

<b>PCN Number:</b>	20170228002-001		<b>PCN Date:</b>	March 24, 2017					
<b>Title:</b>	Qualification of a new Die Attach Material for Select Devices								
<b>Customer Contact:</b>	<a href="#">PCN Manager</a>	<b>Dept:</b>	Quality Services						
<b>Proposed 1<sup>st</sup> Ship Date:</b>	Sept 24, 2017	<b>Estimated Sample Availability:</b>	Date provided at sample request						
<b>Change Type:</b>									
<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 checked="" type="checkbox"/>	Assembly Materials	<input type="checkbox"/>	Part number change	<input type="checkbox"/>	Wafer Bump Process				
<input type="checkbox"/>	Mechanical Specification	<input type="checkbox"/>	Test Site	<input type="checkbox"/>	Wafer Fab Site				
<input type="checkbox"/>	Packing/Shipping/Labeling	<input type="checkbox"/>	Test Process	<input type="checkbox"/>	Wafer Fab Materials				
				<input type="checkbox"/>	Wafer Fab Process				
<b>PCN Details</b>									
<b>Description of Change:</b>									
This notification is to announce the qualification of a new die attach material for the devices in the product affected section below as follows:									
<table border="1"> <thead> <tr> <th style="width: 50%;">Current</th> <th style="width: 50%;">Proposed</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">8087417</td> <td style="text-align: center;">4222215</td> </tr> </tbody> </table>						Current	Proposed	8087417	4222215
Current	Proposed								
8087417	4222215								
<b>Reason for Change:</b>									
Die Attach Supplier change no longer producing current material. No current material available after PCN expiration.									
<b>Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):</b>									
None									
<b>Anticipated impact on Material Declaration</b>									
<input type="checkbox"/>	No Impact to the Material Declaration	<input checked="" type="checkbox"/>	Material Declarations or Product Content reports are driven from production data and will be available following the production release. Upon production release the revised reports can be obtained from the <a href="#">TI ECO website</a> .						
<b>Changes to product identification resulting from this PCN:</b>									
None									
<b>Product Affected:</b>									
LM22670QTJ-5.0/NOPB	LM22673QTJE-5.0/NOPB	LM22677QTJ-ADJ/NOPB	LM22678QTJE-ADJ/NOPB						
LM22670QTJ-ADJ/NOPB	LM22673QTJE-ADJ/NOPB	LM22677QTJE-5.0/NOPB	LM22679QTJ-5.0/NOPB						
LM22670QTJE-5.0/NOPB	LM22676QTJ-5.0/NOPB	LM22677QTJE-ADJ/NOPB	LM22679QTJ-ADJ/NOPB						
LM22670QTJE-ADJ/NOPB	LM22676QTJ-ADJ/NOPB	LM22678QTJ-5.0/NOPB	LM22679QTJE-5.0/NOPB						
LM22673QTJ-5.0/NOPB	LM22676QTJE-5.0/NOPB	LM22678QTJ-ADJ/NOPB	LM22679QTJE-ADJ/NOPB						
LM22673QTJ-ADJ/NOPB	LM22676QTJE-ADJ/NOPB	LM22678QTJE-5.0/NOPB							



## Automotive New Product Qualification Summary

(As per AEC-Q100 and JEDEC Guidelines)

**4222215 Die Attach Epoxy (TJ263) Replacement BCP**

### Product Attributes

Attributes	Qual Device: LM22678QJJSKTW
Automotive Grade Level	Grade 1
Operating Temp Range	-40 to +125 C
Product Function	Power Management
Wafer Fab Supplier	MAINEFAB
Die Revision	A
Assembly Site	TIEM-AT
Package Type	TO-263
Package Designator	NDR
Ball/Lead Count	7

- QBS: Qual By Similarity  
- Qual Devices qualified at LEVEL1-260CG: LM22678QJJSKTW, LM22678QJJSKTW\_AG

### 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: LM22678QJJSKTW
<b>Test Group A – Accelerated Environment Stress Tests</b>							
PC	A1	JEDEC J-STD-020 JESD22-A113	3	77	Automotive Preconditioning	Level 1-260C	3/720/0
HAST	A2	JEDEC JESD22-A110	3	77	Biased HAST, 130C/85%RH	96 Hours	3/231/0
AC	A3	JEDEC JESD22-A102	3	77	Autoclave 121C	96 Hours	3/231/0
TC	A4	JEDEC JESD22-A104 and Appendix 3	3	77	Temperature Cycle, -65/150C	1000 Cycles	3/197/0
TC	A4	JEDEC JESD22-A104 and Appendix 3	3	77	Temperature Cycle, -65/150C	500 Cycles	3/231/0
TC-BP	A4	MIL-STD883 Method 2011	1	60	Post Temp Cycle Bond Pull	Wires	3/90/0
PTC	A5	JEDEC JESD22-A105	1	45	Power Temperature Cycle	1000 Cycles	N/A
HTSL	A6	JEDEC JESD22-A103	1	45	High Temp. Storage Bake, 150C	1000 Hours	3/135/0
HTSL	A6	JEDEC JESD22-A103	1	45	High Temp. Storage Bake, 150C	2000 Hours	3/135/0
<b>Test Group B – Accelerated Lifetime Simulation Tests</b>							
HTOL	B1	JEDEC JESD22-A108	3	77	Life Test, 125C	1000 Hours	3/231/0
EDR	B3	AEC Q100-005	3	77	NVM Endurance, Data Retention, and Operational Life	--	N/A
<b>Test Group C – Package Assembly Integrity Tests</b>							
WBS	C1	AEC Q100-001	1	30	Bond Shear (Cpk>1.67)	Wires	3/90/0
WBP	C2	MIL-STD883 Method 2011	1	30	Bond Pull (Cpk>1.67)	Wires	3/90/0
SD	C3	JEDEC JESD22-B102	1	15	Surface Mount Solderability >95% Lead Coverage	8 Hours Steam Age	N/A
PD	C4	JEDEC JESD22-B100 and B108	3	10	Physical Dimensions (Cpk>1.67)	--	N/A
LI	C6	JEDEC JESD22-B105	1	50	Lead Integrity	Leads	N/A
<b>Test Group D – Die Fabrication Reliability Tests</b>							
EM	D1	JESD61	-	-	Electromigration	--	Completed Per Process Technology Requirements
TDDb	D2	JESD35	-	-	Time Defandant Dielectric Breakdown	--	Completed Per Process Technology Requirements
HCI	D3	JESD60 & 28	-	-	Hot Injection Camer	--	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
<b>Test Group E – Electrical Verification Tests</b>							
ED	E5	AEC Q100-009	3	30	Electrical Distributions	Cpk>1.67	3/90/0

**A1 (PC): Preconditioning:**

Performed for THB, Biased HAST, AC, uHAST &TC 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

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

<b>Location</b>	<b>E-Mail</b>
USA	<a href="mailto:PCNAmericasContact@list.ti.com">PCNAmericasContact@list.ti.com</a>
Europe	<a href="mailto:PCNEuropeContact@list.ti.com">PCNEuropeContact@list.ti.com</a>
Asia Pacific	<a href="mailto:PCNAsiaContact@list.ti.com">PCNAsiaContact@list.ti.com</a>
Japan	<a href="mailto:PCNJapanContact@list.ti.com">PCNJapanContact@list.ti.com</a>