

<b>PCN Number:</b>	20160818000	<b>PCN Date:</b>	Dec. 5, 2016
<b>Title:</b>	OPA857IRGTR/OPA857IRGTT Design Change and Datasheet Updates		
<b>Customer Contact:</b>	<a href="#">PCN Manager</a>	<b>Dept:</b>	Quality Services
<b>Proposed 1<sup>st</sup> Ship Date:</b>	Mar. 5, 2017	<b>Estimated Sample Availability:</b>	Date provided at sample request.
<b>Change Type:</b>			
<input type="checkbox"/>	Assembly Site	<input type="checkbox"/>	Assembly Process
<input checked="" type="checkbox"/>	Design	<input checked="" type="checkbox"/>	Electrical Specification
<input type="checkbox"/>	Test Site	<input type="checkbox"/>	Packing/Shipping/Labeling
<input type="checkbox"/>	Wafer Bump Site	<input type="checkbox"/>	Wafer Bump Material
<input type="checkbox"/>	Wafer Fab Site	<input type="checkbox"/>	Wafer Fab Materials
		<input type="checkbox"/>	Part number change
<b>PCN Details</b>			

**Description of Change:**

This notification is to inform of a design change to the OPA857IRGTx. Affected devices are listed in the Product Affected section of this document. The design changes are summarized as follows:

The design change is a metal change to prevent low-level oscillations at a frequency greater than 4 GHz.

The datasheet number will be changing:

<b>Current</b>	<b>New</b>
Datasheet Number	<b>Datasheet Number</b>
SBOS630C	<b>SBOS630D</b>

The product datasheet(s) is also updated as seen in the change revision history below:



OPA857

SBOS630D – DECEMBER 2013 – REVISED AUGUST 2016

## OPA857 Ultralow-Noise, Wideband, Selectable-Feedback Resistance Transimpedance Amplifier

### 4 Revision History

NOTE: Page numbers for previous revisions may differ from page numbers in the current version.

Changes from Revision C (April 2014) to Revision D	Page
• Changed Features bullets .....	1
• Changed "Precision" to "High-Speed" in 2nd Applications bullet.....	1
• Changed pin configuration drawing and pin functions table.....	4
• Changed Handling Ratings table to ESD Ratings and moved storage temperature to Absolute Maximum Ratings .....	5
• Changed <i>Supply Input Voltage</i> min value from 3.0 to 2.7 in Recommended Operating Conditions .....	5
• Changed VOUT unit from $V_p$ to $V_{pp}$ in Electrical Characteristics condition line .....	6
• Changed all <i>AC Performance</i> values except <i>Closed-Loop Output Impedance</i> .....	6
• Changed test conditions for <i>Equivalent Input-Referred Current Noise</i> parameter in Electrical Characteristics .....	6
• Deleted <i>Operating Voltage</i> from Electrical Characteristics; already in Recommended Operating Conditions .....	7
• Deleted <i>Temperature Range</i> from Electrical Characteristics; already in Recommended Operating Conditions .....	7
• Changed all plots in Typical Characteristics section except figures 17, 35, and 36 .....	8
• Changed 4.5 k $\Omega$ and 18.2 k $\Omega$ to 5 k $\Omega$ and 20 k $\Omega$ , respectively, in first paragraph of <i>Overview</i> section.....	14
• Changed text in <i>Transimpedance Amplifier (TIA) Block</i> section .....	15
• Changed text in <i>Reference Voltage (REF) Block</i> section.....	15
• Changed text in <i>Integrated Test Structure (TEST) Block</i> section .....	15
• Changed Table 2 values.....	17
• Added <i>Test Mode</i> section.....	17
• Changed <i>Application Information</i> section .....	18
• Changed Figure 50; updated pin names .....	24

These changes may be reviewed at the datasheet link provided:

<http://www.ti.com/lit/ds/symlink/opa857.pdf>

#### Reason for Change:

Improved device functionality

#### Anticipated impact on Form, Fit, Function, Quality or Reliability (positive / negative):

None

#### Product Affected: Design Change and datasheet updates

OPA857IRGTR	OPA857IRGTT
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## Qualification Report

### OPA857IRGT die revision to fix oscillation

Approve Date 29-Jun-2016  
Updated 07/01/2016-Added QBS Data

#### Product Attributes

Attributes	Qual Device: OPA857IRGT	QBS Product Reference: OPA857IRGT	QBS Process Reference: CDCM18014RGC	QBS Process Reference: CDCMH52005V3RG	QBS Package Reference: HD3SS0001RLL_PG3.0	QBS Package Reference: HD3SS0001RLL_PG2.0
Assembly Site	CLARK AT	CLARK AT	UTAC	UTAC	CLARK-AT	CLARK-AT
Package Family	VQFN	VQFN	VQFN	QFN	QFN	QFN
Flammability Rating	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0	UL 94 V-0
Wafer Fab Supplier	FFAB	FFAB	FFAB	FFAB	FFAB	FFAB
Wafer Process	1833BICOM3ZL	1833BICOM3ZL	1833BICOM3ZL	1833BICOM3ZL	1833BICOM3ZL_RF	1833BICOM3ZL_RF

- QBS: Qual By Similarity  
- Qual Device OPA857IRGT is qualified at LEVEL2-260CG

#### Qualification Results

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

Type	Test Name / Condition	Duration	Qual Device: OPA857IRGT	QBS Product Reference: OPA857IRGT	QBS Process Reference: CDCM18014RGC	QBS Process Reference: CDCMH52005V3RG	QBS Package Reference: HD3SS0001RLL_PG3.0	QBS Package Reference: HD3SS0001RLL_PG2.0
AC	Autoclave 121C	96 Hours	-	1/77/0	1/77/0	2/154/0	-	1/77/0
ED	Electrical Characterization	Per Datasheet Parameters	Pass	Pass	Pass	Pass	Pass	-
HAST	Biased HAST, 130C/85%RH	96 Hours	-	-	1/77/0	2/154/0	2/149/0	1/77/0
HBM	ESD - HBM	2000 V	1/3/0	-	-	-	3/9/0	-
CDM	ESD - CDM	500 V	1/3/0	-	1/3/0	-	-	-
HTOL	Life Test, 150C	300 Hours	-	1/77/0	-	-	-	-
HTOL	Life Test, 125C	1000 Hours	-	-	1/77/0	2/153/0	1/77/0	-
HTOL	Life Test, 140C	480 Hours, Vcc=4V	-	-	-	-	-	-
HTSL	High Temp. Storage Bake, 150C	1000 Hours	-	-	1/77/0	2/152/0	-	-
HTSL	High Temp. Storage Bake, 170C	420 Hours	-	-	-	-	2/154/0	1/77/0
LU	Latch-up (per JESD78)		1/6/0	2/12/0	1/6/0	2/12/0	3/15/0	-
PD	Physical Dimensions	--	-	-	-	-	3/60/0	-
SD	Solderability	Pb-Free	-	-	-	-	1/25/0	2/50/0
SD	Surface Mount Solderability	Pb	-	-	-	-	1/25/0	2/50/0
TC	Temperature Cycle, -65/150C	500 Cycles	-	-	1/77/0	2/154/0	2/154/0	1/77/0
UHAST	Unbiased HAST, 130C/85%RH	96 Hours	-	1/77/0	-	-	2/154/0	1/77/0
WBP	Bond Pull	Wires	-	-	1/76/0	1/76/0	3/228/0	-
WBS	Ball Bond Shear	Wires	-	-	1/76/0	1/76/0	3/228/0	-

- 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

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

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