



QUALIFICATION REPORT SUMMARY
RELIABILITY LABORATORY

PCN #: CENO-21CXIV459

Date:
May 7, 2024

Qualification of palladium coated copper with gold flash (CuPdAu) as a new bond wire material for KSZ8041NLI, KSZ8041RNLI-TR, KSZ8041RNL-TR, KSZ8041NL-TR, KSZ8041RNLI, KSZ8041RNL, SPNZ801059, KSZ8041NL, KSZ8041NLI-TR, KSZ8851SNLI, KSZ8851SNL, KSZ8851SNL-TR and KSZ8851SNLI-TR catalog part numbers (CPN) available in 32L VQFN (5x5x0.9mm) package at MTAI assembly site. This is a qualification by similarity (QBS).



MICROCHIP Package Qualification Report

Purpose: Qualification of palladium coated copper with gold flash (CuPdAu) as a new bond wire material for KSZ8041NLI, KSZ8041RNLI-TR, KSZ8041RNL-TR, KSZ8041NL-TR, KSZ8041RNLI, KSZ8041RNL, SPNZ801059, KSZ8041NL, KSZ8041NLI-TR, KSZ8851SNLI, KSZ8851SNL, KSZ8851SNL-TR and KSZ8851SNLI-TR catalog part numbers (CPN) available in 32L VQFN (5x5x0.9mm) package at MTAI assembly site. This is a qualification by similarity (QBS).

CCB No.:4601 and 8071

Misc.	Assembly site	MTAI
	BD Number	BDE006697-01
	MP Code (MPC)	66P0145LXYXY
	Part Number (CPN)	PIC32CM5164JH01064-E/5LX
	MSL information	MSL1
	Assembly Shipping Media	T/R - TUBE - TRAY
	Base Quantity Multiple (BQM)	3300 - 40 - 260
	Reliability Site	MPHIL
Lead-Frame	Paddle size	264x264
	Material	C194
	DAP Surface Prep	Cu
	Treatment	BOT on Paddle
	Process	Etched
	Lead-lock	No
	Part Number	10106409
	Lead Plating	Matte Tin
	Strip Size	250x70mm
	Strip Density	120
Bond Wire	Material	CuPdAu
Die Attach	Part Number	3280
	Conductive	Yes
MC	Part Number	G700LTD
PKG	Package Type	VQFN
	Pin/Ball Count	64
	PKG width/size	9 x 9 mm



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Package Qualification Report

Manufacturing Information

Assembly Lot No.
MTAI242201781.000
MTAI242202179.000
MTAI242202518.000

Result



Pass



Fail



66P01 in VQFN 64 9x9 WF (5LX) package, Standard 125°C using CuPdAu/2N wire, MSL1 assembled in MTAI pass reliability test per QCI-39000 which was conducted at MPHL rel lab. This package is qualified 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
Precondition Prior Perform Reliability Tests (At MSL Level 1)	Electrical Test :25°C M1_SV_1024	JESD22-A113, JIP/ IPC/JEDEC J-STD-020E	231 per lot	Lot 1 0/231	Pass	Good Devices
				Lot 2 0/231	Pass	
				Lot 3 0/231	Pass	
	Bake 150°C, 24 hrs System: HERAEUS		231 per lot			
	Moisture Soak 168h(85°C/85%RH) System: VOTSCH VC4034		231 per lot			
	Reflow 3x Convection-Reflow 265°C max System: Mancorp CR.5000F		231 per lot	Lot 1 0/231	Pass	
				Lot 2 0/231	Pass	
				Lot 3 0/231	Pass	
	Electrical Test : 25°C M1_SV_1024		231 per lot	Lot 1 0/231	Pass	
				Lot 2 0/231	Pass	
				Lot 3 0/231	Pass	

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS.	Result	Remarks
High Temperature Storage Life	Stress Condition: Bake 175°C, 500 hrs System: HERAEUS Electrical Test: 25°C /130°C System: M1_SV_1024	JESD22-A103	45 units 1 lot	Lot 1 0/45	Pass	
HAST	Stress Condition: (Standard) 110°C, 85%RH, 264 hrs. VOLTS=5.5V System: HIRAYAMA HASTEST PC-422R8 Electrical Test: 25°C /130°C System: M1_SV_1024	JESD22-A110	77 units per lot	Lot 1 0/77 Lot 2 0/77 Lot 3 0/77	Pass Pass Pass	Parts had been pre-conditioned at 260°C
UNBIASED HAST	Stress Condition: (Standard) + 110°C, 85%RH, 264 hrs. System: HIRAYAMA HASTEST PC-422R8 Electrical Test: 25°C System: M1_SV_1024	JESD22-A118	77 units per lot	Lot 1 0/77 Lot 2 0/77 Lot 3 0/77	Pass Pass Pass	Parts had been pre-conditioned at 260°C

PACKAGE QUALIFICATION REPORT

Test Number (Reference)	Test Condition	Standard/ Method	Qty. (Acc.)	Def/SS	Result	Remarks
Temp Cycle	Stress Condition: (Standard) - 65°C/150°C, 500 Cycles System : Votsch VTS ² 7012 Electrical Test: 25°C/130°C System: M1_SV_1024	JESD22-A104	77 units per lot	Lot 1 0/77 Lot 2 0/77 Lot 3 0/77	Pass Pass Pass	Parts had been pre-conditioned at 260°C
	Wire Bond Pull WBP	Mil. Std. 883-2011	5 units, 30 bonds 1 lot	Lot 1 0/30	Pass	
Wire Bond Pull WBP , 0 Hour		Mil. Std. 883-2011	5 units, 30 bonds 1 lot	Lot 1 0/30	Pass	
Wire Bond Shear WBS, 0Hour		CDF-AEC-Q100-001	5 units, 30 bonds 1 lot	Lot 1 0/30	Pass	
Standard Pb-free Solderability	>95% lead coverage	J-STD-002E	22 units 1 lot	0/22	Pass	



QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN #: CENO-21CXIV459

Date:
October 10, 2025

Qualification of palladium coated copper with gold flash (CuPdAu) as a new bond wire material and 3280NP as a new die attach material for selected KSZ8091, KSZ8051 and KSZ8081 device families available in 32L VQFN (5x5x0.9mm) package at MTAI assembly site.

The qualification of palladium coated copper with gold flash (CuPdAu) as a new bond wire material for KSZ8041NLI, KSZ8041RNLI-TR, KSZ8041RNL-TR, KSZ8041NL-TR, KSZ8041RNLI, KSZ8041RNL, SPNZ801059, KSZ8041NL, KSZ8041NLI-TR, KSZ8851SNLI, KSZ8851SNL, KSZ8851SNL-TR and KSZ8851SNLI-TR catalog part numbers (CPN) available in 32L VQFN (5x5x0.9mm) package at MTAI assembly site will qualify by similarity (QBS).



MICROCHIP

PACKAGE QUALIFICATION REPORT

Purpose	Qualification of palladium coated copper with gold flash (CuPdAu) as a new bond wire material and 3280NP as a new die attach material for selected KSZ8091, KSZ8051 and KSZ8081 device families available in 32L VQFN (5x5x0.9mm) package at MTAI assembly site. The qualification of palladium coated copper with gold flash (CuPdAu) as a new bond wire material for KSZ8041NLI, KSZ8041RNLI-TR, KSZ8041RNL-TR, KSZ8041NL-TR, KSZ8041RNLI, KSZ8041RNL, SPNZ801059, KSZ8041NL, KSZ8041NLI-TR, KSZ8851SNLI, KSZ8851SNL, KSZ8851SNL-TR and KSZ8851SNLI-TR catalog part numbers (CPN) available in 32L VQFN (5x5x0.9mm) package at MTAI assembly site will qualify by similarity (QBS).
CN	E000261602
QUAL ID	R2500545 Rev A
Bonding No.	BD-002990 Rev.01
MP CODE	XKAA1TPFAA14
Part No.	KSZ8081RNBIA-TR
CCB No.	7393 and 8071
<u>Lead Frame</u>	
Paddle size	150 x 150
Material	A194
Surface	Ag selective
Process	Etched
Lead lock	Yes
Part number	10103214
Plating composition	Matte Tin
<u>Bond Wire</u>	
Wire	CuPdAu wire
<u>Die Attach Material</u>	
Epoxy	3280NP
<u>Mold Compound</u>	
Mold compound	G700LTD
<u>Package</u>	
Type	32L VQFN
Package size	5x5



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PACKAGE QUALIFICATION REPORT

Manufacturing Information

Assembly Lot No.	Wafer Lot No.	Date Code
MTAI260601243.000	DU02925247778.100	2519YUG
MTAI260601253.000	DU02925247778.100	251909E
MTAI260601254.000	DU02925247778.100	25190AK

Result

☒ Pass ☐ Fail ☐ _____

32L VQFN (5x5) assembled by MTAI pass reliability test per QCI-39000. This package was qualified the Moisture/Reflow Sensitivity Classification Level 2 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 2)	Electrical Test: +25°C and 85°C System: LTX_D1X Bake 150°C, 24 hrs. System: CHINEE 85°C/60%RH Moisture Soak 168 hrs. System: TABAI ESPEC Model PR-3SPH 3x Convection-Reflow 265°C max System: Vitronics Soltec MR1243	JESD22-A113 JIP/ IPC/JEDEC J-STD-020E	693(0)	0/693	Pass	Good Devices
	Electrical Test: +25°C and 85°C System: LTX_D1X		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 Electrical Test: +85°C System: LTX_D1X Bond Strength: Wire Pull (>3.00 grams)	JESD22-A104	231(0)	231 0/231	Pass	Parts had been pre-conditioned at 260°C 77 units / lot
UNBIASED-HAST	Stress Condition: +130°C/85%RH, 96 hrs. System: HAST 6000X Electrical Test: +25°C System: LTX_D1X	JESD22-A118	231(0)	231 0/231	Pass	Parts had been pre-conditioned at 260°C 77 units / lot
HAST	Stress Condition: +110°C/85%RH, 264 hrs. Bias Volt: VDD=3.3 Volts System: HAST 6000X Electrical Test: +25°C and 85°C System: LTX_D1X	JESD22-A110	231(0)	231 0/231	Pass	Parts had been pre-conditioned at 260°C 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, 1008 hrs. System: CHINEE	JESD22- A103		135		45 units
	Electrical Test: +25°C and 85°C System: LTX_D1X		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 (>8.00 grams)	CDF-AEC- Q100-001	30(0) Bonds	0/30	Pass	