



MICROCHIP

QUALIFICATION REPORT SUMMARY

PCN #: BLAS-21SMFQ723

**Date:
May 14, 2025**

Qualification of UNIG as a new assembly site for various products available in Tube, Tray and Tape & Reel packing media.

Purpose: Qualification of UNIG as a new assembly site for various products available in Tube, Tray and Tape & Reel packing media.

I. Summary:

The purpose of this qualification is to release to qualify new plant at Unisem Gopeng to assemble products in standard wire bond QFN packages per CCB 6462, following guidelines in Microchip specification QCI-39000. Device MIC4605-1YMT in 10-lead UDFN2.5x2.5x0.6mm is selected as the test vehicle.

Conclusion:

Based on successful Reliability stress results on test device MIC4605-1YMT, Unisem Gopeng is qualified as an assembly site for standard wire bond QFN packages as per guidelines established in Microchip specification QCI-39000, "Worldwide Quality Conformance Requirements.

II. Device Description:

Device	MIC4605-1YMT-TR
Product	85V Half-Bridge MOSFET Driver with Adaptive Dead Time and Shoot- Through Protection
Document Control Number	ML0520253932
Document Revision	A
CCB No.	6462

III. Qualification Material:

Test Lot	Lot 1	Lot 2	Lot 3
WAFER LOT	TMPE224087756.400	TMPE224087756.400	TMPE224087756.400
ASSEMBLY LOT	UNIG252900004.000	UNIG252900005.000	UNIG252900006.000
PACKAGE	10-lead UDFN2.5x2.5x0.6mm	10-lead UDFN2.5x2.5x0.6mm	10-lead UDFN2.5x2.5x0.6mm
QUAL TESTS	MSL1, UHAST, TC, HTSL	MSL1, UHAST, TC, HTSL	MSL1, UHAST, TC, HTSL

IV. Bill of Material:

Misc.	Assembly site	UNIG
	BD Number	D-008111
	MP Code (MPC)	27807YHNAAA1
	Part Number (CPN)	MIC4605-1YMT-TR
	MSL information	MSL 1, 260°C
	Assembly Shipping Media (T/R, Tube/Tray)	T&R
	Base Quantity Multiple (BQM)	5000
	Reliability Site	UNIS
Lead-Frame	Paddle size	65x91mils
	Material	A194ESH
	DAP Surface Prep	Ag selective
	Treatment	No
	Process	Etch
	Lead-lock	Yes
	Part Number	40100183
	Lead Plating	Matte Sn
	Strip Size	70x250mm
Strip Density	1444	
Bond Wire	Material	Au
Die Attach	Part Number	8290
	Conductive	Yes
MC	Part Number	G770HCD
PKG	Package Type	UDFN
	Pin/Ball Count	10
	PKG width/size	2.5x2.5x0.6mm

V. Qualification Data:

Package Pre-conditioning MSL3

Test Method/Condition	JEDEC J-STD-020 and JESD22-A113, MSL Level 1 soak at 85°C/60%RH/168 hrs, 3x 260°C peak Reflow Temperature		
Minimum sample requirement	3 lots, 231 units / lot		
ATE Test Results (Fail/Pass)	Lot 1	Lot 2	Lot 3
	0/246	0/246	0/246

Pre and Post testing was conducted at 25°C.

Unbiased HAST (UHAST) post-MSL3 Preconditioning

Test Method/Condition	JESD22-A118, Ta = 130°C/85%RH, 192 hrs		
Minimum sample requirement	3 lots, 77 units / lot		
ATE Test Results (Fail/Pass)	Lot 1	Lot 2	Lot 3
	0/82	0/82	0/82

Pre and Post testing was conducted at 25°C

Temperature Cycling (TC) post-Pre-conditioning MSL3

Test Method/Condition	JESD22-A104, Ta = -65°C/150 °C, 500 cycles		
Minimum sample requirement	3 lots, 77 units / lot		
ATE Test Results (Fail/Pass)	Lot 1	Lot 2	Lot 3
	0/82	0/82	0/82

Pre and Post testing was conducted at 25°C.

High Temperature Storage Life (HTSL)

Test Method/Condition	JESD22-A103, Ta = 150 °C, 1000 hrs		
Sample Requirement	1 lot, minimum sample size = 45 units/lot.		
Test Material	Lot 1	Lot 2	Lot 3
ATE Result (fail/sample size)	0/50	0/50	0/50

Pre and Post testing was conducted at 25°C.

External Visual Inspection

Lot#	Results
UNIG252900004.000	Passed. No abnormality on package exterior was observed.
UNIG252900005.000	
UNIG252900006.000	

Wire Bond Pull Post 500 TC Cycles

Lot #	Results (Fail/Pass)
Lot 1	Passed
Lot 2	Passed
Lot 3	Passed

Wire Bond Pull (t=0)

Lot #	Results (Fail/Pass)
Lot 1	Passed
Lot 2	Passed
Lot 3	Passed

Wire Bond Shear (t=0)

Lot #	Results (Fail/Pass)
Lot 1	Passed
Lot 2	Passed
Lot 3	Passed

Solderability

Spec	Coverage >95%			
Solder	Spec	245 ± 5 °C	Result (Fail/Pass)	0/22
Temperature	Actual	245 °C	Result (Fail/Pass)	0/22