FUN	Number:	202	201216	5000	.2			F	PCN E	Date:	Jan. 15, 2020	
Titl	e: Qualify	New	Assen	nbly I	Mater	ial set fo	r Selected	Device	(s)			
Cus	tomer Cont		PCN /	<u> </u>		Dept:		lity Se	``			
						· · · · · ·		timate			Date provided a	t
Proposed 1 st Ship Date: July				/ 15,	15, 2021			ailab		sample request		
Cha	ange Type:											
	Assembly Si	te				Design				Wafe	r Bump Site	
	Assembly Pr	Process 🗌 Data Sheet 🗌 Wafer Bump Materi										
\square	Assembly Materials				Part number change					r Bump Process		
Ц	Mechanical Specifi						est Site			Wafer Fab Site		
	Packing/Shipping/Labeling				Test Pro	ocess			Wafer Fab Materials			
									Wafer Fab Process			
						PCN	Details					
	scription of											
liste		: affeo	cted" s	ectio							r material for dev sembly facility an	
		Mate					urrent				posed	
	Mount co						42500				47858	
	Mold com		d				205694				11880	
	Leadfram						oughened		Roug		d (single side)	
	Leadfram					10mils			6mils			
	Note: Lea	atran	$n \cap \pi n i c$	viznac								
				KIIES	s app	licable to	wide body	/ SOIC	(DW)	aevic	e only	
Rea	son for Cha			.KIIES	s app	dicable to	wide body	/ SOIC	(DW)	device	e only	
		nge:		.KIIES	s app	dicable to	wide body	SOIC	(DW)	devic		
Con	ason for Cha tinuity of sup	nge: oply									itive / negative	e):
Con Ant	ason for Cha tinuity of sup cicipated imp	nge: oply									·	e):
Con Ant Non	ason for Cha itinuity of sup icipated im ne	nge: oply pact o	on Fo	rm, F	Fit, F	unction,	Quality o				·	e):
Con Ant Non	ason for Cha tinuity of sup icipated im e icipated im	pply pact o	on Fo	rm, F	Fit, Fi	unction, claration	Quality o	r Relia	bility	/ (pos	itive / negative	e):
Con Ant Non	ason for Cha itinuity of sup icipated im ne	pply pact of pact of to the	on For on Ma	rm, f	Fit, Fit, Fit, Fit, Fit, Fit, Fit, Fit,	unction, claration rial Decla production uction rel ts can be	Quality o Quality o Intrations or Ion data and ease. Upo e obtained	r Relia Produc d will b n produ at the s	bility t Cont e ava uction site lii	/ (pos tent re ilable releas nk belo	ports are driven following the se the revised	2):
Con Ant Non Ant	ason for Cha tinuity of sup icipated imp e icipated imp No Impact	pact of the clarat	on For on Ma : ion	rm, f	Fit, Fit al De Mate from produ repor http:	unction, claration rial Decla production uction rel ts can be //www.ti	Quality o	r Relia Produc d will b n produ at the s	t Coni e ava uction site lin	/ (pos tent re ilable releas nk belo	ports are driven following the se the revised	2):
Con Ant Non Ant	ason for Cha tinuity of sup icipated im ie icipated im No Impact of Material De	pact of the clarat	on For on Ma : ion	rm, f	Fit, Fit al De Mate from produ repor http:	unction, claration rial Decla production uction rel ts can be //www.ti	Quality o	r Relia Produc d will b n produ at the s	t Coni e ava uction site lin	/ (pos tent re ilable releas nk belo	ports are driven following the se the revised	•):
Con Ant Non Ant Cha Non	ason for Cha tinuity of sup icipated im ie icipated im Material De anges to pro	pact of the clarat	on For on Ma : ion	rm, f	Fit, Fit al De Mate from produ repor http:	unction, claration rial Decla production uction rel ts can be //www.ti	Quality o	r Relia Produc d will b n produ at the s	t Coni e ava uction site lin	/ (pos tent re ilable releas nk belo	ports are driven following the se the revised	2):
Con Ant Non Ant Cha Non Pro	ason for Cha itinuity of sup icipated imple icipated imple icipated imple icipated imple No Impact of Material De inges to propose	pact of the clarat	on For on Ma ion	rm, F	Fit, Fit al Dec Mate from produ repor http: tion	unction, claration rial Decla production uction rel ts can be //www.ti	Quality o Quality o In a contract of the second contract of the seco	r Relia Produc d will b n produ at the ty/docs s PCN:	t Con e ava uction site lin /mate	/ (pos tent re ilable n relea: nk belo erialco	eports are driven following the se the revised ow ntentsearch.tsp	e):
Con Ant Non Ant Cha Non Pro	ason for Cha tinuity of sup icipated im ie icipated im No Impact of Material De inges to pro ie inges to pro ie inges to pro	pact of pact of to the clarat	on For on Ma iion ident	rm, f	Fit, Fit, Fit, Fit, Fit, Fit, Fit, Fit,	unction, claration rial Decla production uction rel ts can be //www.ti resulting	Quality o Quality o Intrations or on data and ease. Upo e obtained com/qualit g from this V62/0360	r Relia Produc d will b n produc at the s ty/docs s PCN:	t Coni e ava uction site lin /mate	/ (pos tent re ilable releas nk belo erialco	ports are driven following the se the revised ow ntentsearch.tsp	æ):
Con Ant Non Ant Cha Non CD CD	ason for Cha itinuity of sup icipated imp ie icipated imp ie icipated imp in Material De in Material De	pact of pact of to the clarat	on For on Ma ion ident	ifica	Fit, Fit al Dea Mate from produ repor http: tion CT244 CT541	unction, claration rial Decla production uction rel ts can be //www.ti resulting	Quality o	r Relia Produc d will b n produ at the s ty/docs s PCN: 07-02XE	t Cont e ava uction site lin c/mate	tent re ilable releas nk belo erialco	ports are driven following the se the revised ow ntentsearch.tsp 2/04665-01XE 2/04666-01XE	e):
Con Ant Non Ant Cha Non CD CD CD MP	ason for Cha itinuity of sup icipated imple icipated icipated imple icipated icipated i	pact of the clarat	on For on Ma ident	rm, F	Fit, Fit al Dec Mate from produ repor http: tion CT244 CT244 CT244	unction, claration rial Decla production uction rel ts can be //www.ti resulting MDWREP IDWREP	Quality o Quality o Prations or prations or con data and ease. Upo e obtained com/qualit from this V62/0364 V62/0364 V62/0365	r Relia Produc d will b n produc at the s ty/docs s PCN: s PCN: 07-02XE 9-01YE	t Cont e ava uction site lin /mate	/ (pos tent re ilable n releas nk belo erialco	ports are driven following the se the revised ow ntentsearch.tsp 2/04665-01XE 2/04666-01XE 2/04739-01XE	2):
Con Ant Non Ant Cha Non CD CD CD CD SN	Ason for Cha tinuity of sup icipated im ie icipated im Material De Material De Material De Material De Material De Material De Material De Material De Material De Material De	pact of pact of pact of to the clarat	on For on Ma ident	rm, f	Fit, Fit, Fit, Fit, Fit, Fit, Fit, Fit,	unction, claration rial Decla production rel ts can be //www.ti resulting IDWREP IDWREP	Quality o Purations or pon data and ease. Upo e obtained com/qualit g from this V62/0360 V62/0365 V62/0365	r Relia Produc d will b n produc at the s ty/docs s PCN: 07-02XE 9-01YE 50-01YE 57-01YE	t Content of the second	/ (pos tent re ilable i releas nk belo erialco	ports are driven following the se the revised ow ntentsearch.tsp 2/04665-01XE 2/04666-01XE 2/04739-01XE	>):
Con Ant Non Ant Cha Non CD CD CD SN SN	ason for Cha itinuity of sup icipated im ie icipated im Material De Material De duct Affecte 74ACT86MDRE 74ACT86MDRE 74AC244MDW 74AC245IDWR	pact of pact of to the clarat duct	on For on Ma e iion ident	rm, F	Fit, Fit al De Mate from produ repor http: tion CT244 CT541 T760M 244MI 244QI	unction, claration rial Decla production uction rel ts can be //www.ti resulting IDWREP IDWREP DWREP	Quality o	r Relia	t Cont e ava uction site lin /mate	/ (pos tent re ilable releas nk belo erialco V62 V62 V62 V62	ports are driven following the se the revised ow ntentsearch.tsp 2/04665-01XE 2/04666-01XE 2/04760-01XE 2/04760-01XE	2):
Con Ant Non Ant Cha Non CD CD CD MP SN SN SN	ason for Cha itinuity of sup icipated im ie icipated im No Impact of Material De Material De of the indect Affecte indect Affe	oply pact of to the clarat duct ed: P 96EP REP REP	on For on Ma ident	rm, F	Fit, Fit Mate from produ repor http: tion CT244 CT541 T760M 244MI 244QI L4AMI	unction, claration rial Decla production uction rel ts can be //www.ti resulting IDWREP IDWREP DWREP DWREP DWREP DWREP	Quality o Purations or pon data and ease. Upo e obtained com/qualit g from this V62/0364 V62/0365 V62/0365 V62/0366 V62/0366 V62/0366	r Relia	t Con e ava uction site lin /mate	v (pos tent re ilable releas nk belo erialco V62 V62 V62 V62 V62	ports are driven following the se the revised ow ntentsearch.tsp 2/04665-01XE 2/04666-01XE 2/04739-01XE 2/04760-01XE 2/04761-01XE 2/06604-01XE	2):
Con Ant Non Ant Cha Non CD CD CD CD CD SN SN SN SN	ason for Cha tinuity of sup icipated im ie icipated im No Impact of Material De Material De of the inges to pro ie inges inges ing	ply pact of pact of co the clarat duct ed: 	on For on Ma iion iident	rm, f	Fit, Fit Mate from produ repor http: tion CT244 CT541 T760M 244ME 244QE	unction, claration rial Decla production uction rel ts can be //www.ti resulting ind ind ind ind ind ind ind ind ind ind	Quality o P P P P P P P P P P P P P P P P P P	r Relia	t Cont e ava uction site lin /mate	/ (pos tent re ilable i releas nk belo erialco V62 V62 V62 V62 V62 V62	itive / negative	2):
Con Ant Non Ant Cha Non CD CD CD CD CD SN SN SN SN SN	ason for Cha tinuity of sup icipated imple icipated icipated icipated icipated icipated icipated icipated	oply pact of contract contract contract contract duct duct ed: EP REP REP REP (REP (REP (REP) (REP)	ident	rm, f	Fit, Fit, Fit, Fit, Fit, Fit, Fit, Fit,	unction, claration rial Decla production uction rel ts can be //www.ti resulting ind ind ind ind ind ind ind ind ind ind	Quality o Parations or lon data and ease. Upo e obtained com/qualit g from this V62/0360 V62/0365 V62/0365 V62/0365 V62/0365 V62/0461 V62/0462 V62/0462	r Relia	t Coni e ava uction site lin /mate	/ (pos tent re ilable i releas nk belo erialco V62 V62 V62 V62 V62 V62	ports are driven following the se the revised ow ntentsearch.tsp 2/04665-01XE 2/04666-01XE 2/04739-01XE 2/04760-01XE 2/04761-01XE 2/06604-01XE	2):
Con Ant Non Ant Cha Non Pro CD CD CD CD CD SN SN SN SN SN	ason for Cha tinuity of sup icipated im ie icipated im No Impact of Material De Material De of the inges to pro ie inges inges ing	ange: pply pact of to the clarat duct ed: P 96EP REP REP REP REP VREP VREP	on For on Ma e iion ident SN SN SN SN SN SN SN SN	rm, F	Fit, Fit Mate from produ repor http: tion CT244 CT541 CT541 CT541 CT541 CT541 CT541 CT541 CT541 CT541 CT541 CT541 CT541 CT541 CT541 CT541 CT541 CT540 CT244 CT540 CT244 CT540 CT244 CT540 CT244 CT540 CT244 CT540 CT244 CT540 CT244 CT540 CT244 CT540 CT244 CT540 CT244 CT541 CT540 CT244 CT540 CT244 CT541 CT541 CT540 CT244 CT541 CT541 CT540 CT244 CT541 CT541 CT541 CT540 CT244 CT541 CT541 CT541 CT541 CT541 CT540 CT244 CT541 CT540 CT541 CT540 CT544 CT541 CT541 CT540	unction, claration rial Decla production uction rel ts can be //www.ti resulting ind ind ind ind ind ind ind ind ind ind	Quality o P P P P P P P P P P P P P P P P P P	r Relia	t Coni e ava uction site lin /mate	/ (pos tent re ilable i releas nk belo erialco V62 V62 V62 V62 V62 V62	itive / negative	2):



Qualification Report

Approved 11/19/2020

Qualification Results

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

Туре	Test Name / Condition	Duratio n	Qual Device: <u>SN74HC244MDWREP</u>	QBS Package Reference: <u>1M16374QDLREP</u>	QBS Package Reference: <u>1R16214CDL</u>	QBS Package Reference: <u>SN75976A1DL</u>	QBS Package Reference: <u>ULN2003ADR</u>
MSL	Moisture Sensitivity, JEDEC	Level 2- 260C	-	-	-	3/36/0	-
MSL	Moisture Sensitivity, L1	Leve 1- 260C	2/30/0	3/36/0	3/36/0	-	-
ED	Electrical Characterization, side by side	-	-	Pass	Pass	Pass	-
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	-	-	1/77/0
HAST	Biased HAST, 130C/85%RH	192 Hours	-	-	-	-	1/77/0
HAST	Biased HAST, 130C/85%RH	288 Hours	-	-	-	-	1/77/0
AC	Autoclave 121C	96 Hours	-	3/231/0	3/231/0	3/231/0	-
тс	Temperature Cycle, -65/150C	500 Cycles	-	3/231/0	3/231/0	3/231/0	-
HTSL	High Temp Storage Bake 170C	420 Hours	-	3/231/0	-	3/231/0	-

- QBS: Qual By Similarity

- Qual Device SN74HC244MDWREP is qualified at LEVEL1-260CG

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

Green/Pb-free Status:

Qualified Pb-Free (SMT) and Green

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

IMPORTANT NOTICE AND DISCLAIMER

TI PROVIDES TECHNICAL AND RELIABILITY DATA (INCLUDING DATASHEETS), DESIGN RESOURCES (INCLUDING REFERENCE DESIGNS), APPLICATION OR OTHER DESIGN ADVICE, WEB TOOLS, SAFETY INFORMATION, AND OTHER RESOURCES "AS IS" AND WITH ALL FAULTS, AND DISCLAIMS ALL WARRANTIES, EXPRESS AND IMPLIED, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT OF THIRD PARTY INTELLECTUAL PROPERTY RIGHTS.

These resources are intended for skilled developers designing with TI products. You are solely responsible for (1) selecting the appropriate TI products for your application, (2) designing, validating and testing your application, and (3) ensuring your application meets applicable standards, and any other safety, security, or other requirements. These resources are subject to change without notice. TI grants you permission to use these resources only for development of an application that uses the TI products described in the resource. Other reproduction and display of these resources is prohibited. No license is granted to any other TI intellectual property right or to any third party intellectual property right. TI disclaims responsibility for, and you will fully indemnify TI and its representatives against, any claims, damages, costs, losses, and liabilities arising out of your use of these resources.

TI's products are provided subject to TI's Terms of Sale (www.ti.com/legal/termsofsale.html) or other applicable terms available either on ti.com or provided in conjunction with such TI products. TI's provision of these resources does not expand or otherwise alter TI's applicable warranties or warranty disclaimers for T I products.