

LM27762 Low-Noise Positive and Negative Output Integrated Switched Capacitor Plus LDO

1 Features

- Generates Low-Noise Adjustable Positive and Negative Supply Voltages From ± 1.5 V and ± 5 V
- Input Voltage Range 2.7 V to 5.5 V
- ± 250 -mA Output Current
- Inverting Charge Pump Followed by Negative LDO
- 2-MHz Low-Noise Fixed-Frequency Operation
- 2.5- Ω Inverter Output Impedance, $V_{IN} = 5$ V
- LDO Dropout Voltage 30 mV at 100 mA, $V_{OUT} = -5$ V
- 390- μ A Quiescent Current
- Shutdown Quiescent Current to 0.5 μ A (Typical)
- Current Limit and Thermal Protection
- Power Good pin (Active Low)

2 Applications

- Hi-Fi Audio Headphone Amplifiers
- Operational Amplifier Power Biasing
- Powering Data Converters
- Wireless Communication Systems
- Interface Power Supplies
- Handheld Instrumentation

3 Description

The LM27762 delivers very low-noise positive and negative outputs that are adjustable between ± 1.5 V and ± 5 V. Input-voltage range is from 2.7 V to 5.5 V, and output current goes up to ± 250 mA. The device provides a small solution size with few external components.

Negative voltage is generated by a regulated switched-capacitor voltage inverter followed by a low-noise negative LDO. The switched-capacitor voltage inverter of the LM27762 device operates at 2-MHz (typical) switching frequency to reduce output resistance and voltage ripple. Positive voltage is generated from the input by a low-noise positive LDO. With an operating current of only 390 μ A and 0.5- μ A typical shutdown current, the LM27762 provides ideal performance for power amplifier and DAC bias and other high-current, low-noise negative voltage needs.

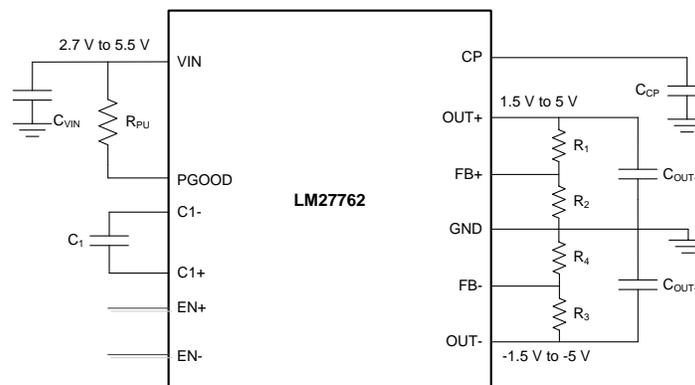
Positive and negative outputs of LM27762 have dedicated enable inputs. These outputs support independent timing for the positive and negative rails for specific system power-sequence needs. Enable inputs can be also shorted together and connected to the input voltage. The LM27762 has an optional Power Good feature.

Device Information⁽¹⁾

PART NUMBER	PACKAGE	BODY SIZE (NOM)
LM27762	WSON (12)	2.00 mm x 3.00 mm

(1) For all available packages, see the orderable addendum at the end of the data sheet.

Simplified Schematic



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4 Device and Documentation Support

4.1 Receiving Notification of Documentation Updates

To receive notification of documentation updates, navigate to the device product folder on ti.com. In the upper right corner, click on *Alert me* to register and receive a weekly digest of any product information that has changed. For change details, review the revision history included in any revised document.

4.2 Community Resources

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4.3 Trademarks

E2E is a trademark of Texas Instruments.

4.4 Electrostatic Discharge Caution



These devices have limited built-in ESD protection. The leads should be shorted together or the device placed in conductive foam during storage or handling to prevent electrostatic damage to the MOS gates.

4.5 Glossary

[SLYZ022](#) — *TI Glossary*.

This glossary lists and explains terms, acronyms, and definitions.

5 Mechanical, Packaging, and Orderable Information

The following pages include mechanical, packaging, and orderable information. This information is the most current data available for the designated devices. This data is subject to change without notice and revision of this document. For browser-based versions of this data sheet, refer to the left-hand navigation.

PRODUCT PREVIEW

PACKAGING INFORMATION

Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan (2)	Lead/Ball Finish (6)	MSL Peak Temp (3)	Op Temp (°C)	Device Marking (4/5)	Samples
LM27762DSSR	PREVIEW	WSON	DSS	12	3000	TBD	Call TI	Call TI	-40 to 85		
LM27762DSST	PREVIEW	WSON	DSS	12	250	TBD	Call TI	Call TI	-40 to 85		

(1) The marketing status values are defined as follows:

ACTIVE: Product device recommended for new designs.

LIFEBUY: TI has announced that the device will be discontinued, and a lifetime-buy period is in effect.

NRND: Not recommended for new designs. Device is in production to support existing customers, but TI does not recommend using this part in a new design.

PREVIEW: Device has been announced but is not in production. Samples may or may not be available.

OBSOLETE: TI has discontinued the production of the device.

(2) Eco Plan - The planned eco-friendly classification: Pb-Free (RoHS), Pb-Free (RoHS Exempt), or Green (RoHS & no Sb/Br) - please check <http://www.ti.com/productcontent> for the latest availability information and additional product content details.

TBD: The Pb-Free/Green conversion plan has not been defined.

Pb-Free (RoHS): TI's terms "Lead-Free" or "Pb-Free" mean semiconductor products that are compatible with the current RoHS requirements for all 6 substances, including the requirement that lead not exceed 0.1% by weight in homogeneous materials. Where designed to be soldered at high temperatures, TI Pb-Free products are suitable for use in specified lead-free processes.

Pb-Free (RoHS Exempt): This component has a RoHS exemption for either 1) lead-based flip-chip solder bumps used between the die and package, or 2) lead-based die adhesive used between the die and leadframe. The component is otherwise considered Pb-Free (RoHS compatible) as defined above.

Green (RoHS & no Sb/Br): TI defines "Green" to mean Pb-Free (RoHS compatible), and free of Bromine (Br) and Antimony (Sb) based flame retardants (Br or Sb do not exceed 0.1% by weight in homogeneous material)

(3) MSL, Peak Temp. - The Moisture Sensitivity Level rating according to the JEDEC industry standard classifications, and peak solder temperature.

(4) There may be additional marking, which relates to the logo, the lot trace code information, or the environmental category on the device.

(5) Multiple Device Markings will be inside parentheses. Only one Device Marking contained in parentheses and separated by a "~" will appear on a device. If a line is indented then it is a continuation of the previous line and the two combined represent the entire Device Marking for that device.

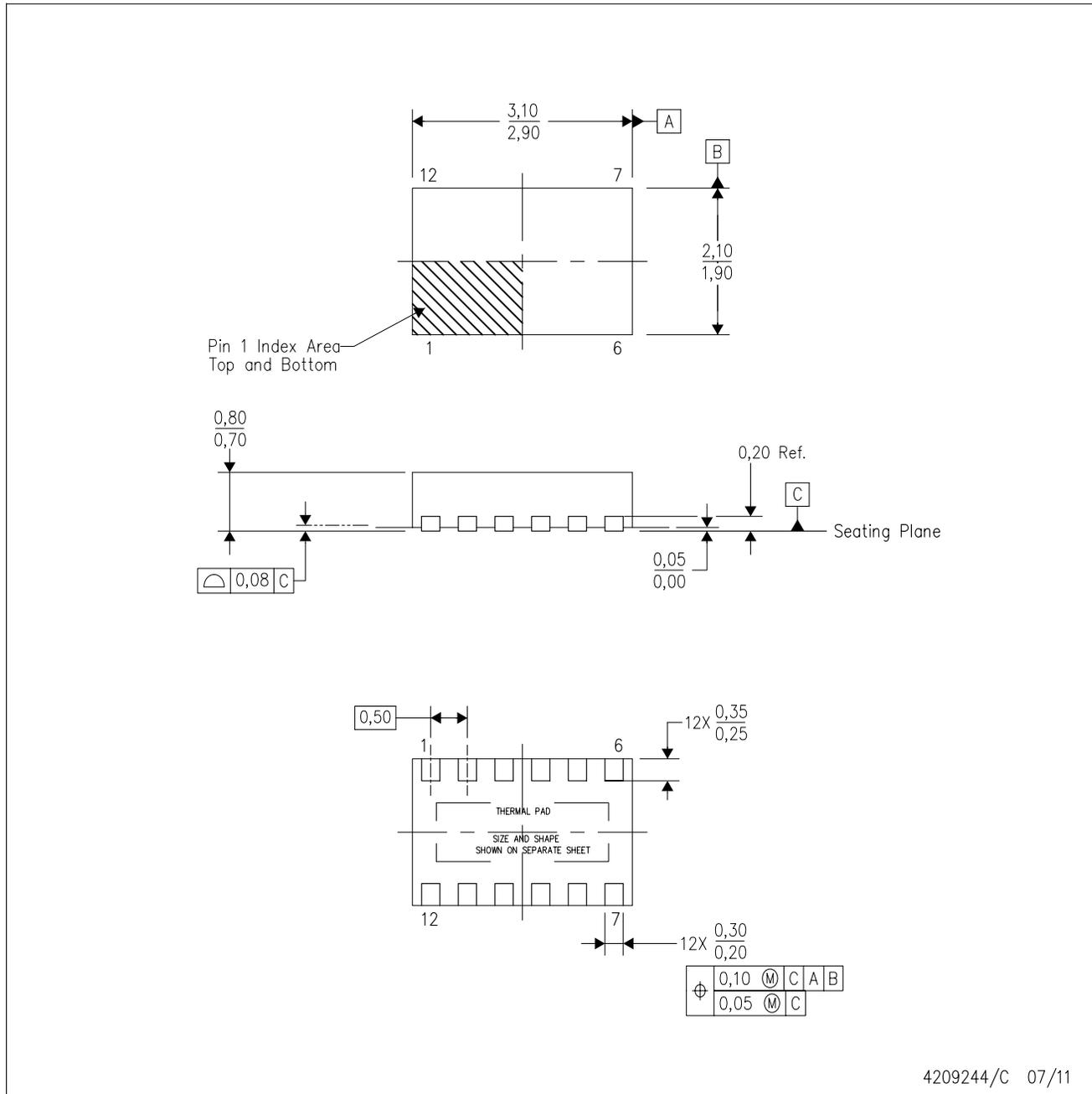
(6) Lead/Ball Finish - Orderable Devices may have multiple material finish options. Finish options are separated by a vertical ruled line. Lead/Ball Finish values may wrap to two lines if the finish value exceeds the maximum column width.

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DSS (R-PWSON-N12)

PLASTIC SMALL OUTLINE NO-LEAD



4209244/C 07/11

- NOTES:
- All linear dimensions are in millimeters.
 - This drawing is subject to change without notice.
 - SON (Small Outline No-Lead) package configuration.
 - The package thermal pad must be soldered to the board for thermal and mechanical performance.
 - See the additional figure in the Product Data Sheet for details regarding the exposed thermal pad features and dimensions.

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