PCN Number:	20250121001.2	**PCN Date:**	January 21, 2025
Title:	Qualification of RFAB in addition to DMOS6 for METDCU processing		
Customer Contact:	Change Management team	**Dept:**	Quality Services
Proposed 1st Ship Date:	July 20, 2025	**Sample requests accepted until:**	March 22, 2025*

***Sample requests received after March 22, 2025 will not be supported.**

Change Type:

☐	Assembly Site	☐	Design	☐	Wafer Bump Material
☐	Assembly Process	☐	Data Sheet	☐	Wafer Bump Process
☐	Assembly Materials	☐	Part number change	☒	Wafer Fab Site
☐	Mechanical Specification	☐	Test Site	☐	Wafer Fab Materials
☒	Packing/Shipping/Labeling	☐	Test Process	☐	Wafer Fab Process

PCN Details

Description of Change:

Texas Instruments is pleased to announce the qualification of RFAB as an additional option for METDCU processing for the devices listed below in the product affected section.

Current Fab Site			Additional Fab Site		
Current Fab Site	**Process**	**Wafer Diameter**	**Additional Fab Site**	**Process**	**Wafer Diameter**
DMOS6	LBC7, LBC8, LBC9	300 mm	RFAB	LBC7, LBC8, LBC9	300 mm

Qual details are provided in the Qual Data Section.

Reason for Change:

Capacity increase to support demand and continuity of supply.

Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):

No anticipated impact.

Changes to product identification resulting from this PCN:

None.

Product Affected:

DRV3256AEPAPRQ1	LP8866QRHBRQ1	SN65LBC176QDRG4	TCAN1043ADMTRQ1
DRV3256BEPAPRQ1	LP8866SQRHBRQ1	SN65LBC176QDRG4Q1	TCAN1043ADRQ1
DRV3256EPAPRQ1	SN104485DR	SN65LBC176QDRQ1	TCAN1043ADYYRQ1
LP8864QRHBRQ1	SN65LBC176AQDR	SN65LBC176QDRVS	
LP8864SQRHBRQ1	SN65LBC176QDR	SN65LBC179QDR	

Automotive Qualification Summary
(As per AEC-Q100 Rev. J and JEDEC Guidelines)

RFAB: Automotive METDCU qual
Approve Date 15-JANUARY -2025

Product Attributes

Attributes	Qual Device: BQ79616PAPRQ1	QBS Process Reference: BQ79616PAPRQ1_2.0	QBS Process Reference: BQ79616PAPRQ1_2.1
Automotive Grade Level	Grade 1	Grade 1	Grade 1
Operating Temp Range (C)	-40 to 125	-40 to 125	-40 to 125
Product Function	Power Management	Power Management	Power Management
Wafer Fab Supplier	RFAB	RFAB	RFAB
Assembly Site	PHI	PHI	PHI
Package Group	QFP	QFP	QFP
Package Designator	PAP	PAP	PAP
Pin Count	64	64	64

- QBS: Qual By Similarity, also known as Generic Data
- Qual Device BQ79616PAPRQ1 is qualified at MSL3 260C

Qualification Results

Data Displayed as: Number of lots / Total sample size / Total failed

Type	#	Test Spec	Min Lot Qty	SS / Lot	Test Name	Condition	Duration	Qual Device: BQ79616PAPRQ1	QBS Process Reference: BQ79616PAPRQ1	QBS Process Reference: BQ79616PAPRQ1
Test Group A - Accelerated Environment Stress Tests										
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Preconditioning	MSL3 260C	-	3/0/0	3/0/0	1/0/0
HAST	A2	JEDEC JESD22-A110	3	77	Biased HAST	130C/85%RH	96 Hours	3/231/0	3/231/1	1/77/0
AC/UHAST	A3	JEDEC JESD22-A102/JEDEC JESD22-A118	3	77	Autoclave	121C/15psig	96 Hours	-	3/231/0	-
AC/UHAST	A3	JEDEC JESD22-A102/JEDEC JESD22-A118	3	77	Unbiased HAST	130C/85%RH	96 Hours	3/231/0	-	-
TC	A4	JEDEC JESD22-A104 and Appendix 3	3	77	Temperature Cycle	-65C/150C	500 Cycles	3/231/0	3/231/0	1/77/0
TC-BP	A4	MIL-STD883 Method 2011	1	5	Post Temp Cycle Bond Pull	-	-	1/5/0	-	-
PTC	A5	JEDEC JESD22-A105	1	45	PTC	-40/125C	1000 Cycles	-	1/45/0	-
PTC	A5	JEDEC JESD22-A105	1	45	PTC	-40/125C	2000 Cycles	-	1/45/0	-
HTSL	A6	JEDEC JESD22-A103	1	45	High Temperature Storage Life	150C	1000 Hours	3/135/0	3/135/0	-
Test Group B - Accelerated Lifetime Simulation Tests										
HTOL	B1	JEDEC JESD22-A108	3	77	Life Test	125C	1000 Hours	-	3/231/0	-
ELFR	B2	AEC Q100-008	3	800	Early Life Failure Rate	125C	48 Hours	-	3/2400/0	-

Type	#	Test Spec	Min Lot Qty	SS / Lot	Test Name	Condition	Duration	Qual Device: BQ79616PAPRQ1	QBS Process Reference: BQ79616PAPRQ1	QBS Process Reference: BQ79616PAPRQ1
Test Group C - Package Assembly Integrity Tests										
WBS	C1	AEC Q100-001	1	30	Wire Bond Shear	Minimum of 5 devices, 30 wires Cpk>1.67	Wires	3/90/0	3/90/0	1/30/0
WBP	C2	MIL-STD883 Method 2011	1	30	Wire Bond Pull	Minimum of 5 devices, 30 wires Cpk>1.67	Wires	3/90/0	3/90/0	1/30/0
SD	C3	JEDEC J-STD-002	1	15	PB Solderability	>95% Lead Coverage	-	-	1/15/0	-
SD	C3	JEDEC J-STD-002	1	15	PB-Free Solderability	>95% Lead Coverage	-	1/15/0	1/15/0	-
PD	C4	JEDEC JESD22-B100 and B108	3	10	Physical Dimensions	Cpk>1.67	-	3/30/0	3/30/0	1/10/0
Test Group D - Die Fabrication Reliability Tests										
EM	D1	JESD61	-	-	Electromigration	-	-	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements
TDDB	D2	JESD35	-	-	Time Dependent Dielectric Breakdown	-	-	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements
HCI	D3	JESD60 & 28	-	-	Hot Carrier Injection	-	-	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements
BTI	D4	-	-	-	Bias Temperature Instability	-	-	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements
SM	D5	-	-	-	Stress Migration	-	-	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements	Completed Per Process Technology Requirements

Type	#	Test Spec	Min Lot Qty	SS / Lot	Test Name	Condition	Duration	Qual Device: BQ79616PAPRQ1	QBS Process Reference: BQ79616PAPRQ1	QBS Process Reference: BQ79616PAPRQ1
Test Group E - Electrical Verification Tests										
ESD	E2	AEC Q100-002	1	3	ESD HBM	-	2500 Volts	-	-	1/3/0
ESD	E3	AEC Q100-011	1	3	ESD CDM	-	1000 Volts	-	-	1/3/0
LU	E4	AEC Q100-004	1	3	Latch-Up	Per AEC Q100-004	-	-	-	1/6/0
ED	E5	AEC Q100-009	3	30	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	3/90/0	3/90/0	1/30/0
Additional Tests										

- Preconditioning was performed for Autoclave, Unbiased HAST, THB/Biased HAST, Temperature Cycle, Thermal Shock, and HTSL, as applicable
- The following are equivalent HTOL options based on an activation energy of 0.7eV : 125C/1k Hours, 140C/480 Hours, 150C/300 Hours, and 155C/240 Hours
- The following are equivalent HTSL options based on an activation energy of 0.7eV : 150C/1k Hours, and 170C/420 Hours
- The following are equivalent Temp Cycle options per JESD47 : -55C/125C/700 Cycles and -65C/150C/500 Cycles

Ambient Operating Temperature by Automotive Grade Level:

- Grade 0 (or E): -40C to +150C
- Grade 1 (or Q): -40C to +125C
- Grade 2 (or T): -40C to +105C
- Grade 3 (or I) : -40C to +85C

E1 (TEST): Electrical test temperatures of Qual samples (High temperature according to Grade level):

- Room/Hot/Cold : HTOL, ED
- Room/Hot : THB / HAST, TC / PTC, HTSL, ELFR, ESD & LU
- Room : AC/uHAST

Quality and Environmental data is available at TI's external Web site: http://www.ti.com/

TI Qualification ID: R-CHG-2409-073

Automotive Qualification Summary
(As per AEC and JEDEC Guidelines)

Q006 QFP at PHI
Approve Date 15-JANUARY -2025

Attributes	Qual Device: BQ79616PAPRQ1	QBS Process Reference: BQ79616PAPRQ1	QBS Process Reference: BQ79616PAPRQ1
Automotive Grade Level	Grade 1	Grade 1	Grade 1
Operating Temp Range (C)	-40 to 125	-40 to 125	-40 to 125
Product Function	Power Management	Power Management	Power Management
Wafer Fab Supplier	RFAB	RFAB	RFAB
Assembly Site	PHI	PHI	PHI
Package Group	QFP	QFP	QFP
Package Designator	PAP	PAP	PAP
Pin Count	64	64	64

Qualification Results

Data Displayed as: Number of lots / Total sample size / Total failed

Type	#	Test Spec	Min Lot Qty	SS / Lot	Test Name	Condition	Duration	Qual Device: BQ79616PAPRQ1	QBS Reference: BQ79616PAPRQ1	QBS Reference: BQ79616PAPRQ1
Test Group A - Accelerated Environment Stress Tests										
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Preconditioning	MSL3 260C	-	3/0/0	3/0/0	-
PC	A1.1	-	3	22	SAM Precon Pre	Review for delamination	-	3/66/0	3/66/0	-
PC	A1.2	-	3	22	SAM Precon Post	Review for delamination	-	3/66/0	3/66/0	-
HAST	A2.1	JEDEC JESD22-A110	3	77	Biased HAST	130C/85%RH	96 Hours	3/231/0	3/231/1	-
HAST	A2.1.2	-	3	1	Cross Section, post bHAST, 1X	Post stress cross section	Completed	3/3/0	3/3/0	-
HAST	A2.1.3	-	3	3	Wire Bond Shear, post bHAST, 1X	Post stress	-	3/9/0	3/9/0	-
HAST	A2.1.4	-	3	3	Bond Pull over Stitch, post bHAST, 1X	Post stress	-	3/9/0	3/9/0	-
HAST	A2.1.5	-	3	3	Bond Pull over Ball, post bHAST, 1X	Post stress	-	3/9/0	3/9/0	-
HAST	A2.2	JEDEC JESD22-A110	3	70	Biased HAST	130C/85%RH	192 Hours	3/231/0	3/231/12[1]	-
HAST	A2.2.1	-	3	22	SAM Analysis, post bHAST 2X	Review for delamination	Completed	3/66/0	3/66/0	-
HAST	A2.2.2	-	3	1	Cross Section, post bHAST, 2X	Post stress cross section	Completed	3/3/0	3/3/0	-
HAST	A2.2.3	-	3	3	Wire Bond Shear, post bHAST, 2X	Post stress	-	3/9/0	3/9/0	-
HAST	A2.2.4	-	3	3	Bond Pull over Stitch, post bHAST, 2X	Post stress	-	3/9/0	3/9/0	-

Type	#	Test Spec	Min Lot Qty	SS / Lot	Test Name	Condition	Duration	Qual Device: BQ79616PAPRQ1	QBS Reference: BQ79616PAPRQ1	QBS Reference: BQ79616PAPRQ1
HAST	A2.2.5	-	3	3	Bond Pull over Ball, post bHAST, 2X	Post stress	-	3/9/0	3/9/0	-
TC	A4.1	JEDEC JESD22-A104 and Appendix 3	3	77	Temperature Cycle	-65C/150C	500 Cycles	3/231/0	3/231/0	-
TC	A4.1.1	-	3	22	SAM Analysis, post TC 1X	Review for delamination	Completed	3/66/0	3/66/0	-
TC	A4.1.2	-	3	1	Cross Section, post TC, 1X	Post stress cross section	Completed	3/3/0	3/3/0	-
TC	A4.1.3	-	3	3	Wire Bond Shear, post TC, 1X	Post stress	-	3/9/0	3/9/0	-
TC	A4.1.4	-	3	3	Bond Pull over Stitch, post TC, 1X	Post stress	-	3/9/0	3/9/0	-
TC	A4.1.5	-	3	3	Bond Pull over Ball, post TC, 1X	Post stress	-	3/9/0	3/9/0	-
TC	A4.2	JEDEC JESD22-A104 and Appendix 3	3	70	Temperature Cycle	-65C/150C	1000 Cycles	3/231/0	3/231/0	-
TC	A4.2.1	-	3	22	SAM Analysis, post TC, 2X	Review for delamination	Completed	3/66/0	3/66/0	-
TC	A4.2.2	-	3	1	Cross Section, post TC, 2X	Post stress cross section	Completed	3/3/0	3/3/0	-
TC	A4.2.3	-	3	3	Wire Bond Shear, post TC, 2X	Post stress	-	3/9/0	3/9/0	-
TC	A4.2.4	-	3	3	Bond Pull over Stitch, post TC, 2X	Post stress	-	3/9/0	3/9/0	-
TC	A4.2.5	-	3	3	Bond Pull over Ball, post TC, 2X	Post stress	-	3/9/0	3/9/0	-
PTC	A5.1	JEDEC JESD22-A105	1	45	PTC	-40/125C	1000 Cycles	-	1/45/0	-
PTC	A5.2	JEDEC JESD22-A105	1	45	PTC	-40/125C	2000 Cycles	-	1/45/0	-

Type	#	Test Spec	Min Lot Qty	SS / Lot	Test Name	Condition	Duration	Qual Device: BQ79616PAPRQ1	QBS Reference: BQ79616PAPRQ1	QBS Reference: BQ79616PAPRQ1
HTSL	A6.1	JEDEC JESD22-A103	3	45	High Temperature Storage Life	150C	1000 Hours	3/135/0	3/135/0	-
HTSL	A6.1.1	-	3	1	Cross Section, post HTSL, 1X	Post stress cross section	Completed	3/3/0	3/3/0	-
HTSL	A6.2	JEDEC JESD22-A103	3	44	High Temperature Storage Life	150C	2000 Hours	3/135/0	3/135/0	-
HTSL	A6.2.1	-	3	1	Cross Section, post HTSL, 2X	Post stress cross section	Completed	3/3/0	3/3/0	-
Test Group C - Package Assembly Integrity Tests										
WBS	C1	AEC Q100-001	1	30	Wire Bond Shear	Minimum of 5 devices, 30 wires Cpk>1.67	Wires	3/90/0	3/90/0	1/30/0
WBP	C2	MIL-STD883 Method 2011	1	30	Wire Bond Pull	Minimum of 5 devices, 30 wires Cpk>1.67	Wires	3/90/0	3/90/0	1/30/0

- QBS: Qual By Similarity, also known as Generic Data
- Qual Device BQ79616PAPRQ1 is qualified at MSL3 260C

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- Room/Hot/Cold : HTOL, ED

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Quality and Environmental data is available at TI's external Web site: http://www.ti.com/

TI Qualification ID: R-CHG-2409-073

[1]-QEM-EVAL-2009-00336: Discounted. Assembly die attach process issue process optimized to avoid re-occurrence.

ZVEI ID's: SEM-PW-12

For questions regarding this notice, e-mails can be sent to the Change Management team or your local Field Sales Representative.