Data Sheet | October 1999 | File Number 2930.3

Radiation Hardened Quad Differential Line Receiver

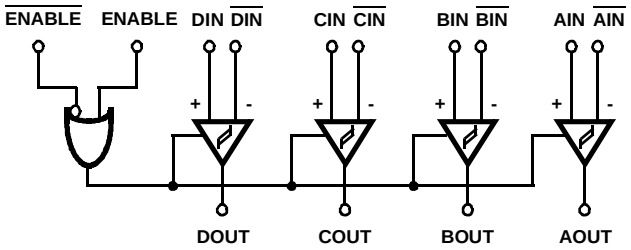
The Intersil HS-26CT32RH is a differential line receiver designed for digital data transmission over balanced lines and meets the requirements of EIA standard RS-422. Radiation hardened CMOS processing assures low power consumption, high speed, and reliable operation in the most severe radiation environments.

The HS-26CT32RH has an input sensitivity typically of 200mV over the common mode input voltage range of ±7V. The receivers are also equipped with input fail safe circuitry, which causes the outputs to go to a logic “1” when the inputs are open. Enable and Disable functions are common to all four receivers.

Specifications for Rad Hard QML devices are controlled by the Defense Supply Center in Columbus (DSCC). The SMD numbers listed here must be used when ordering.

Detailed Electrical Specifications for these devices are contained in SMD 5962-95631. A “hot-link” is provided on our homepage for downloading.
http://www.intersil.com/spacedefense/space.htm

Logic Diagram



Ordering Information

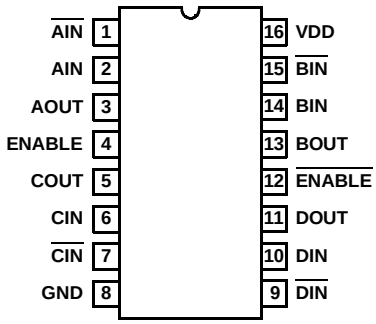
ORDERING NUMBER	INTERNAL MKT. NUMBER	TEMP. RANGE (^{O}C)
5962F9563101QEC	HS1-26CT32RH-8	-55 to 125
5962F9563101QXC	HS9-26CT32RH-8	-55 to 125
5962F9563101V9A	HS0-26CT32RH-Q	25
5962F9563101VEC	HS1-26CT32RH-Q	-55 to 125
5962F9563101VXC	HS9-26CT32RH-Q	-55 to 125
HS1-26CT32RH/PROTO	HS1-26CT32RH/PROTO	-55 to 125
HS9-26CT32RH/PROTO	HS9-26CT32RH/PROTO	-55 to 125

Features

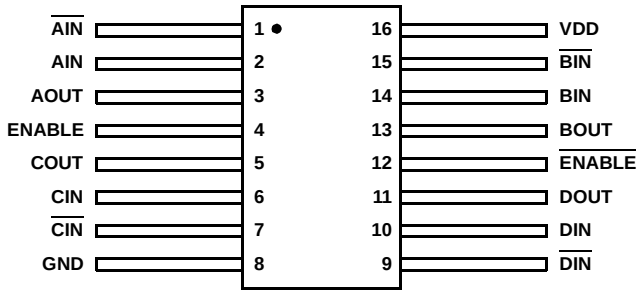
- Electrically Screened to SMD # 5962-95631
- QML Qualified per MIL-PRF-38535 Requirements
- 1.2 Micron Radiation Hardened CMOS
  - Total Dose . . . . . .Up to 300kRAD(Si)
- Latchup Free
- EIA RS-422 Compatible Outputs
- TTL Compatible Inputs
- Input Fail Safe Circuitry
- High Impedance Inputs when Disabled or Powered Down
- Low Power Dissipation Standby (Max). 138mW
- Single 5V Supply
- Full Military Temperature Range . . . . . -55^{O}C to 125^{O}C

Pinouts

HS1-26CT32RH (SBDIP) CDIP2-T16
TOP VIEW



HS9-26CT32RH (FLATPACK) CDFP4-F16
TOP VIEW



Die Characteristics

DIE DIMENSIONS:

84 mils x 130 mils
(2140µm x 3290µm)

INTERFACE MATERIALS:

Glassivation:

Type: PSG (Phosphorus Silicon Glass)
Thickness: 10kÅ ±1kÅ

Top Metallization:

M1: Mo/Tiw
Thickness: 5800Å
M2: Al/Si/Cu
Thickness: 10kÅ ±1kÅ

Substrate:

AVLSI1RA

Backside Finish:

Silicon

ASSEMBLY RELATED INFORMATION:

Substrate Potential:

V_{DD} (When Powered Up)

ADDITIONAL INFORMATION:

Worst Case Current Density:

$<2.0 \times 10^5 A/cm^2$

Transistor Count:

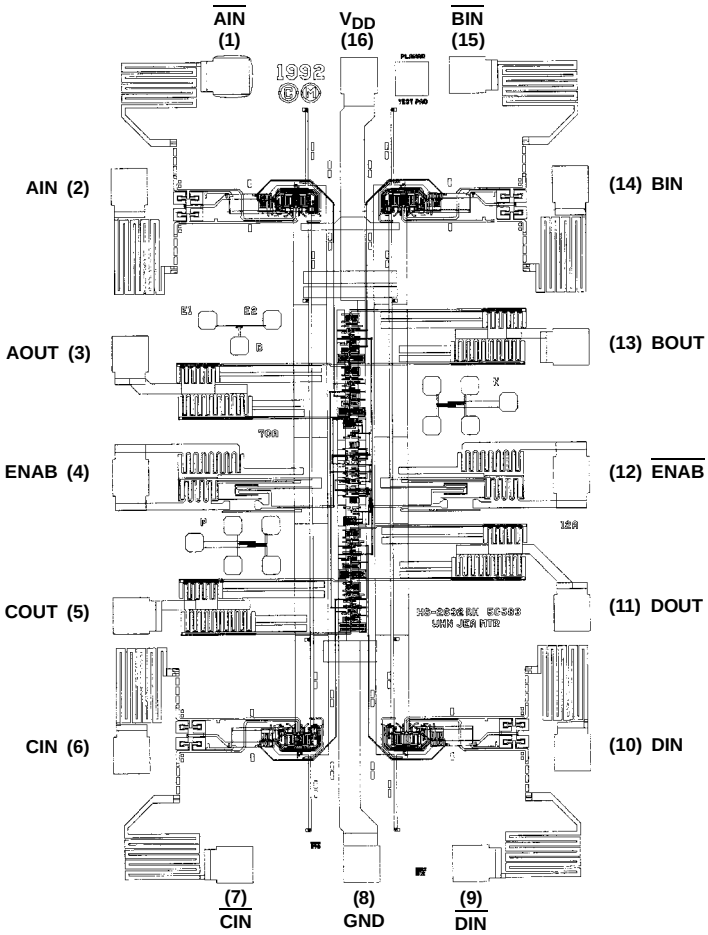
240

Bond Pad Size:

110µm x 100µm

Metallization Mask Layout

HS-26CT32RH



All Intersil semiconductor products are manufactured, assembled and tested under **ISO9000** quality systems certification.