML
PIC24EP64MC204-E/ML
PIC24EP64MC204-H/ML
PIC24EP64MC204-I/ML
PIC24EP64MC204T-E/ML
PIC24EP64MC204T-H/ML
PIC24EP64MC204T-I/ML
PIC24FJ128GA204-I/ML
PIC24FJ128GA204T-I/ML
PIC24FJ128GB204-E/ML
PIC24FJ128GB204-I/ML
PIC24FJ128GB204T-I/ML
PIC24FJ64GA204-E/ML
PIC24FJ64GA204-I/ML
PIC24FJ64GA204T-I/ML
PIC24FJ64GB204-E/ML
PIC24FJ64GB204-I/ML
PIC32MX110F016D-I/ML
PIC32MX110F016DT-I/ML
PIC32MX110F016DT-V/ML
PIC32MX110F016D-V/ML
PIC32MX120F032D-50I/ML
PIC32MX120F032D-I/ML
PIC32MX120F032DT-50I/ML
PIC32MX120F032DT-I/ML
PIC32MX120F032DT-V/ML
PIC32MX120F032D-V/ML
PIC32MX130F064D-I/ML
PIC32MX130F064DT-I/ML
PIC32MX130F064DT-V/ML
PIC32MX130F064D-V/ML
PIC32MX150F128D-50I/ML
PIC32MX150F128D-I/ML
PIC32MX150F128DT-50I/ML
PIC32MX150F128DT-I/ML

KSRA-16BWET454 - CCB 3027 Final Notice: Qualification of palladium coated copper with gold flash (CuPdAu) bond wire for selected products of the 0.18um TSMC wafer technology available in 44L QFN (8x8x0.9mm) package at NSEB assembly site.

PIC32MX150F128DT-V/ML
PIC32MX150F128D-V/ML
PIC32MX170F256D-I/ML
PIC32MX170F256DT-I/ML
PIC32MX170F256DT-V/ML
PIC32MX170F256D-V/ML
PIC32MX210F016D-I/ML
PIC32MX210F016DT-I/ML
PIC32MX210F016DT-V/ML
PIC32MX210F016D-V/ML
PIC32MX220F032D-50I/ML
PIC32MX220F032D-I/ML
PIC32MX220F032DT-50I/ML
PIC32MX220F032DT-I/ML
PIC32MX220F032DT-V/ML
PIC32MX220F032D-V/ML
PIC32MX230F064D-I/ML
PIC32MX230F064DT-I/ML
PIC32MX230F064DT-V/ML
PIC32MX230F064D-V/ML
PIC32MX250F128D-50I/ML
PIC32MX250F128D-I/ML
PIC32MX250F128DT-50I/ML
PIC32MX250F128DT-I/ML
PIC32MX250F128DT-I/ML026
PIC32MX250F128DT-V/ML
PIC32MX250F128D-V/ML
PIC32MX270F256D-I/ML
PIC32MX270F256DT-I/ML
PIC32MX270F256DT-V/ML
PIC32MX270F256D-V/ML
WP200TX01-E/ML001
WP200TX01T-E/ML001



QUALIFICATION REPORT SUMMARY
RELIABILITY LABORATORY

PCN#: KSRA-16BWET454

Date
July 10, 2019

Qualification of palladium coated copper with gold flash (CuPdAu) bond wire for selected products of the 0.18um TSMC wafer technology available in 44L QFN (8x8x0.9mm) package at NSEB assembly site. This is a Q006 grade 1 qualification.



MICROCHIP PACKAGE QUALIFICATION REPORT

Purpose	Qualification of palladium coated copper with gold flash (CuPdAu) bond wire for selected products of the 0.18um TSMC wafer technology available in 44L QFN (8x8x0.9mm) package at NSEB assembly site. This is a Q006 grade 1 qualification.
CCB No.	3027
CN	ES289554
QUAL ID	Q19058 Rev. A
MP CODE	TLAK14T3XQDE
Part No.	DSPIC33EP256GM604-E/ML
Bonding No.	BDM-001440 Rev. A
<u>Package</u>	
Type	44L QFN
Package size	8x8x0.9 mm
Die thickness	11 mils
Die size	188.0 x 172.9 mils
<u>Lead Frame</u>	
Paddle size	272 x 272 mils
Material	C194
Process	Etched
Lead Lock	Yes
Part Number	FR1139
<u>Material</u>	
Epoxy	8600
Wire	CuPdAu wire
Mold Compound	G700LTD
Plating Composition	Matte Tin



MICROCHIP PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
NSEB195100006.000	TC11919364200.200	1912H0W
NSEB195100007.000	TC11919364200.200	1912H1U
NSEB195100008.000	TC11919364200.200	1912H28

Result

Pass Fail _____

44L QFN 8x8x0.9 mm assembled by NSEB pass reliability test per AEC-Q006 Standard. This package was qualified the Moisture/Reflow Sensitivity Classification Level 1 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
Moisture/Reflow Sensitivity Classification Test (At MSL Level 1)	85°C/ 85%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH 3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243 (IPC/JEDEC J-STD-020E)	IPC/JEDEC C J-STD- 020E	198	0/198	Pass	

Precondition Prior Perform Reliability Tests (At MSL Level 1)	Electrical Test :+25°C, 85°C and 125°C System: J750	JESD22- A113	693(0)	693	Pass	Good Devices
	Bake 150°C, 24 hrs System: CHINEE			693		
	85°C/85%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH			693		
	3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243			693		
	Electrical Test :+25°C, 85°C and 125°C System: J750			0/693		

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		231		Parts had been pre-conditioned at 260°C
	Electrical Test: + 85°C and 125°C System: J750		231(0)	0/231	Pass	
	Bond Strength: Wire Pull (>2.5 grams) Bond Shear (>15.00 grams)		45 (0)	0/45	Pass	
	Stress Condition: -65°C to +150°C, 1000 Cycles System : TABAI ESPEC TSA-70H			231		
	Electrical Test: + 85°C and 125°C System: J750		231(0)	0/231	Pass	
Bond Strength: Wire Pull (>2.5 grams) Bond Shear (>15.00 grams)	45 (0)	0/45	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: 3.6 Volts, 1.98 Volts System: HAST 6000X	JESD22-A110		231		Parts had been pre-conditioned at 260°C
	Electrical Test: + 25°C, 85°C and 125°C System: J750		231(0)	0/231	Pass	77 units / lot
	Bond Strength: Wire Pull (>2.5 grams) Bond Shear (>15.00 grams)		45 (0)	0/45	Pass	
	Stress Condition: +130°C/85%RH, 192 hrs. Bias Volt: 3.6 Volts, 1.98 Volts System: HAST 6000X			231		
	Electrical Test: + 25°C, 85°C and 125°C System: J750		231(0)	0/231	Pass	
	Bond Strength: Wire Pull (>2.5 grams) Bond Shear (>15.00 grams)		45 (0)	0/45	Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
UNBIASED-HAST	Stress Condition: +130°C/85%RH, 96 hrs. System: HAST 6000X	JESD22- A118		231		Parts had been pre-conditioned at 260°C 77 units / lot
	Electrical Test: +25°C System: J750		231(0)	0/231	Pass	
	Stress Condition: +130°C/85%RH, 192 hrs. System: HAST 6000X			231		
	Electrical Test: +25°C System: J750		231(0)	0/231	Pass	
High Temperature Storage Life	Stress Condition: Bake 175°C, 500 hrs System: SHEL LAB	JESD22- A103		135		45 units / lot
	Electrical Test: + 25°C,85°C and 125°C System: J750		135(0)	0/135	Pass	
	Stress Condition: Bake 175°C, 1000 hrs System: SHEL LAB			135		
	Electrical Test: + 25°C,85°C and 125°C System: J750		135(0)	0/135	Pass	
Solderability Temp 245°C	Steam Aging: Temp 93°C,8Hrs System: SAS-3000 Solder Dipping:Solder Temp.245°C Solder material:Pb Free Sn 95.5Ag3.9 Cu0.6 System: ERSA RA 2200D Visual Inspection: External Visual Inspection	J-STD- 002	22 (0)	22 22 0/22	Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
Physical Dimensions	Physical Dimension, 10 units from 1 lot	JESD22-B100/B108	30(0) Units	0/30	Pass	
Bond Strength	Wire Pull (> 2.5 grams)	M2011	30 (0) Wires	0/30	Pass	
Data Assembly	Bond Shear (>15.00 grams)	JESD22-B116	30 (0) bonds	0/30	Pass	