

Dual-Channel, 250-MSPS Feedback Receiver IC

Check for Samples: [ADS62PF49](#)

FEATURES

- **Maximum Output Sample Rate: 250 MSPS**
- **Pin-Compatible with [ADS62P49](#)**
- **Variable Output Resolution**
 - **High Resolution Burst Mode with 14-Bit Output:** 73 dB SNR at Low IF, 70.5 dB SNR at 170 MHz
 - **Low Resolution with 9-Bit 250 MSPS or 11-Bit 125 MSPS**
- **Double Data Rate (DDR) LVDS Output**
- **Programmable Gain up to 6 dB for SNR/SFDR Trade-off**
- **90-dB Cross-Talk**
- **Power Consumption of 1.25 W**
- **64-Pin QFN Package (9 mm × 9 mm)**

DESCRIPTION

The ADS62PF49 is a dual-channel feedback receiver IC with sampling rates up to 250 MSPS. It allows a high-resolution, 14-bit output for a limited time followed by a low-resolution mode with a minimum of 8x longer time. It is pin-compatible to the ADS62P49 and ADS62C17 dual ADCs.

The ADS62PF49 has gain options that can be used to improve SFDR performance at lower full-scale input ranges. It includes a dc offset correction loop that can be used to cancel the analog-to-digital conversion (ADC) offset.

It includes internal references while the traditional reference pins and associated decoupling capacitors have been eliminated. The device is specified over the industrial temperature range (–40°C to 85°C).

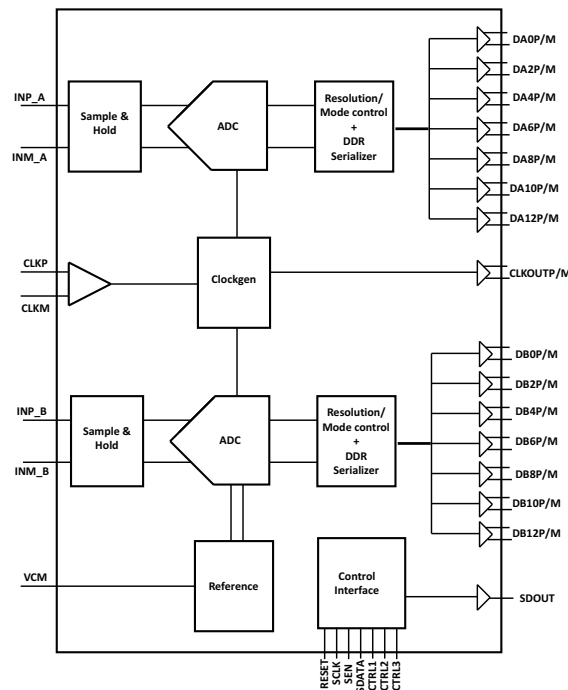
APPLICATIONS

- **Feedpath Path for Multi-Carrier, Multi-Mode Cellular Infrastructure Base Stations**

Table 1. Performance Summary

AT 170-MHz INPUT		PERFORMANCE IN HIGH-RESOLUTION MODE
SFDR, dBc	0-dB gain	75
	6-dB gain	82
SINAD, dBFS	0-dB gain	69.8
	6-dB gain	66.5

ADS62PF49 Block Diagram



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PACKAGING INFORMATION

Orderable part number	Status (1)	Material type (2)	Package Pins	Package qty Carrier	RoHS (3)	Lead finish/ Ball material (4)	MSL rating/ Peak reflow (5)	Op temp (°C)	Part marking (6)
ADS62PF49IRGCR	Active	Production	VQFN (RGC) 64	2000 LARGE T&R	Yes	NIPDAUAG	Level-3-260C-168 HR	-40 to 85	AZ62PF49
ADS62PF49IRGCR.A	Active	Production	VQFN (RGC) 64	2000 LARGE T&R	Yes	NIPDAUAG	Level-3-260C-168 HR	-40 to 85	AZ62PF49
ADS62PF49IRGCT	Active	Production	VQFN (RGC) 64	250 SMALL T&R	Yes	NIPDAUAG	Level-3-260C-168 HR	-40 to 85	AZ62PF49
ADS62PF49IRGCT.A	Active	Production	VQFN (RGC) 64	250 SMALL T&R	Yes	NIPDAUAG	Level-3-260C-168 HR	-40 to 85	AZ62PF49

⁽¹⁾ **Status:** For more details on status, see our [product life cycle](#).

⁽²⁾ **Material type:** When designated, preproduction parts are prototypes/experimental devices, and are not yet approved or released for full production. Testing and final process, including without limitation quality assurance, reliability performance testing, and/or process qualification, may not yet be complete, and this item is subject to further changes or possible discontinuation. If available for ordering, purchases will be subject to an additional waiver at checkout, and are intended for early internal evaluation purposes only. These items are sold without warranties of any kind.

⁽³⁾ **RoHS values:** Yes, No, RoHS Exempt. See the [TI RoHS Statement](#) for additional information and value definition.

⁽⁴⁾ **Lead finish/Ball material:** Parts may have multiple material finish options. Finish options are separated by a vertical ruled line. Lead finish/Ball material values may wrap to two lines if the finish value exceeds the maximum column width.

⁽⁵⁾ **MSL rating/Peak reflow:** The moisture sensitivity level ratings and peak solder (reflow) temperatures. In the event that a part has multiple moisture sensitivity ratings, only the lowest level per JEDEC standards is shown. Refer to the shipping label for the actual reflow temperature that will be used to mount the part to the printed circuit board.

⁽⁶⁾ **Part marking:** There may be an additional marking, which relates to the logo, the lot trace code information, or the environmental category of the part.

Multiple part markings will be inside parentheses. Only one part marking contained in parentheses and separated by a "-" will appear on a part. If a line is indented then it is a continuation of the previous line and the two combined represent the entire part marking for that device.

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TAPE AND REEL INFORMATION



*All dimensions are nominal

Device	Package Type	Package Drawing	Pins	SPQ	Reel Diameter (mm)	Reel Width W1 (mm)	A0 (mm)	B0 (mm)	K0 (mm)	P1 (mm)	W (mm)	Pin1 Quadrant
ADS62PF49IRGCR	VQFN	RGC	64	2000	330.0	16.4	9.3	9.3	1.5	12.0	16.0	Q2

TAPE AND REEL BOX DIMENSIONS



*All dimensions are nominal

Device	Package Type	Package Drawing	Pins	SPQ	Length (mm)	Width (mm)	Height (mm)
ADS62PF49IRGCR	VQFN	RGC	64	2000	350.0	350.0	43.0

GENERIC PACKAGE VIEW

RGC 64

VQFN - 1 mm max height

9 x 9, 0.5 mm pitch

PLASTIC QUAD FLATPACK - NO LEAD



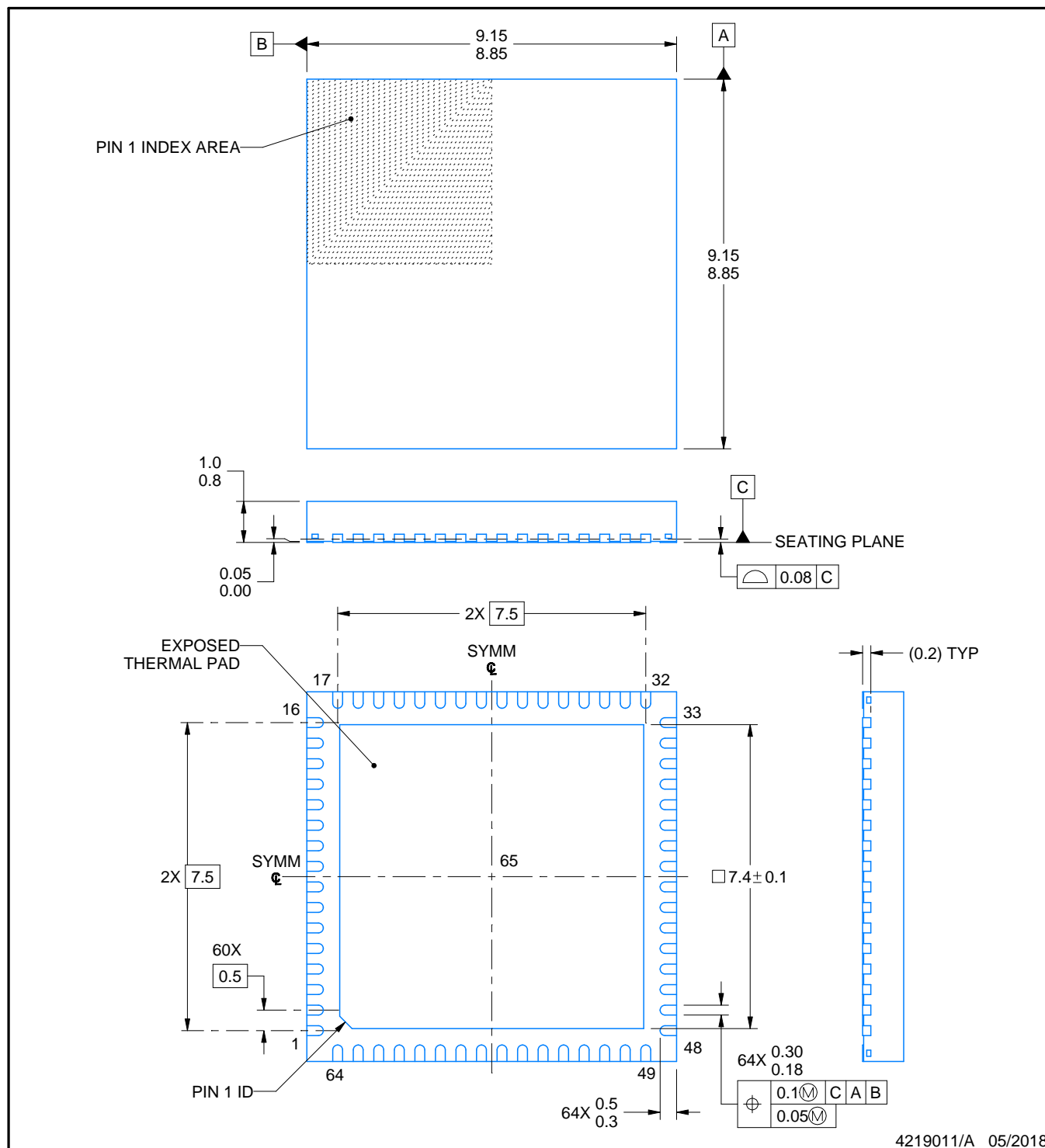
Images above are just a representation of the package family, actual package may vary.
Refer to the product data sheet for package details.

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VQFN - 1 mm max height

PLASTIC QUAD FLATPACK - NO LEAD



NOTES:

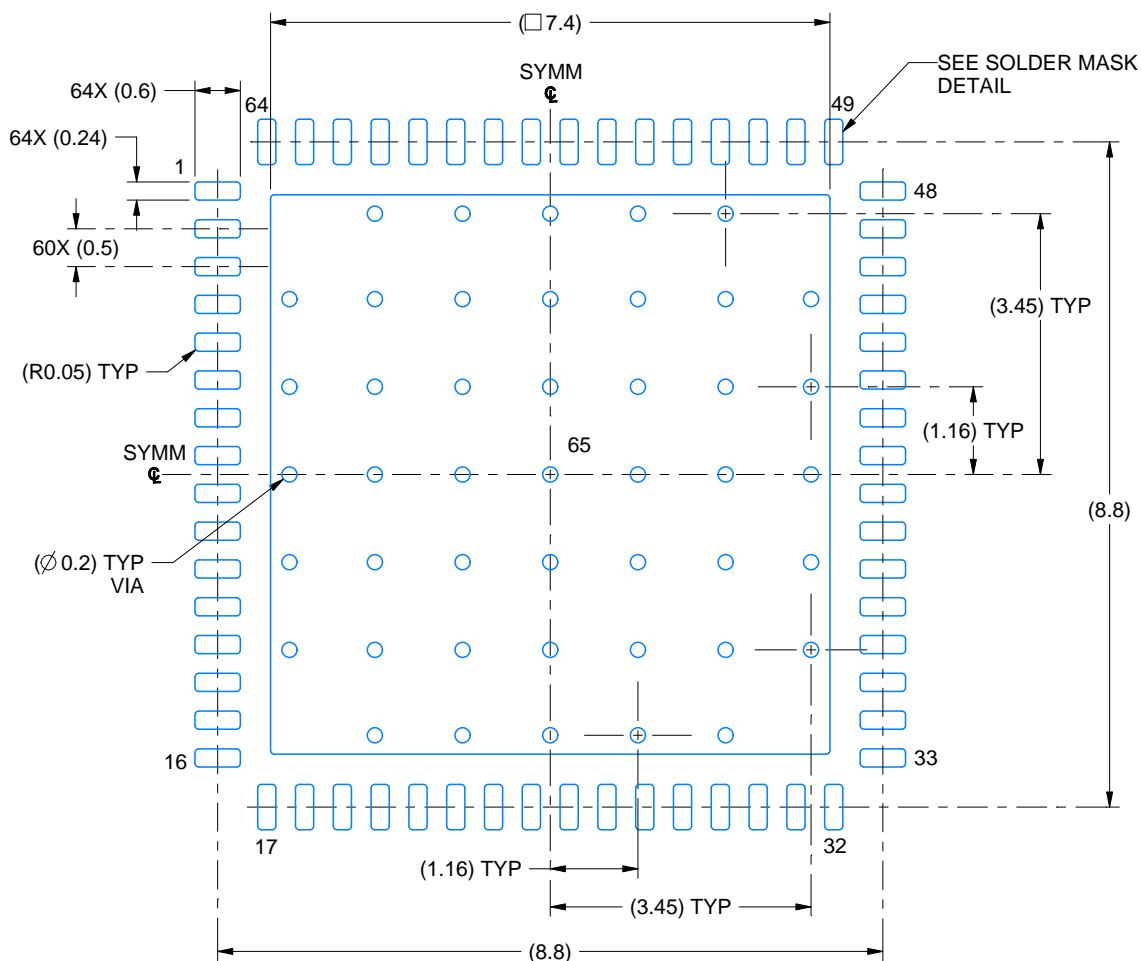
1. All linear dimensions are in millimeters. Any dimensions in parenthesis are for reference only. Dimensioning and tolerancing per ASME Y14.5M.
2. This drawing is subject to change without notice.
3. The package thermal pad must be soldered to the printed circuit board for thermal and mechanical performance.

EXAMPLE BOARD LAYOUT

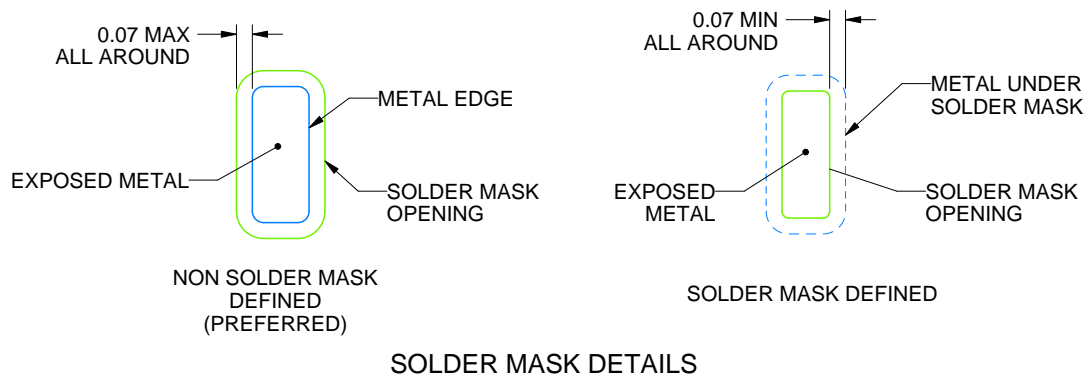
RGC0064H

VQFN - 1 mm max height

PLASTIC QUAD FLATPACK - NO LEAD



LAND PATTERN EXAMPLE
EXPOSED METAL SHOWN
SCALE: 10X



SOLDER MASK DETAILS

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NOTES: (continued)

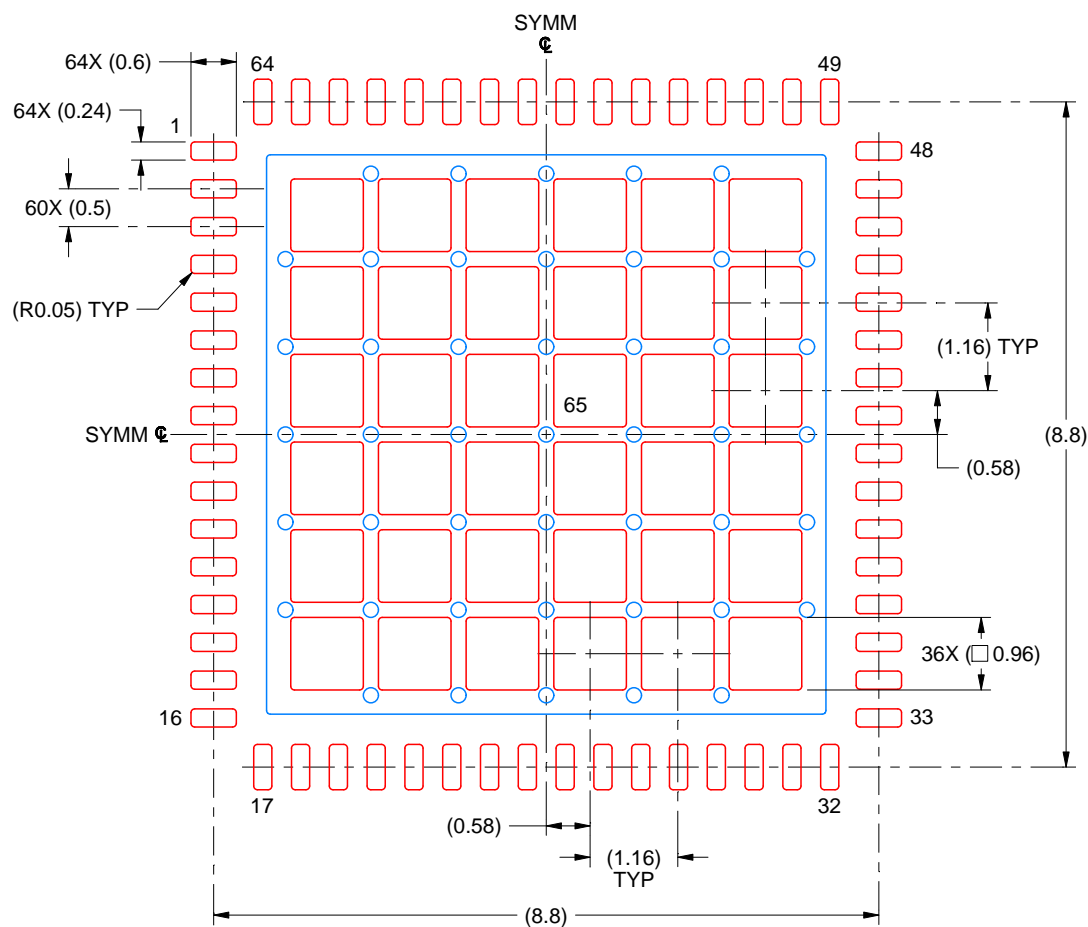
- This package is designed to be soldered to a thermal pad on the board. For more information, see Texas Instruments literature number SLUA271 (www.ti.com/lit/sluea271).
- Vias are optional depending on application, refer to device data sheet. If any vias are implemented, refer to their locations shown on this view. It is recommended that vias under paste be filled, plugged or tented.

EXAMPLE STENCIL DESIGN

RGC0064H

VQFN - 1 mm max height

PLASTIC QUAD FLATPACK - NO LEAD



SOLDER PASTE EXAMPLE
 BASED ON 0.125 MM THICK STENCIL
 SCALE: 10X

EXPOSED PAD 65
 61% PRINTED SOLDER COVERAGE BY AREA UNDER PACKAGE

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NOTES: (continued)

6. Laser cutting apertures with trapezoidal walls and rounded corners may offer better paste release. IPC-7525 may have alternate design recommendations.

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