

Fact Sheet

Military Semiconductor Products

THS4031M / 5962-9959501QxA

SGYV090, May 2000

120-MHZ LOW-NOISE, HIGH-SPEED AMPLIFIER

HIGHLIGHTS

The THS4031 is an ultra-low voltage noise, high-speed, voltage feedback amplifier that is ideal for applications requiring low voltage noise, including communication and imaging. The THS4031 offers very good AC performance with 120-MHz bandwidth, 100-V/ μ s slew rate, and 60-ns settling time (0.1%). The THS4031 is stable at gains of 2 (-1) or greater. This amplifier has a high drive capability of 90 mA and draws only 8.5-mA supply current. With total harmonic distortion (THD) of -81 dBc at $f = 1$ MHz, the THS4031 is ideally suited for applications requiring low distortion.

KEY FEATURES/BENEFITS

- Ultra-low 1.6-nV/ $\sqrt{\text{Hz}}$ Voltage Noise
- High Speed
 - 120-MHz Bandwidth ($G = 2$ (-1), -3 dB)
 - 100-V/ μ s Slew Rate
- Stable in Gains of 2 (-1) or greater
- Very Low Distortion
 - THD = -81 dBc ($f = 1$ MHz, $R_L = 150\Omega$)
 - THD = -96 dBc ($f = 1$ MHz, $R_L = 1\text{ k}\Omega$)
- Low 0.5-mV (Typ) Input Offset Voltage
- 90-mA Output Current Drive (Typical)
- ± 5 -V to ± 15 -V Typical Operation

DIE SIZE

The current die has a size of: 40 mils x 39 mils.

TECHNOLOGY

- BICOM-1
- ESD level: 1 kV

PACKAGING

Package Option: 8-pin Ceramic Dual in Line Package (JG)
20-pin Leadless Ceramic Chip Carrier (FK)

POWER DISSIPATION

The table below shows modeled data. This data can be used for approximating system thermal characteristics:

Package Thermal Data

Package	R _{θJA}	R _{θJC}
8-pin DIP	180°C/W	14.52°C/W
20-pin LCC	65°C/W*	22°C/W*

*modeled data

Note: much better thermal impedances can be achieved by using air flow or by increasing metal backplane thickness or trace area in the Printed Circuit Board (PCB) that is used.

PROCESS/PERFORMANCE OPTIONS

The THS4031MxxB are processed to MIL-PRF-38535. The DSCC Standard Microcircuit Drawings (SMD) for this device is given below.

DSCC SMD

TI Parent	DSCC SMD
THS4031MFKB	5962-9959501Q2A
THS4031MJGB	5962-9959501QPA
THS4031MJG	N/A

SUPPORT

You can access data sheets via TI's home page on the internet (<http://www.ti.com>) or reference the literature number **SL0S224C** when contacting the Product Information Center (PIC).

For additional information on this and other Mixed Signal/Analog Products, contact the PIC or visit our Mixed Signal home page at:

http://www.ti.com/sc/docs/military/product/mix_sig/mixsig_1.htm

Product Information Center

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