QUALIFICATION REPORT SUMMARY

RELIABILITY LABORATORY

PCN #: LIAL-25IXJB026

Date
July 24, 2019

Qualification of ASE as a new assembly site for selected products of the 0.18um wafer technology available in 64L LQFP (10x10x1.4mm) package. The selected products 48L LQFP (7x7x1.4 mm) package will qualify by similarity (QBS)

Purpose: Qualification of ASE as a new assembly site for selected products of the 0.18um wafer technology available in 64L (10x10x1.4mm) LQFP package. The selected products 48L LQFP (7x7x1.4 mm) package will qualify by similarity (QBS)

I. Summary:

The purpose of this report is to qualify TKDC1 (KSZ8873MLL) in 64L LQFP 10x10package at ASE, Taiwan per CCB# 3287 and following guidelines established in Microchip specification QCI-39000, “Worldwide Quality Conformance Requirements”.

II. Conclusion:

Based on the results, the TKDC1 (KDZ8873MLL) in 64L LQFP 10x10 package complies with the reliability guidelines implemented in the qualification plan. Therefore, this part/package can be released to production as per guidelines established in Microchip specification QCI-39000, “Worldwide Quality Conformance Requirements”.

III. Device Description:

Device	KSZ8873MLL
Document Control Number	ML122018001A
Document Revision	E
CCB No.	3287 and 3287.001

IV. Qualification Material:

Test Lot	Lot 1	Lot 2	Lot 3
WAFER LOT	DU02918469208.100/ P6V531.00	DU02918469208.100/ 17CG48	DU02918469208.100/ 17CG48
ASSEMBLY LOT	ASE190900034.000	ASE190900032.000	ASE190900031.000
PACKAGE	64L-LQFP 10x10x1.4 mm	64L-LQFP 10x10x1.4 mm	64L-LQFP 10x10x1.4 mm
QUAL TESTS	PRECOND, HTSL, HAST, UHAST, TC	PRECOND, HAST, UHAST, TC	PRECOND, HAST, UHAST, TC

V. Bill of Materials:

Misc.	Assembly site	ASE
	BD Number	AAH@08031A420-A
	MP Code (MPC)	TKDC11CEAA02
	Part Number (CPN)	KSZ8873MLL
Lead-Frame	Paddle size	5.0 mm X 5.0 mm
	Material	C7025
	Surface Treatment	Non-Rough
	Process	Stamped
	Lead-lock	N/A
	Part Number	1100697124
	Lead Plating	Double Ring Ag Plating
Bond Wire	Material	Au
Die Attach	Part Number	CRM-1076WA
	Conductive	Yes
MC	Part Number	EME-G631H
PKG	PKG Type	LQFP
	Pin/Ball Count	64
	PKG width/size	10 X 10 X 1.4 mm
Die	Die Thickness	14 mils
	Die Size	3.100 mm X 3.300 mm
	Fab Process (Site)	180 nm (DongBu)

VI. Qualification Data:

Package Preconditioning

Test Method/Condition	JEDEC J-STD-020D and JESD22-A113F, MSL Level 3 soak and 260°C peak Reflow Temperature
Lot #	Results (Fail/Pass)
Lot 1	0/260
Lot 2	0/260
Lot 3	0/260

Post testing was conducted at +25◦C

HAST (Highly Accelerated Temperature and Humidity Stress Test)

Test Method/Condition	JESD22-A110, Vin = +3.3V, Ta = +130°C/85%RH, 96 HRS Min SS = 77 units
Lot #	Results (Fail/Pass)
Lot 1	0/82
Lot 2	0/82
Lot 3	0/82

Pre and Post testing was conducted at +25◦C, +85◦C

UNBIASED HAST

Test Method/Condition	JESD22-A118, Ta = +130°C/85%RH, 96HRS Min SS = 77 units
Lot #	Results (Fail/Pass)
Lot 1	0/82
Lot 2	0/82
Lot 3	0/82

Pre and Post testing was conducted at +25◦C

Temperature Cycling

Test Method/Condition	JESD22-A104, Ta = -65°C/+150 °C, 500 CYC Min SS = 77 units
Lot #	Results (Fail/Pass)
Lot 1	0/82
Lot 2	0/82
Lot 3	0/82

Pre and Post testing was conducted at +25◦C, +85◦C

High Temperature Storage Life

Test Method/Condition	JESD22-A103, Ta = +150 °C, 1008 HRS Min SS = 45 units
Lot #	Results (Fail/Pass)
Lot 1	0/50

Pre and Post testing was conducted at +25◦C, +85◦C

VII. Wire Pull/Ball Shear

Lot #1:

Test Item	Sample Size/ Unit	Comment
Wire Pull	200 wires	Pass
Ball Shear	100 balls	Pass
Solderabilty	22	Pass

Lot #2

Test Item	Sample Size/ Unit	Comment
Wire Pull	200 wires	Pass
Ball Shear	100 balls	Pass
Solderabilty	22	Pass

Lot #3

Test Item	Sample Size/ Unit	Comment
Wire Pull	200 wires	Pass
Ball Shear	100 balls	Pass
Solderabilty	22	Pass

VIII. Physical Dimension:

Test Method/Condition	JESD22 -B100 and B108, Min SS = 10 units/lot
Lot #	Results (Fail/Pass)
Lot 1	0/10 PASS
Lot 2	0/10 PASS
Lot 3	0/10 PASS