


PCN Number:	20230814006.1	PCN Date:	August 14, 2023																								
Title:	Qualification of new Fab site (RFAB) using qualified Process Technology, Die Revision, Datasheet and additional Assembly site/BOM options for select devices																										
Customer Contact:	Change Management team	Dept:	Quality Services																								
Proposed 1st Ship Date:	Nov 14, 2023	Sample requests accepted until:	Sep 14, 2023*																								
*Sample requests received after September 14, 2023 will not be supported.																											
Change Type:																											
<input checked="" type="checkbox"/> Assembly Site	<input checked="" type="checkbox"/> Design	<input type="checkbox"/> Wafer Bump Material																									
<input type="checkbox"/> Assembly Process	<input checked="" type="checkbox"/> Data Sheet	<input type="checkbox"/> Wafer Bump Process																									
<input checked="" type="checkbox"/> Assembly Materials	<input type="checkbox"/> Part number change	<input checked="" type="checkbox"/> Wafer Fab Site																									
<input type="checkbox"/> Mechanical Specification	<input type="checkbox"/> Test Site	<input checked="" type="checkbox"/> Wafer Fab Materials																									
<input checked="" type="checkbox"/> Packing/Shipping/Labeling	<input type="checkbox"/> Test Process	<input checked="" type="checkbox"/> 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 (CDAT, MLA) for selected devices listed below in the product affected section.																											
<table border="1"> <thead> <tr> <th colspan="3">Current Fab Site</th> <th colspan="3">Additional Fab Site</th> </tr> <tr> <th>Current Fab Site</th> <th>Process</th> <th>Wafer Diameter</th> <th>Additional Fab Site</th> <th>Process</th> <th>Wafer Diameter</th> </tr> </thead> <tbody> <tr> <td>DL-LIN</td> <td>LBC3S</td> <td>150 mm</td> <td rowspan="3">RFAB</td> <td rowspan="3">LBC9</td> <td rowspan="3">300mm</td> </tr> <tr> <td>SFAB</td> <td>J12</td> <td>150 mm</td> </tr> <tr> <td>SFAB</td> <td>IMP-C60</td> <td>150 mm</td> </tr> </tbody> </table>			Current Fab Site			Additional Fab Site			Current Fab Site	Process	Wafer Diameter	Additional Fab Site	Process	Wafer Diameter	DL-LIN	LBC3S	150 mm	RFAB	LBC9	300mm	SFAB	J12	150 mm	SFAB	IMP-C60	150 mm	
Current Fab Site			Additional Fab Site																								
Current Fab Site	Process	Wafer Diameter	Additional Fab Site	Process	Wafer Diameter																						
DL-LIN	LBC3S	150 mm	RFAB	LBC9	300mm																						
SFAB	J12	150 mm																									
SFAB	IMP-C60	150 mm																									
Construction differences are as follows (There are no construction differences for Group 1 and Group 3 devices):																											
Group 2 BOM Table (Process migration & BOM option qualification):																											
	Current	New																									
Bond wire diameter (Cu)	0.96 mil	0.8 mil and 1 mil																									
Group 4 BOM Table (Process migration & CDAT as an additional Assembly site):																											
	MLA	CDAT																									
Bond wire diameter (Cu)	0.96 mil	0.8 mil																									
Mold Compound	4208625	4222198																									
Mount Compound	4205846	4207123																									
The die was also changed as a result of the process change.																											
The datasheets will be changing as a result of the above mentioned changes. The datasheet change details can be reviewed in the datasheet revision history. The links to the revised datasheets are available in the table below.																											
		AM26LS32AC, AM26LS32AI, AM26LS32AM AM26LS33AC, AM26LS33AM <small>SLLS115G – OCTOBER 1980 – REVISED AUGUST 2023</small>																									
Changes from Revision F (August 2016) to Revision G (August 2023)			Page																								
• Changed the Device Information table to the <i>Package Information</i> table.....			1																								
• Changed the <i>Thermal Information</i> table.....			5																								
• Changed the <i>Typical Characteristics</i>			8																								

Changes from Revision D (December 2020) to Revision E (August 2023)
Page

- Changed the Device Information table to the *Package Information* table..... **1**
- Changed the *Thermal Information* **5**
- Changed the *Typical Characteristics* **6**

Product Folder	Current Datasheet Number	New Datasheet Number	Link to full datasheet
AM26LS32AC, AM26LS32A	SLLS115F	SLLS115G	http://www.ti.com/product/AM26LS32AC
AM26LV32E	SLLS849D	SLLS849E	http://www.ti.com/product/AM26LV32E

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 and 200-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
<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:
Fab Site Information:

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

Die Rev:
Current
New

Die Rev [2P]	Die Rev [2P]
A, C, -	-

Assembly Site Information:

Assembly Site	Assembly Site Origin (22L)	Assembly Country Code (23L)	Assembly City
FMX	MEX	MEX	Aguascalientes
MLA	MLA	MYS	Kuala Lumpur
CDAT	CDA	CHN	Chengdu

Sample product shipping label (not actual product label)



Product Affected:

Group 1 Device list: (Process migration & MLA as an additional Assembly site)

AM26LS32AIDR	AM26LS32AIDRG4	AM26LS33ACDR	AM26LV32IDR
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Group 2 Device list: (Process migration & BOM option qualification)

AM26LS32ACDR	AM26LS32ACDRE4
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Group 3 Device list: (Process migration only)

AM26LS32ACN	AM26LS32ACPWR	AM26LV32EIDRG4	AM26LV32EIPWRG4
AM26LS32ACNSR	AM26LS32ACPWRE4	AM26LV32EINSR	AM26LV32INSR
AM26LS32ACNSRG4	AM26LV32EIDR	AM26LV32EIPWR	

Group 4 Device list: (Process migration & CDAT as an additional Assembly site)

AM26LV32EIRGYR	AM26LV32EIRGYRG4
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For alternate parts with similar or improved performance, please visit the product page on [TI.com](https://www.ti.com)

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: AM26LS32ACN	Qual Device: AM26LS32AIDR	Qual Device: AM26LS32ACNSR	Qual Device: AM26LS32ACPWR	QBS Reference (Package): TMUX1108PWR	QBS Reference (Package): TMUX1208PWR	QBS Reference (Process): TLV9062ID	QBS Reference (Package): ADS900E	QBS Reference (Package): SN74LVC8T249NSR
UHASt	A3	Autoclave	121C, 2 atm	96 Hours	-	-	-	-	2/154/0	1/77/0	-	-	-
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	-	-	-	2/154/0	1/77/0	-	1/77/0	3/231/0
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	-	-	-	-	-	-	-	-	3/231/0
HTSL	A6	High Temperature Storage Life	170C	420 Hours	-	-	-	-	2/154/0	1/77/0	-	-	-
HTOL	B1	Life Test	150C	300 Hours	-	-	-	-	-	-	3/231/0	-	-
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	-	-	-	-	-	3/2400/1 ¹	-	-
WBS	C1	Ball Shear	76 balls, 3 units min	Wires	1/76/0	1/76/0	1/76/0	1/76/0	-	-	-	-	-
WBP	C2	Bond Pull	76 Wires, 3 units min	Wires	1/76/0	1/76/0	1/76/0	1/76/0	-	-	-	-	-
ESD	E2	ESD CDM	-	250 Volts	1/3/0	1/3/0	1/3/0	1/3/0	-	-	-	-	-
ESD	E2	ESD HBM	-	1000 Volts	-	1/3/0	-	-	-	-	-	-	-
LU	E4	Latch-Up	Per JEDEC78	-	-	1/3/0	-	-	-	-	-	-	-
CHAR	E5	Electrical Characterization	Min. Typ. Max Temp	-	-	1/30/0	-	-	-	-	-	-	-
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	-	1/30/0	-	-	-	-	-	-	-
FTY	E6	Final Test Yield	-	-	1/1/0	1/1/0	1/1/0	1/1/0	-	-	-	-	-

- QBS: Qual By Similarity
- Qual Device AM26LS32ACN is not classified
- Qual Device AM26LS32AIDR is qualified at MSL1 260C
- Qual Device AM26LS32ACNSR is qualified at MSL1 260C
- Qual Device AM26LS32ACPWR 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-2205-023

[1]-Die EOS

1 unit – discounted

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: AM26LV32EIDR	Qual Device: AM26LV32EINSR	Qual Device: AM26LV32EIPWR	QBS Reference (Package): TMUX1168PWR	QBS Reference (Package): TMUX1208PWR	QBS Reference (Process): TLV9062ID	QBS Reference (Package): ULQ2003AQDRQ1	QBS Reference (Package): SN74LVC8T245NSR
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	-	-	-	-	-	3/231/0	-
UHAST	A3	Autoclave	121C, 2 atm	96 Hours	-	-	-	2/154/0	1/77/0	-	3/231/0	-
UHAST	A3	Unbiased HAST	130C	96 Hours	-	-	-	-	-	-	-	-
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	-	-	2/154/0	1/77/0	-	3/231/0	3/231/0
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	-	-	-	-	-	-	3/135/0	3/231/0
HTSL	A6	High Temperature Storage Life	170C	420 Hours	-	-	-	2/154/0	1/77/0	-	-	-
HTOL	B1	Life Test	125C	1000 Hours	-	-	-	-	-	-	3/231/0	-
HTOL	B1	Life Test	150C	300 Hours	-	-	-	-	-	3/231/0	-	-
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	-	-	-	-	3/2400/1 ¹	-	-
WBS	C1	Ball Shear	76 balls, 3 units min	Wires	1/76/0	1/76/0	1/76/0	-	-	-	-	-
WBP	C2	Bond Pull	76 Wires, 3 units min	Wires	1/76/0	1/76/0	1/76/0	-	-	-	-	-
SD	C3	PB Solderability	Precondition w/155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	-	-	-	-	1/15/0	-

Type	#	Test Name	Condition	Duration	Qual Device: AM26LV32EIDR	Qual Device: AM26LV32EINSR	Qual Device: AM26LV32EIPWR	QBS Reference (Package): TMUX1168PWR	QBS Reference (Package): TMUX1208PWR	QBS Reference (Process): TLV9062ID	QBS Reference (Package): ULQ2003AQDRQ1	QBS Reference (Package): SN74LVC8T245NSR
SD	C3	PB-Free 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); PB-Free Solder;	-	-	-	-	-	-	-	-	-
ESD	E2	ESD CDM	-	1500 Volts	-	-	-	-	-	-	-	-
ESD	E2	ESD CDM	-	2000 Volts	-	-	-	-	-	-	-	-
ESD	E2	ESD CDM	-	250 Volts	1/3/0	1/3/0	1/3/0	-	-	-	-	-
ESD	E2	ESD HBM	-	1000 Volts	1/3/0	-	-	-	-	-	-	-
ESD	E2	ESD HBM	-	5000 Volts	-	-	-	-	-	-	-	-
LU	E4	Latch-Up	Per JESD78	-	1/3/0	-	-	1/6/0	1/6/0	-	-	-
CHAR	E5	Electrical Characterization	Min. Typ. Max Temp	-	1/30/0	-	-	1/30/0	1/30/0	-	-	-
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	-	-	1/30/0	1/30/0	-	-	-
CHAR	E5	Electrical Distributions	Cpk>1.67 Room, hot, and cold	-	-	-	-	-	-	-	3/90/0	-
FTY	E6	Final Test Yield	-	-	1/1/0	1/1/0	1/1/0	-	-	-	-	-

- QBS: Qual By Similarity
- Qual Device AM26LV32EIDR is qualified at MSL1 260C
- Qual Device AM26LV32EINSR is qualified at MSL1 260C
- Qual Device AM26LV32EIPWR 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-2205-031

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: AM26LV32EIRGYR	QBS Reference (Process): TLV9062ID	QBS Reference (Package): TS3A5017QRGYRQ1	QBS Reference (Package): TPS3850G09ADRCR
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	-	3/231/0	3/231/0
UHAST	A3	Autoclave	121C/15psig	96 Hours	-	-	3/231/0	3/231/0
UHAST	A3	Unbiased HAST	130C	96 Hours	-	-	-	-
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	-	3/231/0	3/231/0
TC	A4	Temperature Cycle	-65C/150C	750 Cycles	-	-	-	1/30/0
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	-	-	3/135/0	-
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	-	3/2400/1 ¹	-	-
SD	C3	PB Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes)	-	-	-	1/15/0	-

Type	#	Test Name	Condition	Duration	Qual Device: <u>AM26LV32EIRGYR</u>	QBS Reference (Process): <u>TLV9062ID</u>	QBS Reference (Package): <u>TS3A5017QRGYRQ1</u>	QBS Reference (Package): <u>TPS3850G09ADRCR</u>
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	-
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	-	-	-
CHAR	E5	Electrical Characterization	Min, Typ, Max Temp	-	1/30/0	-	-	-
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	-	-	-
FTY	E6	Final Test Yield	-	-	1/1/0	-	-	-

- QBS: Qual By Similarity
- Qual Device AM26LV32EIRGYR 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/>

TI Qualification ID: R-CHG-2205-035

[1]-Die EOS
1 unit – discounted

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: <u>AM26LV32IDR</u>	Qual Device: <u>AM26LV32INSR</u>	QBS Reference (Process): <u>TLV9062ID</u>	QBS Reference (Package): <u>ADS900E</u>	QBS Reference (Package): <u>PCM1801U</u>	QBS Reference (Package): <u>TCA9546ADR</u>	QBS Reference (Package): <u>SN74LVC8T245NSR</u>
UHAIST	A3	Unbiased HAST	130C/85%RH	96 Hours	-	-	-	-	-	3/231/0	-
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	-	-	1/77/0	3/231/0	3/231/0	3/231/0
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	-	-	-	-	3/231/0	3/231/0	3/231/0
HTOL	B1	Life Test	150C	300 Hours	-	-	3/231/0	-	-	-	-
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	-	3/2400/1 ¹	-	-	-	-
WBS	C1	Ball Shear	76 balls, 3 units min	Wires	1/76/0	1/76/0	-	-	-	-	-
WBP	C2	Bond Pull	76 Wires, 3 units min	Wires	1/76/0	1/76/0	-	-	-	-	-
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes); PB- Free Solder;	-	-	-	3/66/0	-	-	3/66/0	-

Type	#	Test Name	Condition	Duration	Qual Device: AM26LV32IDR	Qual Device: AM26LV32INSR	QBS Reference (Process): TLV9062ID	QBS Reference (Package): ADS900E	QBS Reference (Package): PCM1801U	QBS Reference (Package): TCA9546ADR	QBS Reference (Package): SN74LVC8T245NSR
ESD	E2	ESD CDM	-	250 Volts	1/3/0	1/3/0	-	-	-	-	-
ESD	E2	ESD HBM	-	1000 Volts	1/3/0	-	-	-	-	-	-
LU	E4	Latch-Up	Per JESD78	-	1/3/0	-	-	-	-	-	-
CHAR	E5	Electrical Characterization	Min, Typ, Max Temp	-	1/30/0	-	-	-	-	-	-
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	-	-	-	-	-	-
FTY	E6	Final Test Yield	-	-	1/1/0	1/1/0	-	-	-	-	-

- QBS: Qual By Similarity
- Qual Device AM26LV32IDR is qualified at MSL1 260C
- Qual Device AM26LV32INSR 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-2205-030

[1]-Die EOS
1 unit – discounted

Qualification Results

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

Type	#	Test Name	Condition	Duration	Qual Device: AM26LS32ACDR	QBS Reference (Process): TLV9062ID	QBS Reference (Package): PCM1801U	QBS Reference (Package): TL494IDR
HAST	A2	Biased HAST	130C/85%RH	96 Hours	-	-	-	3/231/0
TC	A4	Temperature Cycle	-65C/150C	500 Cycles	-	-	3/231/0	-
HTSL	A6	High Temperature Storage Life	150C	1000 Hours	-	-	3/231/0	-
HTOL	B1	Life Test	150C	300 Hours	-	3/231/0	-	-
ELFR	B2	Early Life Failure Rate	125C	48 Hours	-	3/2400/1 ¹	-	-
WBP	C2	Bond Pull	76 Wires, 3 units min	Wires	1/76/0	-	-	-
SD	C3	PB-Free Solderability	Precondition w.155C Dry Bake (4 hrs +/- 15 minutes); PB-Free Solder;	-	-	3/66/0	-	-
ESD	E2	ESD CDM	-	250 Volts	-	3/9/0	-	-
ESD	E2	ESD HBM	-	1000 Volts	-	3/9/0	-	-
LU	E4	Latch-Up	Per JESD78	-	-	3/18/0	-	-
CHAR	E5	Electrical Characterization	Min, Typ, Max Temp	-	1/30/0	3/90/0	-	-
CHAR	E5	Electrical Characterization	Per Datasheet Parameters	-	1/30/0	3/90/0	-	-

Type	#	Test Name	Condition	Duration	Qual Device: AM26LS32ACDR	QBS Reference (Process): TLV9062ID	QBS Reference (Package): PCM1801U	QBS Reference (Package): TL494IDR
FTY	E6	Final Test Yield	-	-	1/1/0	-	-	-

- QBS: Qual By Similarity
- Qual Device AM26LS32ACDR 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-2205-024

[1]-Die EOS
1 unit – discounted

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

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