12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN# 20220915000.1
Qualify New Assembly Material set for Selected Device(s)
Change Notification / Sample Request

Date: September 15, 2022
To: TOKYO ELECTRON DEVICE (DSTR) PCN

Dear Customer:

This is an announcement of a change to a device that is currently offered by Texas Instruments. The details of this change are on the following pages.

Texas Instruments requires acknowledgement of receipt of this notification within **30** days of the date of this notice. Lack of acknowledgement of this notice within 30 days constitutes acceptance of the change. If samples or additional data are required, requests must be received within **30 days** of this notification.

The changes discussed within this PCN will not take effect any earlier than the proposed first ship date on Page 3 of this notification, unless customer agreement has been reached on an earlier implementation of the change.

This notice does not change the end-of-life status of any product. Should product affected be on a previously issued product withdrawal/discontinuance notice, this notification does not extend the life of that product or change the life time buy offering/discontinuance plan.

For questions regarding this notice or to provide acknowledgement of this PCN, you may contact your local Field Sales Representative or the PCN Team (PCN_ww_admin_team@list.ti.com). For sample requests or sample related questions, contact your local Field Sales Representative.

Sincerely,

PCN Team
SC Business Services

20220915000.1
Attachment: 1

Products Affected:

The devices listed on this page are a subset of the complete list of affected devices. According to our records, these are the devices that you have purchased within the past twenty-four (24) months. The corresponding customer part number is also listed, if available.

DEVICE	CUSTOMER PART NUMBER
PCM1681PWP	null
PCM1789PW	null
PCM1681PWPR	null
PCM1690DCAR	null
PCM1789PWR	null

Technical details of this Product Change follow on the next page(s).

PCN Number:	20220915000.1	PCN Date:	September 15, 2022
Title:	Qualify New Assembly Material set for Selected Device(s)		
Customer Contact:	PCN Manager	Dept:	Quality Services
Proposed 1st Ship Date:	Dec 15, 2022	Sample requests accepted until:	Oct 15, 2022*

*Sample requests received after (Oct 15th, 2022) will not be supported.

Change Type:

☐	Assembly Site	☐	Design	☐	Wafer Bump Site
☒	Assembly Process	☐	Data Sheet	☐	Wafer Bump Material
☒	Assembly Materials	☐	Part number change	☐	Wafer Bump Process
☐	Mechanical Specification	☐	Test Site	☐	Wafer Fab Site
☐	Packing/Shipping/Labeling	☐	Test Process	☐	Wafer Fab Materials
				☐	Wafer Fab Process

PCN Details

Description of Change:

Texas Instruments is pleased to announce the qualification of new assembly material for devices listed in "Product affected" section below. Devices will remain in current assembly facility and piece part changes as follows:

Material	Current	Proposed
Wire type	0.96 mil Au	1.0 mil Cu

Reason for Change:

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 Fit, Form, 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.

RoHS	REACH	Green Status	IEC 62474
☒ No Change	☒ No Change	☒ No Change	☒ No Change

Changes to product identification resulting from this PCN:

None.

Product Affected:

PCM1681PWP	PCM1690DCA	PCM1789PW
PCM1681PWPR	PCM1690DCAR	PCM1789PWR

Qualification Report

Approve Date 17-AUGUST -2022

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: PCM1690DCAR	QBS Reference: PCM3168ATPAPRQ1	QBS Reference: PCM1753TDBQRQ1	QBS Reference: TPS653853QDCARQ1
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	-	3/231/0	3/231/0
UHAST	A3	Autoclave	121C/15psig	96 Hours	1/77	-	-	-
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	2/154/0	3/225/0[1]	3/231/0
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	1/77	-	-	-
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	3/231/0	3/231/0	3/231/0
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	1/77	-	-	-
HTSL	A6	High Temperature Storage Life	150C	500 Hours	-	-	1/45/0	-
HTOL	B1	Life Test	105C	1000 Hours	-	3/230/1[2]	-	-
HTOL	B1	Life Test	105C	480 Hours	-	-	3/231/0	-
HTOL	B1	Life Test	125C	1000 Hours	-	-	-	3/231/0
ELFR	B2	Early Life Failure Rate	125C	24 Hours	-	3/2400/2[3]	-	-
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	-	-	3/2400/0
ESD	E2	ESD CDM	-	250 Volts	-	-	-	-
ESD	E2	ESD CDM	-	500 Volts	-	3/9/0	3/9/0	1/3/0
ESD	E2	ESD HBM	-	1000 Volts	-	-	-	-
ESD	E2	ESD HBM	-	2000 Volts	-	-	-	1/3/0
ESD	E2	ESD HBM	-	2500 Volts	-	3/9/0	3/9/0	-
LU	E4	Latch-Up	Per JESD78	-	-	-	-	-
CHAR	E5	Electrical Characterization	Min, Typ, Max Temp	-	1/30	-	-	-
CHAR	E5	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	-	3/90/0	3/90/0	3/90/0

QBS: Qual By Similarity
Qual Device PCM1690DCAR is qualified at MSL3 260C
Qual Device PCM1690DCA is qualified at MSL3 260C
Qual Device PCM1681PWP is qualified at MSL3 260C
Qual Device PCM1681PWPR is qualified at MSL3 260C
Qual Device PCM1789PW is qualified at MSL2 260C
Qual Device PCM1789PWR is qualified at MSL2 260C

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:
Note: This qualification memo also covers the PCM1681PWPRG4 and PCM1789PWRG4 devices.
Qualified Pb-Free (SMT) and Green

[1]-Short 5 units due to mechanical damage.
[2]-The fail mode seen in the F/A is the same one that is seen in ELFR on this device. No Corrective action. Automotive devices will continue performing burn-in in production.
[3]-(QTS380501-1) Ti particle found in unit 1. Corrective actions implemented. Unit 2 - fail mechanism not found

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

Location	E-Mail
WW Change Management Team	PCN_ww_admin_team@list.ti.com