

Radiation Hardened Programmable Low Power Op Amps

HS-3530ARH, HS-3530AEH

The HS-3530ARH, HS-3530AEH are low power operational amplifiers, which are internally compensated monolithic devices offering a wide range of performance specifications. Parameters such as power dissipation, slew rate, bandwidth, noise and input DC parameters are programmed by selecting an external resistor or current source. Supply voltages as low as $\pm 3V$ may be used with little degradation of AC performance. Operation from $-55^{\circ}C$ to $+125^{\circ}C$ is guaranteed.

A major advantage of the HS-3530ARH, HS-3530AEH is that operating characteristics remain virtually constant over a wide supply range ($\pm 3V$ to $\pm 15V$), allowing the amplifiers to offer maximum performance in almost any system, including battery operated equipment. A primary application for these devices is in active filtering and conditioning for a wide variety of signals that differ in frequency and amplitude. Also, by modulating the set current, they can be used for designs such as current controlled oscillators/modulators, sample and hold circuits and variable active filters.

Specifications

Specifications for Rad Hard QML devices are controlled by the Defense Logistics Agency Land and Maritime (DLA). The SMD numbers listed below must be used when ordering.

Detailed Electrical Specifications for the HS-3530ARH, HS-3530AEH are contained in SMD [5962-95687](https://www.intersil.com/products/hs-3530arh). A "hot-link" to the DLA website is also provided on the Product Information page for downloading the document.

www.intersil.com/products/hs-3530arh

The Intersil Quality Management Plan, listing all screening operations, is available on our website.

www.intersil.com/design/quality/manuals.asp

Ordering Information

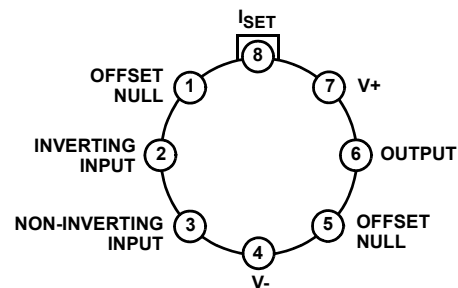
ORDERING NUMBER	PART NUMBER	TEMP. RANGE ($^{\circ}C$)
5962F9568701QGA	HS2-3530ARH-8	-55 to +125
5962F9568701VGA	HS2-3530ARH-Q	-55 to +125
5962F9568702VGA	HS2-3530AEH-Q	-55 to +125
5962F9568701VXC	HS9-3530ARH-Q	-55 to +125
5962F9568702VXC	HS9-3530AEH-Q	-55 to +125
5962F9568701V9A	HS0-3530ARH-Q	-55 to +125
5962F9568702V9A	HS0-3530AEH-Q	-55 to +125
HS2-3530ARH/PROTO	HS2-3530ARH/Proto	-55 to +125
HS9-3530ARH/PROTO	HS9-3530ARH/Proto	-55 to +125
HS0-3530ARH/SAMPLE	HS0-3530ARH/SAMPLE	-55 to +125

Features

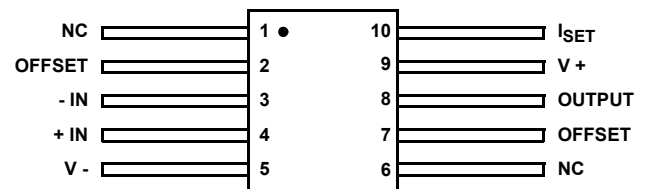
- Radiation performance
 - Single event latch-up Immune (RSG DI Process)
 - High dose rate (50-300rad(Si)/s). 300krad(Si)
 - Low dose rate (0.01rad(Si)/s) 50krad(Si)
- Wide range AC programming
 - Slew rate 0.025 to 0.1V/ μ s
 - Gain X bandwidth. 30kHz to 750kHz
- Wide range DC programming
 - Power supply range $\pm 3.0V$ to $\pm 15V$
- Supply current 15 μ A to 150 μ A
- Output current 0.25mA to 2.5mA
- Quiescent power. 4.8mW (max)
- Dielectrically isolated device islands
- Short circuit protection
- Full $-55^{\circ}C$ to $+125^{\circ}C$ military temperature range

Pin Configurations

HS2-3530ARH, HS2-3530AEH (CAN), MACY1-X8
TOP VIEW



HS9-3530ARH, HS9-3530AEH (FLATPACK), CDFP3-F10
TOP VIEW



HS-3530ARH, HS-3530AEH

Die Characteristics

DIE DIMENSIONS:

1720 μ m x 1390 μ m x 533 μ m \pm 25.4 μ m
(68 mils x 55 mils x 21 mils \pm 1 mil)

INTERFACE MATERIALS

GLASSIVATION

Type: Silox (SiO₂)
Thickness: 8.0kÅ \pm 1.0kÅ

TOP METALLIZATION

Type: AlSiCu
Thickness: 16.0kÅ \pm 2kÅ

SUBSTRATE:

Radiation Hardened Silicon Gate,
Dielectric Isolation

BACKSIDE FINISH:

Silicon

ASSEMBLY RELATED INFORMATION

SUBSTRATE POTENTIAL:

Unbiased (DI)

ADDITIONAL INFORMATION

WORST CASE CURRENT DENSITY:

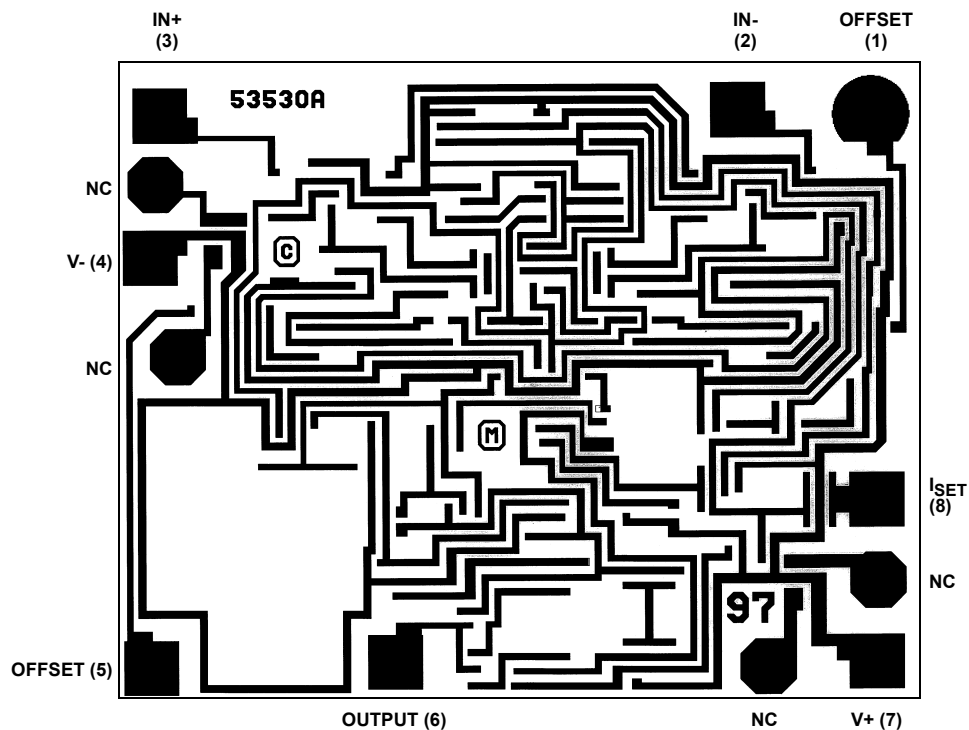
$<2.0 \times 10^5$ A/cm²

TRANSISTOR COUNT:

49

Metallization Mask Layout

Pin Numbers shown are for the Can Package
HS-3530ARH, HS-3530AEH



Revision History

The revision history provided is for informational purposes only and is believed to be accurate, but not warranted. Please go to the web to make sure that you have the latest revision.

DATE	REVISION	CHANGE
February 9, 2015	FN4653.3	Added Rev History and About Intersil Verbiage. Updated datasheet by removing sentence that was not in compliance.

About Intersil

Intersil Corporation is a leading provider of innovative power management and precision analog solutions. The company's products address some of the largest markets within the industrial and infrastructure, mobile computing and high-end consumer markets.

For the most updated datasheet, application notes, related documentation and related parts, please see the respective product information page found at www.intersil.com.

You may report errors or suggestions for improving this datasheet by visiting www.intersil.com/ask.

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For additional products, see www.intersil.com/en/products.html

Intersil products are manufactured, assembled and tested utilizing ISO9001 quality systems as noted in the quality certifications found at www.intersil.com/en/support/qualandreliability.html

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