

<b>PCN Number:</b>	20140306002	<b>PCN Date:</b>	05/22/2014												
<b>Title:</b>	MSA QFN copper														
<b>Customer Contact:</b>	PCN_ww_admin_team@list.ti.com	<b>Phone:</b>	+1(214)480-6037												
<b>Dept:</b>	Quality Services														
<b>Proposed 1<sup>st</sup> Ship Date:</b>	11/22/2014	<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>															
<p>Texas Instruments Incorporated is announcing a change to QFN packaged devices to convert to copper bond wire. In addition, some devices will change to die attach CRM-1076NS</p> <ul style="list-style-type: none"> <li>EME-G770HCD is current mold compound and remains unchanged.</li> </ul> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th style="text-align: center;"><b>From:</b></th> <th style="text-align: center;"><b>To:</b></th> </tr> </thead> <tbody> <tr> <td><b>Die Attach</b></td> <td>ABLEBOND 8290 or 8200TI</td> <td>CRM-1076NS</td> </tr> <tr> <td><b>Mold Compound</b></td> <td>EME-G770HCD</td> <td>EME-G770HCD</td> </tr> <tr> <td><b>Bond Wire</b></td> <td>Au</td> <td>Cu</td> </tr> </tbody> </table>					<b>From:</b>	<b>To:</b>	<b>Die Attach</b>	ABLEBOND 8290 or 8200TI	CRM-1076NS	<b>Mold Compound</b>	EME-G770HCD	EME-G770HCD	<b>Bond Wire</b>	Au	Cu
	<b>From:</b>	<b>To:</b>													
<b>Die Attach</b>	ABLEBOND 8290 or 8200TI	CRM-1076NS													
<b>Mold Compound</b>	EME-G770HCD	EME-G770HCD													
<b>Bond Wire</b>	Au	Cu													
<b>Reason for Change:</b>															
<p>Continuity of supply.</p> <ol style="list-style-type: none"> <li>To align with world technology trends and use wiring with enhanced mechanical and electrical properties.</li> <li>Maximize flexibility within our Assembly/Test production sites</li> <li>Copper wire is easier to obtain and stock.</li> </ol>															
<b>Anticipated impact on Fit, Form, Function, Quality or Reliability (positive / negative):</b>															
Improved delamination performance with CRM-1076NS die attach.															
<b>Changes to product identification resulting from this PCN:</b>															
None															

**Product Affected:**

BQ24030IRHLRQ1	TPS54388QRLBRQ1	TPS62410QDRCRQ1	TPS65053IRGERQ1
BQ24031IRHLRQ1	TPS54388QRTERQ1	TPS62420QDPNRQ1	TPS650732TRSLRQ1
BQ24075QRGTRQ1	TPS57112QRLBRQ1	TPS62420QDRCRQ1	TPS73201QDRBRQ1
BQ24105IRHLRQ1	TPS57112QRTERQ1	TPS63000IDRCRQ1	TPS73719QDRBRQ1
NN1001TRSHRQ1	TPS57114QRLBRQ1	TPS65023QRHARQ1	TPS73733QDRBRQ1
NN1001TRSHTQ1	TPS57114QRTERQ1	TPS650241QRHBRQ1	TPS74701QDRCRQ1
TPA6211A1TDNVRQ1	TPS61029QDRCRQ1	TPS650243QRHBRQ1	TPS74801TDRCRQ1
TPS2561QDRCRQ1	TPS61087QDRCRQ1	TPS650244IRHBRQ1	TPS79501QDRBRQ1
TPS51200QDPNRQ1	TPS62110QRSARQ1	TPS650250QRHBRQ1	
TPS51200QDRCRQ1	TPS62404QDRCRQ1	TPS65051QRSMRQ1	

**Qualification Data:**

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

<b>Supplier Name:</b>	Texas Instruments Inc.	<b>Supplier Wafer Fabrication Site:</b>	TI DMOSS
<b>Supplier Code:</b>		<b>Supplier Die Rev.</b>	B2
<b>Supplier Part Number:</b>	ATIC106	<b>Supplier Assembly/Test Site:</b>	TI Malaysia
<b>Customer Name:</b>		<b>Supplier Package/Pin:</b>	RGC/64
<b>Customer Part Number:</b>		<b>Pb-Free Lead Frame (Y/N):</b>	Y
<b>Device Description:</b>	Various descriptions	<b>"Green" Mold Compound (Y/N):</b>	Y
<b>MSL Rating:</b>	Level3-260C	<b>Operating Temp Range:</b>	-40 to +125C
<b>Peak Solder Reflow Temp:</b>	260C	<b>Automotive Grade Level (1):</b>	1
<b>Prepared by:</b>	Bichun Xu	<b>Date:</b>	04/06/2009

Test	#	Reference	Test Conditions	Min Lots (2)	SS / lot (2)	Min Total (2)	Results Lot/pass/fail	Comments: (N/A =Not Applicable)	Exceptions to AEC - Q100
<b>TEST GROUP A – ACCELERATED ENVIRONMENT STRESS TESTS (3)</b>									
PC	A1	JESD22-113 J-STD-020	Preconditioning: SMD only; Moisture Preconditioning for THB/HAST, AC/UHST, TC, HTSL, and HTOL						
THB or HAST	A2	JESD22-A101 JESD22-A110	Temperature Humidity Bias: 85°C/85%/1000 hours Highly Accelerated Stress Test: 130°C/85%/96 hours or 110°C/85%/264 hours	3	77	231	3/240/0		
AC or UHST	A3	JESD22-A102 JESD22-A118	Autoclave: 121°C/15 psig/96 hours Unbiased Highly Accelerated Stress Test: 130°C/85%/96 hours or 110°C/85%/264 hours	3	77	231	3/240/0		
TC	A4	JESD22-A104	Temperature Cycle: -65°C/+150°C/500 cycles	3	77	231	3/240/0		
PTC	A5	JESD22-A105	Power Temperature Cycling: -40°C/+125°C/1000 cycles	1	45	45	1/45/0		
HTSL	A6	JESD22-A103	High Temperature Storage Life: 150°C/1000 hours or 175°C/500 hours	1	45	45	N/A		

**TEST GROUP B – ACCELERATED LIFETIME SIMULATION TESTS (3)**

HTOL	B1	JESD22-A108	High Temp Operating Life: 125°C/1000 hours 150°C/408 hours	3	77	231	3/236/0		
ELFR	B2	AEC-Q100-008	Early Life Failure Rate:	3	800	2400	N/A		

**TEST GROUP C – PACKAGE ASSEMBLY INTEGRITY TESTS (3)**

WBS	C1	AEC-Q100-001	Wire Bond Shear Test: (Cpk > 1.67)	30 bonds	5 parts min.	30 bonds	Pass		
WBP	C2	Mil-Std-883 Method 2011	Wire Bond Pull: Each bonder used (Cpk > 1.67)	30 bonds	5 parts min.	30 bonds	Pass		
SD	C3	JESD22-B102	Solderability: (>95% coverage) 8 hr steam age (1 hour for Au-plated leads)	1	15	15	N/A		
PD	C4	JESD22-B100 JESD22-B108	Physical Dimensions: (Cpk > 1.67)	1	10	10	N/A		
SBS	C5	AEC-Q100-010	Solder Ball Shear: (Cpk > 1.67)	5 balls	10 parts min.	50	N/A		
LI	C6	JESD22-B105	Lead Integrity:	10 leads	5 parts min.	50	N/A		

**TEST GROUP E- ELECTRICAL VERIFICATION**

TEST	E1	User/Supplier Specification	Pre and Post Stress Electrical Test:	All	All	All	Pass		
HBM	E2	AEC-Q100-002	Electrostatic Discharge, Human Body Model: (2kV - H2 or better)	1	3	3	Pass	2000 V all pins but DL3 pins, 4000 V special pins	
MM	E2	AEC-Q100-003	Electrostatic Discharge, Machine Model: (200V – M3 or better)	1	3	3	Pass	200 V all pins but DL3 pins, 400 V special pins	
CDM	E3	AEC-Q100-101	Electrostatic Discharge, Charged Device Model: (750V corner leads, 500V for all other pins)	1	3	3	Pass	1000 V	
LU	E4	AEC-Q100-004	Latch-Up:	1	6	6	N/A		
ED	E5	AEC-Q100-009	Electrical Distributions: (Cpk > 1.67)	3	30	90	Pass		

- (1) Grade 0 (or A): -40°C to +150°C ambient operating temperature range
- Grade 1 (or Q): -40°C to +125°C ambient operating temperature range
- Grade 2 (or T): -40°C to +105°C ambient operating temperature range
- Grade 3 (or I): -40°C to +85°C ambient operating temperature range
- Grade 4 (or C): -0°C to +150°C ambient operating temperature range
- (2) These are recommended minimum lot/sample sizes. Lot/sample size may be reduced depending on available data.
- (3) Generic data may be used.

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>