12500 TI Boulevard, MS 8640, Dallas, Texas 75243

PCN# 20230713001.1
Qualification of new Fab site (RFAB) using qualified Process Technology, Die Revision and additional Assembly site/BOM options for select devices
Change Notification / Sample Request

Date: July 14, 2023
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 (TI). The details of this change are on the following pages, and are in alignment with our standard product change notification (PCN) process.

TI 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 and approval of this change. If samples or additional data are required, requests must be received within 30 days of this notification, given that samples are not built ahead of the change.

The Proposed First Ship date in this PCN letter is the earliest possible date that customers could receive the changed material. It is our commitment that the changed device will not ship before that date. If samples are requested within the 30 day sample request window, customers will still have 30-days to complete their evaluation regardless of the proposed 1st ship date.

This particular PCN is related to TI's multiyear transition plan for our two remaining factories with 150-millimeter production (DFAB in Dallas, Texas, and SFAB in Sherman, Texas). DFAB will remain open, but will focus on 200-mm production, with a smaller set of technologies. SFAB will close no earlier than 2024 and no later than 2025. As referenced in the "reason for change" below, these changes are part of our multiyear plan to transition these products to newer, more efficient manufacturing processes and technologies, underscoring our commitment to product longevity and supply continuity.

For questions regarding this notice or to provide acknowledgement of this PCN, you may contact your local Field Sales Representative or the Change Management team. For sample requests or sample related questions, contact your local Field Sales Representative. As always, we thank you for your continued business.

Change Management Team
SC Business Services

20230713001.1
Attachment: 1

Products Affected:

The devices listed on this page are a subset of the complete list of affected devices. According to our records, you have recently purchased these devices. The corresponding customer part number is also listed, if available.

DEVICE	CUSTOMER PART NUMBER
OPA4990IPWR	null
TL032IDR	null
TL062ACDR	null
TL064ACDR	null
TL064IDR	null
TL062CPWR	null
TL064BCDR	null
TL061IDR	null
TL062IPWR	null
TL064IPWR	null
UA741CDR	null
TL062IDR	null
TL062CDR	null
TL064CPWR	null
UA741CP	null
TL062CP	null
TLV9104IPWR	null

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

PCN Number:	20230713001.1	**PCN Date:**	July 14, 2023
Title:	Qualification of new Fab site (RFAB) using qualified Process Technology, Die Revision and additional Assembly site/BOM options for select devices		
Customer Contact:	Change Management team	**Dept:**	Quality Services
Proposed 1st Ship Date:	Oct 13, 2023	**Estimated Sample Availability:**	August 13, 2023*

***Sample requests received after August 13, 2023 will not be supported.**

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

PCN Details

Description of Change:

Texas Instruments is pleased to announce the qualification of a new fab & process technology (RFAB, LBC9) and additional Assembly site (MLA) for selected devices listed below in the product affected section.

Current Fab Site			Additional Fab Site		
Current Fab Site	**Process**	**Wafer Diameter**	**Additional Fab Site**	**Process**	**Wafer Diameter**
SFAB	JI1	150 mm	RFAB	LBC9	300 mm

The die was also changed as a result of the process change.

Additionally, there will be a BOM/Assembly options introduced for these devices:

Group 1: (RFAB/Process migration, & MLA as additional Assembly site)

TSSOP (PW) Package	**ASESHAT**	**MLA**
Mount compound	EY1000063	4147858
Mold compound	EN2000508	4211471

SOIC (D) Package	**FMX**	**MLA**
Wire type	0.96mil Au/Cu	0.8mil Cu

Group 2: (RFAB/Process migration, BOM Update)

	Current	**Proposed**
Wire type	0.8mil Au, 0.96mil Au, 0.96 Cu	0.8mil Cu

Qual details are provided in the Qual Data Section.

Reason for Change:

These changes are part of our multiyear plan to transition products from our 150-millimeter factories to newer, more efficient manufacturing processes and technologies, underscoring our commitment to product longevity and supply continuity.

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.

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

Changes to product identification resulting from this PCN:

Fab Site Information:

Chip Site	Chip Site Origin Code (20L)	Chip Site Country Code (21L)	Chip Site City
SH-BIP-1	SHE	USA	Sherman
RFAB	**RFB**	**USA**	**Richardson**

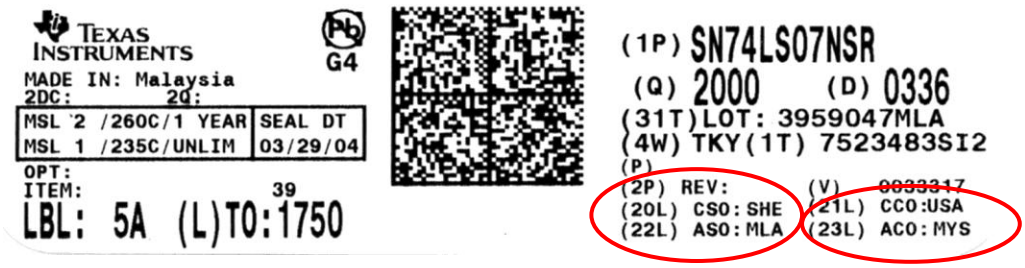
Die Rev:

Current	**New**
Die Rev [2P]	**Die Rev [2P]**
A, C, F	**A, B**

Assembly Site Information:

Assembly Site	Assembly Site Origin (22L)	Assembly Country Code (23L)	Assembly City
ASESH	ASH	CHN	Shanghai
FMX	MEX	MEX	Aguascalientes
MLA	**MLA**	**MYS**	**Kuala Lumpur**

Sample product shipping label (not actual product label)



Product Affected:

Group 1 Device List: (RFAB/Process migration, BOM Update & MLA as an additional Assembly site)

OPA4990IPWR	TL032CDR	TL062ACDRG4	UA741CDR
TL031CDR	TL032IDR	TL062BCDR	
TL032ACDR	TL061ACDR	TLV9104IPWR	
TL032AIDR	TL062ACDR	TLV9304IPWR	

Group 2 Device List: (RFAB/Process migration, BOM Update)

TL031CP	TL034CPWR	TL062ACP	TL062IPWR
TL031IP	TL034IDR	TL062BCP	TL064ACDR
TL032ACP	TL061ACP	TL062CDR	TL064BCDR
TL032AIP	TL061BCP	TL062CDRG4	TL064CDR
TL032CP	TL061CDR	TL062CP	TL064CPWR
TL032IP	TL061CP	TL062CPWR	TL064IDR
TL034ACDR	TL061IDR	TL062IDR	TL064IPWR

TL034AIDR	TL061IP	TL062IP	UA741CP
TL034CDR			

For alternate parts with similar or improved performance, please visit the product page on TI.com

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: UA741CP	QBS Reference: OPA4990IDR	QBS Reference: NE5532P	QBS Reference: UCC37322P	QBS Reference: OPA990IDBVR
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	3/231/0	3/231/0	-	3/231/0
UHAST	A3	Autoclave	121C, 2 atm	96 Hours	-	3/231/5[1]	-	-	-
TC	A4	Temperature Cycle	-65/150C	500 Cycles	-	3/231/0	-	3/231/0	3/231/0
HTOL	B1	Life Test	150C	300 Hours	-	3/231/10[2,3]	3/231/0	-	-
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	1/800/0	-	-	-
SD	C3	PB-Free Solderability	8 Hours Steam Age	-	-	-	3/66/0	3/66/0	-
ESD	E2	ESD CDM	-	250 Volts	1/3/0	-	-	-	-
ESD	E2	ESD HBM	-	3000 Volts	-	-	-	-	3/9/0
LU	E4	Latch-Up	Per JESD78	-	-	3/18/0	-	-	3/9/0
CHAR	E5	Electrical Characterization	Min, Typ, Max Temp	-	-	3/90/0	-	-	3/90/0
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	-	3/90/0	-	-	3/90/0

- QBS: Qual By Similarity
- Qual Device UA741CP is qualified at NOT CLASSIFIED NOT CLASSIFIED

- 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

TI Qualification ID: R-CHG-2201-021

[1]-Discounted
[2]-Discounted
[3]-Discounted

Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: OPA2990IPWR	QBS Process Reference: DRV8873SPWPRQ1	QBS Process Reference: DRV8873SPWPRQ1-A0	QBS Process Reference: OPA2990IDR
AC	Autoclave 121C	96 Hours	-	2/202/0	1/77/0	-
ED	Electrical Distributions	Cpk>1.67	-	2/60/0	1/30/0	-
ED	Electrical Characterization	Per Datasheet Parameters	1/30/0	-	-	3/90/0
ELFR	Early Life Failure Rate, 125C	48 Hours	-	2/1600/0	2/802/0	-
HAST	Biased HAST, 130C/85%RH	96 Hours	3/231/0	2/150/0	1/106/0	3/231/0
HBM	ESD - HBM	2500 V	1/3/0	-	-	-
CDM	ESD - CDM	1500 V	1/3/0	-	-	3/9/0
HTOL	Life Test, 125C	1000 Hours	-	2/154/0	1/77/0	-
HTOL	Life Test, 150C	300 Hours	-	-	-	3/231/0
HTSL	High Temp. Storage Bake 150C	1000 Hours	-	-	1/50/0	-
HTSL	High Temp. Storage Bake 170C	420 Hours	3/231/0	-	-	3/231/0
HTSL	High Temp. Storage Bake 175C	500 Hours	-	2/100/0	-	-
LU	Latch-up	(per JESD78)	1/6/0	1/6/0	-	3/18/19
PD	Physical Dimensions	--	-	2/20/0	1/10/0	-
SD	Surface Mount Solderability	Pb Free	-	1/30/0	-	-
SD	Solderability - Dip and Look	Pb Free	-	-	1/30/0	-
SD	Solderability - Dip and Look	Pb	-	-	1/30/0	-
SD	Surface Mount Solderability	Pb	-	1/30/0	-	-
TC	Temperature Cycle, -65/150C	500 Cycles	3/231/0	2/154/0	1/77/0	3/231/0
UHAST	Unbiased HAST, 130C/85%RH	96 Hours	3/231/0	-	-	3/231/0
BP	Bond Pull	Wires	-	2/10/0	1/5/0	-
WBS	Bond Shear	Wires	-	2/10/0	1/5/0	-

- QBS: Qual By Similarity
- Qual Device OPA2990IPWR is qualified at LEVEL2-260C

- 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:

Qualified Pb-Free (SMT) and Green

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: OPA2990IDR	QBS Reference: OPA2990IDR	QBS Reference: OPA2991IDR	QBS Reference: OPA2991IDR
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	3/231/0	-	-
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	-	-	1/77/0
UHAST	A3	Unbiased HAST	130C/85%RH	96 Hours	-	3/231/0	-	-
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	3/231/0	-	1/77/0
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	-	3/231/0	-	-
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes); PB-Free Solder;	-	-	1/22/0	-	-
ESD	E2	ESD CDM	-	250 Volts	-	1/3/0	-	-
ESD	E2	ESD HBM	-	1000 Volts	-	1/3/0	-	-
LU	E4	Latch-Up	Per JESD78	-	-	1/3/0	1/3/0	-
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	-	1/30/0	1/30/0	-

- QBS: Qual By Similarity
- Qual Device OPA2990IDR is qualified at MSL1 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/

TI Qualification ID: R-CHG-2305-064

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: OPA4990IDR	QBS Reference: OPA4990IDR	QBS Reference: OPA4991IDR
HAST	A2	Biased HAST	130C	96 Hours	-	3/231/0	-
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	3/231/0	1/77/0
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	3/231/0	1/77/0
HTSL	A6	High Temperature Storage Life	170C	420 Hours	-	3/231/0	-
HTOL	B1	Life Test	150C	300 Hours	-	3/231/0	-
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	3/2400/0	-
LU	E4	Latch-Up	Per JESD78	-	-	3/18/0	-
CHAR	E5	Electrical Characterization	Per datasheet limits	-	-	3/90/0	-

- QBS: Qual By Similarity
- Qual Device OPA4990IDR is qualified at MSL1 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/

TI Qualification ID: R-CHG-2305-066

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: OPA4990IPWR	QBS Process Reference: OPA2991QDGKRQ1	QBSProduct/Process/ Package Reference: OPA4991QPWRQ1
HAST	A2	Biased HAST	110C/85%RH	264 Hours	-	-	1/77/0
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	3/231/0	-
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	3/231/0	3/231/0
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	3/231/0	1/77/0
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	-	-	1/45/0
HTSL	A6	High Temperature Storage Life	175C	630 Hours	-	3/135/0	-
HTOL	B1	Life Test	150C	300 Hours	-	-	3/231/0
HTOL	B1	Life Test	150C	408 Hours	-	3/230/0	-
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	3/2397/0	-
SD	C3	PB Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	1/15/0	-
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	1/15/0	-
PD	C4	Physical Dimensions	Cpk>1.67	-	-	3/30/0	1/10/0

Type	#	Test Name	Condition	Duration	Qual Device: OPA4990IPWR	QBS Process Reference: OPA2991QDGKRQ1	QBSProduct/Process/ Package Reference: OPA4991QPWRQ1
ESD	E2	ESD CDM	-	1500 Volts	-	-	1/3/0
ESD	E2	ESD HBM	-	2000 Volts	-	1/3/0	-
ESD	E2	ESD HBM	-	4000 Volts	-	-	1/3/0
LU	E4	Latch-Up	Per JESD78	-	-	1/6/0	3/18/0
CHAR	E5	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	-	3/90/0	3/90/0

- QBS: Qual By Similarity
- Qual Device OPA4990IPWR is qualified at MSL1 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/

TI Qualification ID: R-CHG-2305-067

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: TLC271CDR	QBS Reference: OPA4990IDR	QBS Reference: OPA990IDBVR	QBS Reference: SN74HCS08QDRQ1	QBS Reference: TCAN1044VDRQ1
HAST	A2	Biased HAST	130C	96 Hours	-	3/231/0	-	-	-
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	-	3/231/0	-	-
UHAST	A3	Autoclave	121C, 2 atm	96 Hours	-	3/231/5[1]	-	-	-
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	-	3/231/0	-	-
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	-	-	3/231/0	3/231/0
TC	A4	Temperature Cycle	-65/150C	500 Cycles	-	3/231/0	-	-	-
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	-	3/231/0	-	-
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	-	-	3/231/0	3/231/0
HTSL	A6	High Temperature Storage Life	170C	420 Hours	-	3/231/0	3/231/0	-	-
HTOL	B1	Life Test	150C	300 Hours	-	3/231/10[2,3]	-	-	-
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	1/800/0	-	-	-
WBS	C1	Ball Shear	76 balls, 3 units min	Wires	1/76/0	-	-	-	-
WBP	C2	Bond Pull	76 Wires, 3 units min	Wires	1/76/0	-	-	-	-
PD	C4	Physical Dimensions	Cpk>1.67	-	-	-	-	3/30/0	3/30/0

ESD	E2	ESD CDM	-	1500 Volts	-	-	3/9/0	-	-
ESD	E2	ESD CDM	-	250 Volts	1/3/0	-	-	-	-
ESD	E2	ESD HBM	-	3000 Volts	-	-	3/9/0	-	-
LU	E4	Latch-Up	Per JESD78	-	-	3/18/0	3/9/0	-	-
CHAR	E5	Electrical Characterization	Min, Typ, Max Temp	-	-	3/90/0	3/90/0	-	-
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	-	3/90/0	3/90/0	-	-

- QBS: Qual By Similarity
- Qual Device TLC271CDR is qualified at MSL1 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:

Qualified Pb-Free(SMT) and Green

TI Qualification ID: R-NPD-2209-036

[1]-Mechanical damage from mis-handling @ test.
[2]-Faulty BI sockets.
[3]-Faulty BI sockets.

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: TL062CP	QBS Reference: OPA4990IDR	QBS Reference: LM2904BQDRQ1	QBS Reference: NE5532P	QBS Reference: UCC37322P	QBS Reference: OPA2990IDR
HAST	A2	Biased HAST	130C	96 Hours	-	3/231/0	3/231/0	3/231/0	-	3/231/0
UHAST	A3	Autoclave	121C, 2 atm	96 Hours	-	3/231/5[1]	-	-	3/231/0	-
UHAST	A3	Unbiased HAST	130C	192 Hours	-	-	3/231/0	-	-	-
UHAST	A3	Unbiased HAST	130C/85%RH	96 Hours	-	-	-	-	-	3/231/0
TC	A4	Temperature Cycle	-65/150C	500 Cycles	-	3/231/0	3/231/0	-	3/231/0	3/231/0
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	-	-	-	-	-	3/231/0
HTSL	A6	High Temperature Storage Life	170C	420 Hours	-	3/231/0	3/135/0	-	3/231/0	-
HTOL	B1	Life Test	150C	300 Hours	-	3/231/10[2,3]	3/231/0	3/231/0	-	-
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	1/800/0	3/2400/4[4,5]	-	-	-
SD	C3	PB Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	1/15/0	-	-	-

SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	1/15/0	-	-	-
ESD	E2	ESD CDM	-	250 Volts	-	-	-	-	-	1/3/0
ESD	E2	ESD HBM	-	1000 Volts	-	-	-	-	-	1/3/0
LU	E4	Latch-Up	Per JESD78	-	-	3/18/0	-	-	-	1/3/0
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	3/90/0	-	-	-	1/30/0

- QBS: Qual By Similarity
- Qual Device TL062CP is qualified at NOT CLASSIFIED NOT CLASSIFIED

- 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

TI Qualification ID: R-CHG-2108-022

[1]- Discounted - Handling
[2]- Discounted - Handling
[3]- Discounted - Handling
[4]- Discounted - Test Coverage
[5]- Discounted - Test Coverage

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