

PCN Number:	20230330000.2			PCN Date:	September 27, 2023								
Title:	Qualification of a new die attach material for select devices												
Customer Contact:	Change Management Team		Dept:	Quality Services									
Proposed 1st Ship Date:	Mar 25, 2024			Sample requests accepted until:	Oct 27, 2023								
*Sample requests received after Oct 27, 2023 will not be supported.													
Change Type:													
<input type="checkbox"/>	Assembly Site	<input type="checkbox"/>	Design	<input type="checkbox"/>	Wafer Bump Material								
<input type="checkbox"/>	Assembly Process	<input type="checkbox"/>	Data Sheet	<input type="checkbox"/>	Wafer Bump Process								
<input checked="" type="checkbox"/>	Assembly Materials	<input type="checkbox"/>	Part number change	<input type="checkbox"/>	Wafer Fab Site								
<input type="checkbox"/>	Mechanical Specification	<input type="checkbox"/>	Test Site	<input type="checkbox"/>	Wafer Fab Material								
<input type="checkbox"/>	Packing/Shipping/Labeling	<input type="checkbox"/>	Test Process	<input type="checkbox"/>	Wafer Fab Process								
PCN Details													
Description of Change:													
This PCN is to inform of an alternate die attach material for the devices listed below.													
<table border="1"> <thead> <tr> <th>What</th> <th>Current</th> <th>New</th> </tr> </thead> <tbody> <tr> <td>Die attach material</td> <td>4223872</td> <td>4226215</td> </tr> </tbody> </table>		What	Current	New	Die attach material	4223872	4226215						
What	Current	New											
Die attach material	4223872	4226215											
Reason for Change:													
Continuity of supply													
Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):													
None													
Impact on Environmental Ratings													
Checked boxes indicate the status of environmental ratings following implementation of this change. If below boxes are checked, there are no changes to the associated environmental ratings.													
<table border="1"> <thead> <tr> <th>RoHS</th> <th>REACH</th> <th>Green Status</th> <th>IEC 62474</th> </tr> </thead> <tbody> <tr> <td><input checked="" type="checkbox"/> No Change</td> <td><input checked="" type="checkbox"/> No Change</td> <td><input checked="" type="checkbox"/> No Change</td> <td><input checked="" type="checkbox"/> No Change</td> </tr> </tbody> </table>		RoHS	REACH	Green Status	IEC 62474	<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change				
RoHS	REACH	Green Status	IEC 62474										
<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change	<input checked="" type="checkbox"/> No Change										
Changes to product identification resulting from this PCN:													
None													
Product Affected:													
TPS37042A3OFDDFRQ1		TPS37043A8OFDDFRQ1		TPS37044A4OGDDFRQ1									
TPS37043A4OFDDFRQ1		TPS37043BJOFDDFRQ1											

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

WINDSOR chip on lead: Laser Dicing to Hybrid Saw Conversion (AUTO)
Approve Date 10-January-2023

Product Attributes

Attributes	Qual Device: TPS37044A4OGDDFRQ1
Automotive Grade Level	Grade 1
Operating Temp Range (C)	-40 to 125
Product Function	Signal Chain
Wafer Fab Supplier	RFAB
Assembly Site	PHI
Package Group	SOT
Package Designator	DDF
Pin Count	8

- QBS: Qual By Similarity
- Qual Device TPS37044A4OGDDFRQ1 is qualified at MSL1 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: TPS37044A4OGDDFRQ1
Test Group A - Accelerated Environment Stress Tests								
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Preconditioning	MSL1 260C	1 Step	1/231/0
HAST	A2	JEDEC JESD22-A110	3	77	Biased HAST	130C/85%RH	96 Hours	1/77/0
AC/UHAST	A3	JEDEC JESD22-A102/JEDEC JESD22-A118	3	77	Unbiased HAST	130C/85%RH	96 Hours	1/77/0
TC	A4	JEDEC JESD22-A104 and Appendix 3	3	77	Temperature Cycle	-65C/150C	500 Cycles	1/77/0
Test Group B - Accelerated Lifetime Simulation Tests								
HTOL	B1	JEDEC JESD22-A108	1	77	Life Test	125C	1000 Hours	1/77/0
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	1/30/0
WBP	C2	MIL-STD883 Method 2011	1	30	Wire Bond Pull	Minimum of 5 devices, 30 wires Cpk>1.67	Wires	1/30/0
Test Group D - Die Fabrication Reliability Tests								
EM	D1	JESD61	-	-	Electromigration	-	-	Completed Per Process Technology Requirements
Tddb	D2	JESD35	-	-	Time Dependent Dielectric Breakdown	-	-	Completed Per Process Technology Requirements
HCI	D3	JESD60 & 28	-	-	Hot Carrier Injection	-	-	Completed Per Process Technology Requirements
NBTI	D4	-	-	-	Negative Bias Temperature Instability	-	-	Completed Per Process Technology Requirements

SM	D5	-	-	-	Stress Migration	-	-	Completed Per Process Technology Requirements
Test Group E - Electrical Verification Tests								
Additional Tests								
Type	#	Test Spec	Min Lot Qty	SS / Lot	Test Name	Condition	Duration	Qual Device

- 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-2207-003

ZVEI ID: SEM-PA-07

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

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