PCN Number:			20)121	1022000)A			PCN Date:	07/30/2015			
Title	:	Qualification Package	of⊺	LI CI	ark as A	Additional Ass	embly/Test	Site	for Select Devi	ices on the SON			
Cust	omer	Contact:	PC	N Ma	anager	Dept:	Quality	/ Se	rvices				
Char	nge T	ype:											
\boxtimes	Asse	Assembly Site						\square	Assembly Mat				
	Desi					cal Specificati			Mechanical Sp	ecification			
	Test					g/Shipping/La			Test Process				
		er Bump Site				Bump Materia			Wafer Bump F				
	Wafe	er Fab Site			Wafer	Fab Materials			Wafer Fab Pro	Cess			
Doce	rinti	on of Change				PCN Det	alis						
		on of Change			lovicos i	n the Product	Affected Sc		n (with striketh	rough) and			
Revision A is to remove select devices in the Product Affected Section (with strikethrough) and highlighted in yellow. These devices will continue to be assembled at the current Assembly/Test site. Qualification of TI Clark as Additional Assembly/Test Site for Select Devices on the SON Package. Assembly differences are shown in the following table:													
						NSE			TI Clark	(
		Wire			1	.0 , 1.30 Mil /	Δ		0.96, 1.30 M				
		wite				.0,1.50 Mil/	Ru		0.90, 1.30 M				
	The device in the product affected list is being qualified by similarity (see Qualification Data). Test coverage, insertions, conditions will remain consistent with current testing and verified with												
test l		5 /							5				
Reas	on fo	or Change:											
1) T e 2) M	 Continuity of supply. 1) To align with world technology trends and use wiring with enhanced mechanical and electrical properties 2) Maximize flexibility within our Assembly/Test production sites. 3) Cu is easier to obtain and stock 												
Anticipated impact on				rm,	Fit, Fu	nction, Qual	ity or Relia	bili	ty (positive /	negative):			
None													
Char	aes	to product id	ent	tific	ation re	esulting from	n this PCN:						
-	-	y Site											
	E Tha				Ass	sembly Site O	rigin (22L)		ASO: I	NSE			
TI Clark Philippines					Assembly Site Origin (22L)				ASO: QAB				
MAD 2DC MSL MSL OPT ITE LB	TI Clark Philippines Assembly Site Origin (22L) ASO: QAB INSTRUMENTS Image: Assembly Site Origin (22L) ASO: QAB MADE IN: Malaysia Image: Assembly Site Origin (22L) (1P) SN74LS07NSR MSL '2 /2600C/1 YEAR SEAL DT Image: Assembly Site Origin (22L) (a) 2000 (D) 0336 MSL '2 /2600C/1 YEAR SEAL DT Image: Assembly Site Origin (22L) (a) 2000 (D) 0336 OPT: 39 Image: Assembly Site Origin (22L) (b) 033512 ITEM: 39 Image: Assembly Site Origin (22L) (c) 033317 IBL: 5A (L)T0:1750 Image: Assembly Site Origin (22L) (c) 0033317 Sample product shipping label (not actual product label) Assembly SITE CODES: NSE = J, TI-Clark = I												

Product Affected:								
HPA00489DRVR TI	PS715A33DI	RVR	TPS7	3701DRVR	TPS799	D18DRVR		
HPA01044DRVR TI	PS715A33DI	RVRG4	TPS73701DRVT		TPS79918DRVRG4			
TPS3808G01DRVR TI	PS715A33DI	RVT	TPS78	3218DRVR	TPS799)18DRVT		
TPS3808G01DRVRG4 TI	PS715A33DI	RVTG4	TPS78	3218DRVT	TPS799)18DRVTG4		
TPS3808G01DRVT TI	PS72012DR	VR	TPS78	3230DRVR	TPS799)195DRVR		
TPS3808G01DRVTG4 T	PS72012DR	νT	TPS78	3230DRVT	TPS799	0195DRVRG4		
TPS3808G25DRVR TI	PS72833018	5DRVR	TPS79)901DRVR	TPS799)195DRVT		
TPS3808G25DRVRG4 TI	PS72833018	35DRVT	TPS79)901DRVRG4	TPS799)195DRVTG4		
TPS3808G25DRVT TI	PS73533DR	V R	TPS79	901DRVT				
TPS3808G25DRVTG4 TI	PS73533DR	νT	TPS79	901DRVTG4				
		Qualifi	catio	n Data				
This qualification has been specifically developed for the validation of this change. The qualification data validates that the proposed change meets the applicable released technical specifications.								
Q	ual Vehicle	: TPS38	808G2	5DRV (MSL2-26	0C)			
	Pacl	kage Cor	struc	ion Details				
Assembly Si	ite: Clark-A	Г	Mold Compoun		pound:	4208625		
# Pins-Designator, Fam	ily: 6-DRV,	WSON Mount Comp		pound:	4207768			
Lead Finish, Ba	ase NiPdAu,	Cu	Cu Bond V			Wire: 0.96 Mil Dia. Cu		
Qualification: 🗌 Plan	🛛 🛛 Test	Results						
Reliability Test		Conditior	าร		9	Sample Size / Fail		
Manufacturability Qualification	n (MQ)	-				1/0		
**Biased HAST	130C/85	5%RH (96 Hrs)		77/0				
ESD CDM	200V, 50	500V		3/0				
ESD HBM	500V, 10	V000			3/0			
Latch-up, High Temp 100 mA and 1.5 x Vmax @ max Tj 6/0								
**- Preconditioning sequence: Level 2-260C.								
**- Preconditioning sequence: Level 2-260C.								

Reference Qualification: SON Package at TI-Clark

Qualification Data: Approved 09/19/2012

This qualification has been specifically developed for the validation of this change. The qualification data validates that the proposed change meets the applicable released technical specifications.

Qual Vehicle 1 : TPS61165DRV (MSL 2-260C)								
Package Construction Details								
Assembly Site: TI Clark			Mold Compo		ound:	4208625		
# Pins-Designator, Family:	6-DRV, WSO	N		Mount Comp	ound:	4207768		
Leadframe (Finish, Base):	NiPdAu			Bond	Wire:	0.96 Mil Dia., Cu		
Qualification: 🗌 Plan	Test Res	ults						
Reliability Test	Conditions			Sample Size / Fail				
Manufacturability Qualification (N	-			Pass				
Moisture Sensitivity	Moisture Sensitivity			5/-0C	12/0			
Qua	I Vehicle 2 :	BQ25	5046	DQC (MSL 2-260	C)			
	Package	e Cons	truc	tion Details				
Assembly Site: T	I Clark		Mold Compound:		4208625			
# Pins-Designator, Family: 1	# Pins-Designator, Family: 10-DQC, WSON			Mount Compound:		768		
Leadframe (Finish, Base): NiPdAu			Bond Wire:		1.3 Mil Dia., Cu			
Qualification: 🗌 Plan 🛛 Test Results								
Reliability Test	Condi	onditions Sample Size / Fai			Sample Size / Fail			

Manufacturability Qualification	(MQ)				Pass				
Moisture Sensitivity		L2-260C +5/-0C 15/0							
Q	ual Vehicle 3	: BQ2	27500DRZ (MSL 2-260	C)					
	Package	e Con	struction Details						
Assembly Site:	TI Clark		Mold Compound:	4208625	5				
# Pins-Designator, Family:	12-DRZ, VSON		Mount Compound:	4207768	3				
Leadframe (Finish, Base):	NiPdAu		Bond Wire:	0.96 Mil	Dia., Au				
Qualification: Plan	🛛 🛛 Test Res	ults							
Reliability Test		Cond	ditions	San	nple Size /	Fail			
Manufacturability Qualification	(MO)				Pass				
Moisture Sensitivity	(1.1.4)	L2-2	60C +5/-0C		15/0				
	ual Vehicle 4		9000DRW (MSL 2-260	C)					
			•	•					
Assembly Site:	TI Clark		struction Details Mold Compound:	4208625					
# Pins-Designator, Family:	6-DRW, VSON		Mount Compound:	4208623					
Leadframe (Finish, Base):	NiPdAu		Bond Wire:	0.96 Mil					
Qualification: Plan		ulte	bonu wire:	0.90 MI	Dia., Au				
-				-		F - 11			
Reliability Test		Cond	litions	San	nple Size /	rall			
Manufacturability Qualification	(MQ)			Pass					
Moisture Sensitivity			60C +5/-0C		15/0				
Qı	ual Vehicle 5 :	TLV	70028DSE (MSL 1-260	C)					
	Package	e Con	struction Details						
Assembly Site: TI Clark			Mold Compound:	4208625					
# Pins-Designator, Family: 6-DSE, WSON			Mount Compound:	4207768					
Leadframe (Finish, Base):	NiPdAu		Bond Wire:	0.80 Mil Dia., Au					
Qualification: 🗌 Plan	🛛 🛛 Test Res	ults							
Reliability Test			litions	Sample Size / Fail					
Reliability Test				Lot 1	Lot 2	Lot 3			
Salt Atmosphere		24 H	rs	22/0	22/0	22/0			
**High Temp Storage Bake		1700	C (420 Hrs)	77/0	77/0	77/0			
**Autoclave			C, 2 atm (96 Hrs)	77/0	77/0	77/0			
**Temp Cycle, -65C/150C			Cycles	77/0	77/0	77/0			
Surface Mount Solderability		Pb F		22/0	22/0	22/0			
Surface Mount Solderability		Non-	-Pb Free	22/0	22/0	22/0			
Manufacturability Qualification	(MQ)	-		Pass	Pass	Pass			
Moisture Sensitivity		L1-2	60C +5/-0C	12/0	12/0	12/0			
**- Preconditioning sequence:		7000		2600					
Qual V			8DSE- Cu Wire (MSL 1	-260C)					
Accombly Cito		e con	struction Details	4200625	-				
Assembly Site:	TI Clark	Mold Compound:		4208625					
# Pins-Designator, Family: 6-DSE, WSON			Mount Compound:	4207768 0.80 Mil Dia., Cu					
Leadframe (Finish, Base): Qualification: Plan		ulto	Bond Wire:	0.80 MII	Dia., Cu				
Qualification: Plan	🛛 Test Res	uits		C	nnla Siza /	Fail			
Reliability Test		Cond	litions	Sample Size / Fail					
Calt Atmoorbara		24.1		Lot 1	Lot 2	Lot 3			
Salt Atmosphere		24 H		22/0	22/0	22/0			
**High Temp Storage Bake **Autoclave			C (420 Hrs) C, 2 atm (96 Hrs)	77/0 77/0	77/0 77/0	77/0 77/0			
				////	. ///!!	. ////			

					1			
Surface Mount Solderability		Pb F		22/0	22/0	22/0		
Surface Mount Solderability		Non-	Pb Free	22/0	22/0	22/0		
Manufacturability Qualification	n (MQ)	-		Pass	Pass	Pass		
Moisture Sensitivity		L1-2	60C +5/-0C	12/0	12/0	12/0		
**- Preconditioning sequence	: Level 1-260C.							
	-		61161DRV (MSL 2-260C)					
Package Construction Details								
Assembly Site:	TI Clark		Mold Compound:	4208625	5			
# Pins-Designator, Family:	6-DRV, WSON		Mount Compound:	4207768	3			
Leadframe (Finish, Base):	NiPdAu		Bond Wire:	1.31 Mil	Dia., Au			
Qualification: 🗌 Plan 🛛 Test Results								
Deliability Teet		Con	litiono	San	nple Size /	Fail		
Reliability Test		Cond	litions	Lot 1	Lot 2	Lot 3		
Salt Atmosphere		24 H	rs	22/0	22/0	22/0		
**High Temp Storage Bake		1700	C (420 Hrs)	77/0	77/0	77/0		
**Autoclave			C, 2 atm (96 Hrs)	77/0	77/0	77/0		
**Temp Cycle, -65C/150C			Cycles	77/0	77/0	77/0		
Surface Mount Solderability		Pb F	,	22/0	22/0	22/0		
Surface Mount Solderability		Non-	Pb Free	22/0	22/0	22/0		
Manufacturability Qualification	n (MQ)	-		Pass	Pass	Pass		
Moisture Sensitivity		L2-2	60C +5/-0C	12/0	12/0	12/0		
**- Preconditioning sequence	: Level 2-260C.		·					
		: TPS	62750DSK (MSL 1-260C)					
			struction Details					
Assembly Site:	TI Clark		Mold Compound:	4208625				
# Pins-Designator, Family: 10-DSK, WSON			Mount Compound:	4207768				
Leadframe (Finish, Base):	NiPdAu		Bond Wire:	1.31 Mil				
Qualification: Plan I Test Results								
				Sample Size / Fail				
Reliability Test		Cond	litions	Lot 1 Lot 2 Lot 3				
Salt Atmosphere		24 H	rs	22/0	22/0	22/0		
**High Temp Storage Bake			C (420 Hrs)	77/0	77/0	77/0		
**Autoclave			C, 2 atm (96 Hrs)	77/0	77/0	77/0		
**Temp Cycle, -65C/150C		1	Cycles	77/0	77/0	77/0		
Surface Mount Solderability		Pb F		22/0	22/0	22/0		
Surface Mount Solderability			·Pb Free	22/0	22/0	22/0		
Manufacturability Qualification	(MO)	-		Pass	Pass	Pass		
Moisture Sensitivity	· (· · · · /	1_7	60C +5/-0C	12/0	12/0	12/0		
**- Preconditioning sequence	: Level 1-260C	_ <u></u>		/ 0	-2/0	12/0		
		: TPS	62750DSK (MSL 1-260C)					
	-		struction Details					
Assembly Site:	TI Clark		Mold Compound:	4208625				
# Pins-Designator, Family: 10-DSK, WSON			Mount Compound:	4208025				
Leadframe (Finish, Base): NiPdAu			Bond Wire:	1.31 Mil Dia., Au				
Qualification: Plan		ults	Bond wife.					
Reliability Test			litions					
•				Sample Size / Fail				
**High Temp Storage Bake			C (420 Hrs)	77/0				
**Autoclave			C, 2 atm (96 Hrs)	77/0				
**Temp Cycle, -65C/150C	(MO)	500	Cycles	77/0				
Manufacturability Qualification	i (MQ)	-			Pass			
Moisture Sensitivity		LT-7	60C +5/-0C	12/0				

**- Preconditioning sequence: Le	vel 1-260C.								
Qual	Vehicle 10	: TPS7	'99L57	7YZY (MSL1-260)C)				
	Packag	e Cons	<u>structi</u>	on Details					
Assembly Site:	Clark-AT		Bump compos			sition: SnAgCu			
# Pins-Designator, Family:	5-YZY, WCS	SP		Bump	diam: 0.23mm				
Qualification: 🗌 Plan 🛛	🛛 Test Res	sults							
Reliability Test		Conditions			Sample Size / Fail				
Reliability Test					Lot 1			Lot 2	
Manufacturability Qualification (M	Q) -				1	./0		-	
Electrical Characterization	Ov	er Temp	C		3	0/0		-	
**High Temp Storage Bake	17	0C (420	Hrs)		8	0/0		80/0	
**Biased HAST	13	0C/85%	RH (96	Hrs)	8	0/0		-	
**Unbiased HAST	13	0C/85%	RH (96	Hrs)	8	0/0		80/0	
ESD CDM	20	0V, 500	V		3/0				
ESD HBM	50	0V, 1000V, 1500V, 2000V			3/0		3/0	0	
High Temp Op Life Test	15	0C/300 Hrs			80/0			79/0	
**Temp Cycle, -55C/125C	000 Cycles			80/0			80/0		
Latch-up, High Temp	00 mA and 1.5 x Vmax @ max Tj			6/0					
**- Preconditioning sequence: Le									
Qua				DSK (MSL 2-260C)				
		ge Cons	structio	on Details	1				
	Clark	Mold Compound:			4208	625			
	DRV, WSON		Mount Compound:						
	PdAu		Bond Wire: 1.31 Mil Dia.,			., Au			
Qualification: 🗌 Plan [🛛 Test Res	sults							
Reliability Test		Conditions			Sample Size			e / Fail	
					Lot 1	. L	ot 2	Lot 3	
Salt Atmosphere		24 Hrs			22/0		22/0	22/0	
**High Temp Storage Bake		170C (420 Hrs)			77/0		77/0	77/0	
**Autoclave		121C, 2 atm (96 Hrs)			77/0		77/0	77/0	
**Temp Cycle, -65C/150C		500 Cycles			77/0		77/0	77/0	
Surface Mount Solderability		Pb Free			22/0		22/0	22/0	
Surface Mount Solderability		Non-Pb Free			22/0) 2	22/0	22/0	
Manufacturability Qualification (M	Q)	-			Pass	; F	Pass	Pass	
Moisture Sensitivity		L2-26	50C +5/	′-0C	12/0)]	12/0	12/0	
**- Preconditioning sequence: Le	vel 1-260C.								

For questions regarding this notice, e-mails can be sent to the regional contacts shown below or your local Field Sales Representative.

Location	E-Mail
USA	PCNAmericasContact@list.ti.com
Europe	PCNEuropeContact@list.ti.com
Asia Pacific	PCNAsiaContact@list.ti.com
Japan	PCNJapanContact@list.ti.com