

PCN Number:	20200924007A.2		PCN Date:	Sept. 29, 2020 Mar. 30, 2021	
Title:	Qualification of RFAB DMOS6/Clark-PR for LP875x devices				
Customer Contact:	PCN Manager		Dept:	Quality Services	
Proposed 1st Ship Date:	March 29, 2021	Estimated Sample Availability:		Date provided at sample request	
Change Type:					
<input type="checkbox"/>	Assembly Site	<input type="checkbox"/>	Design	<input type="checkbox"/>	Wafer Bump Site
<input type="checkbox"/>	Assembly Process	<input type="checkbox"/>	Data Sheet	<input type="checkbox"/>	Wafer Bump Material
<input type="checkbox"/>	Assembly Materials	<input type="checkbox"/>	Part number change	<input type="checkbox"/>	Wafer Bump Process
<input type="checkbox"/>	Mechanical Specification	<input checked="" type="checkbox"/>	Test Site	<input checked="" type="checkbox"/>	Wafer Fab Site
<input type="checkbox"/>	Packing/Shipping/Labeling	<input type="checkbox"/>	Test Process	<input checked="" type="checkbox"/>	Wafer Fab Materials
		<input type="checkbox"/>		<input type="checkbox"/>	Wafer Fab Process
PCN Details					
Description of Change:					
Texas Instruments Incorporated is announcing the qualification of RFAB DMOS6 Wafer Fab site and Clark Probe site for LP8756x devices.					
The purpose of Addendum A is to correct New Wafer Fab name Due to multi-factory flow, Wafers start at RFAB and finish in DMOS6. Samples are built from the correct Wafer Fab DMOS6					
Current			New		
Wafer Fab Site	Process	Wafer Diameter	Wafer Fab Site	Process	Wafer Diameter
DP1DM5	LBC8	200 mm	RFAB DMOS6	LBC8	300 mm
Current		New			
Probe Site		Probe Site			
DL-LIN		CLARK-PR			
Reason for Change:					
Continuity of Supply.					
Anticipated impact on Fit, Form, Function, Quality or Reliability (positive / negative):					
None.					
Changes to product identification resulting from this PCN:					
Current					
Chip Sites	Chip Site Origin Code (20L)	Chip Site Country Code (21L)	Chip Site City		
DP1DM5	DM5	USA	Dallas		
New					
Chip Site	Chip Site Origin Code (20L)	Chip Site Country Code (21L)	Chip Site City		
RFAB DMOS6	RFB DM6	USA	Richardson Dallas		
Sample product shipping label (not actual product label)					



MADE IN: Malaysia
2DC: 2Q:



MSL 2 / 260C / 1 YEAR SEAL DT
MSL 1 / 235C / UNLIM 03 / 29 / 04

OPT:
ITEM: 39
LBL: 5A (L)T0:1750

(1P) SN74LS07NSR
(Q) 2000 (D) 0336
(31T) LOT: 3959047MLA
(4W) TKY (1T) 7523483SI2
(P)
(2P) REV: (V) 0033317
(20) CSO: SHE (2) CCO: USA
(22L) ASO: MLA (23L) ACO: MYS

Product Affected:

LP87514BRNFRQ1	LP87524BRNFTQ1	LP875613RNFRQ1	LP87563JRNFTQ1
LP87514BRNFTQ1	LP87524FRNFRQ1	LP875613RNFTQ1	LP87563LRNFRQ1
LP87521CRNFRQ1	LP87524IRNFRQ1	LP87561FRNFRQ1	LP87563LRNFTQ1
LP87521ERNFRQ1	LP87524IRNFTQ1	LP87561IRNFRQ1	LP87563QRNFRQ1
LP87521ERNFTQ1	LP87524JRNFRQ1	LP87561IRNFTQ1	LP87563QRNFTQ1
LP87521FRNFRQ1	LP87524JRNFTQ1	LP87561SRNFRQ1	LP875640RNFRQ1
LP87521FRNFTQ1	LP87524PRNFRQ1	LP87561SRNFTQ1	LP875640RNFTQ1
LP87521PRNFRQ1	LP87524PRNFTQ1	LP87561TRNFRQ1	LP87564ARNFRQ1
LP87521PRNFTQ1	LP87524RRNFRQ1	LP87561TRNFTQ1	LP87564JRNFRQ1
LP87522BRNFRQ1	LP87524RRNFTQ1	LP87561VRNFRQ1	LP87564JRNFTQ1
LP87522BRNFTQ1	LP87524TRNFRQ1	LP87561VRNFTQ1	LP87564LRNFRQ1
LP87523JRNFRQ1	LP87524TRNFTQ1	LP87561WRNFRQ1	LP87564LRNFTQ1
LP87523JRNFTQ1	LP87524URNFRQ1	LP87561WRNFTQ1	LP87564MRNFRQ1
LP87523LRNFRQ1	LP87524URNFTQ1	LP875620RNFRQ1	LP87564MRNFTQ1
LP87523LRNFTQ1	LP87524YRNFRQ1	LP875620RNFTQ1	LP87564QRNFRQ1
LP87523NRNFRQ1	LP87524YRNFTQ1	LP87562ERNFRQ1	LP87564QRNFTQ1
LP87523NRNFTQ1	LP87524ZRNFRQ1	LP87562ERNFTQ1	LP875650RNFRQ1
LP87523SRNFRQ1	LP87524ZRNFTQ1	LP87562HRNFRQ1	LP875650RNFTQ1
LP87523SRNFTQ1	LP87525ARNFRQ1	LP87562HRNFTQ1	LP87565CRNFRQ1
LP875240GRNFRQ1	LP87525BRNFRQ1	LP87562KRNFRQ1	LP87565CRNFTQ1
LP875240GRNFTQ1	LP87525BRNFTQ1	LP87562KRNFTQ1	LP875701ARNFRQ1
LP875240JRNFRQ1	LP87525JRNFRQ1	LP87562MRNFRQ1	LP875701ARNFTQ1
LP875240JRNFTQ1	LP87525JRNFTQ1	LP87562MRNFTQ1	LP875701BRNFRQ1
LP875240QRNFRQ1	LP87525KRNFRQ1	LP87562PRNFRQ1	LP875701BRNFTQ1
LP875240QRNFTQ1	LP87525KRNFTQ1	LP87562PRNFTQ1	LP875701CRNFRQ1
LP875240URNFRQ1	LP87525LRNFRQ1	LP875630RNFRQ1	LP875701CRNFTQ1
LP875240URNFTQ1	LP87525LRNFTQ1	LP875630RNFTQ1	LP875701DRNFRQ1
LP87524ARNFRQ1	LP875610RNFRQ1	LP87563ARNFRQ1	LP875701DRNFTQ1
LP87524BRNFRQ1	LP875610RNFTQ1	LP87563JRNFRQ1	

**Automotive New Product Qualification Summary
(As per AEC-Q100 and JEDEC Guidelines)**

Approved 20-Apr-2020

Product Attributes

Attributes	Qual Device: <u>LP8756QRNFRO1</u>	QBS Product Reference: <u>LP8756QRNFRO1</u>	QBS Process Reference: <u>LP87702ARHBRO1</u>
Automotive Grade Level	Grade 1	Grade 1	Grade 1
Operating Temp Range	-40 to +125 C	-40 to +125 C	-40 to +125 C
Product Function	Power Management	Power Management	Power Management
Wafer Fab Supplier	DMOS6	DMOS5	DMOS6
Wafer Process Technology	LBC8	LBC8	LBC8
Assembly Site	UTAC-THAILAND	UTAC-THAILAND	UTAC-THAILAND
Package Type	QFN (FCOL)	QFN (FCOL)	QFN
Package Designator	RNF	RNF	RHB
Ball/Lead Count	26	26	32

- QBS: Qual By Similarity

- Qual Device LP8756QRNFRO1 is qualified at LEVEL2-260C

Qualification Results

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

Typ	#	Test Spec	Min Lot Qty	SS/Lot	Test Name / Condition	Duration	Qual Device: <u>LP8756QRNFRO1</u>	QBS Product Reference: <u>LP8756QRNFRO1</u>	QBS Process Reference: <u>LP87702ARHBRO1</u>
Test Group A – Accelerated Environment Stress Tests									
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Automotive Preconditioning	Level 1-260C	3/Pass	3/Pass	-
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Automotive Preconditioning	Level 2-260C	-	-	3/Pass
HAST	A2	JEDEC JESD22-A110	3	77	Biased HAST, 130C/85%RH	96 Hours	1/77/0	3/231/0	3/231/0
AC	A3	JEDEC JESD22-A102	3	77	Autoclave 121C	96 Hours	1/77/0	-	3/231/0

	T C	A 4	JEDEC JESD22-A104 and Appendix 3	3	77	Temperature Cycle, - 65/150C	500 Cycles	3/231/0	3/231/0	3/231/0
	PT C	A 5	JEDEC JESD22-A105	1	45	Power Temperature Cycle	1000 Cycles	1/45/0	1/44/0	1/45/0
	H T S L	A 6	JEDEC JESD22-A103	1	45	High Temp Storage Bake 150C	1000 Hours	-	1/45/0	-
	H T S L	A 6	JEDEC JESD22-A103	1	45	High Temp Storage Bake 175C	500 Hours	1/45/0	-	3/135/0
Test Group B – Accelerated Lifetime Simulation Tests										
	H T O L	B 1	JEDEC JESD22-A108	3	77	Life Test, 125C	1000 Hours	1/77/0	-	3/231/0
	H T O L	B 1	JEDEC JESD22-A108	3	77	Life Test, 150C	1000 Hours	-	3/231/0	-
	EL FR	B 2	AEC Q100- 008	3	800	Early Life Failure Rate, 125C	48 Hours	-	-	3/2400/0
	EL FR	B 2	AEC Q100- 008	3	800	Early Life Failure Rate, 150C	48 Hours	-	1/800/0	-
	E D R	B 3	AEC Q100- 005	3	77	NVM Endurance, Data Retention, and Operational Life	-	-	-	-
Test Group C – Package Assembly Integrity Tests										
	W BS	C 1	AEC Q100- 001	3	30 bon ds, 5 dev ices	Wire Bond Shear	Cpk>1.67	NA	NA	3/15/0
	W BP	C 2	MIL-STD883 Method 2011	3	30 bon ds, 5 dev ices	Wire Bond Pull	Cpk>1.67	NA	NA	3/15/0
	S D	C 3	JEDEC JESD22-B102	1	15	Surface Mount Solderability	Steam Age	-	1/15/0	-
	S D	C 3	JEDEC JESD22-B102	1	15	Surface Mount Solderability	Pb Free	-	-	1/15/0
	P D	C 4	JEDEC JESD22-B100 and B108	3	10	Physical Dimensions	Cpk>1.67	-	3/30/0	3/30/0
Test Group D – Die Fabrication Reliability Tests										
	E M	D 1	JESD61	-	-	Electromigration	-	Completed Per Process Technolog y Requireme nts	-	-

T D D B	D 2	JESD35	-	-	Time Dependant Dielectric Breakdown	-	Completed Per Process Technology Requirements	-	-
H C I	D 3	JESD60 & 28	-	-	Hot Injection Carrier	-	Completed Per Process Technology Requirements	-	-
N B T I	D 4	-	-	-	Negative Bias Temperature Instability	-	Completed Per Process Technology Requirements	-	-
S M	D 5	-	-	-	Stress Migration	-	Completed Per Process Technology Requirements	-	-
Test Group E – Electrical Verification Tests									
H B M	E 2	AEC Q100-002	1	3	ESD - HBM - Q100	2500V	1/3/0	1/3/0	1/3/0
C D M	E 3	AEC Q100-011	1	3	ESD - CDM - Q100	750V	1/3/0	1/3/0	1/3/0
L U	E 4	AEC Q100-004	1	6	Latch-up	(Per AEC-Q100-004)	1/6/0	1/6/0	1/6/0
E D	E 5	AEC Q100-009	3	30	Auto Electrical Distributions	Cpk>1.67 Room, hot, and cold test	3/90/0	3/90/0	3/90/0

A1 (PC): Preconditioning:

Performed for THB, Biased HAST, AC, uHAST, TC & PTC samples, as applicable.

Ambient Operating Temperature by Automotive Grade Level:

Grade 0 (or E): -40°C to +150°C

Grade 1 (or Q): -40°C to +125°C

Grade 2 (or T): -40°C to +105°C

Grade 3 (or I) : -40°C to +85°C

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

Green/Pb-free Status:

Qualified Pb-Free(SMT) and Green

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