Data Sheet | August 7, 2008 | FN2930.4

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 in the “Ordering Information” 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/military/

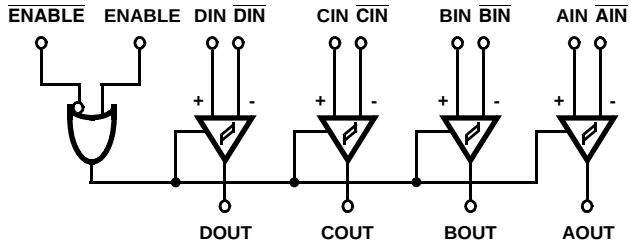
Features

- 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)
- Latch-up Free
- EIA RS-422 Compatible Outputs
- Operation with TTL Based on $V_{IH} = V_{DD}/2$
- 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°C to +125°C

Applications

- Line Receiver for MIL-STD-1553 Serial Data Bus
- Line Receiver for RS422

Logic Diagram

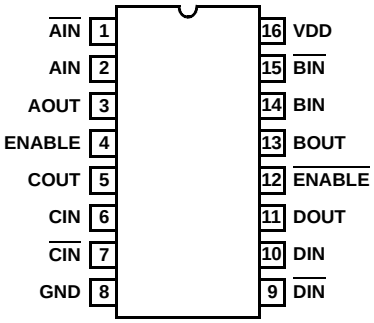


Ordering Information

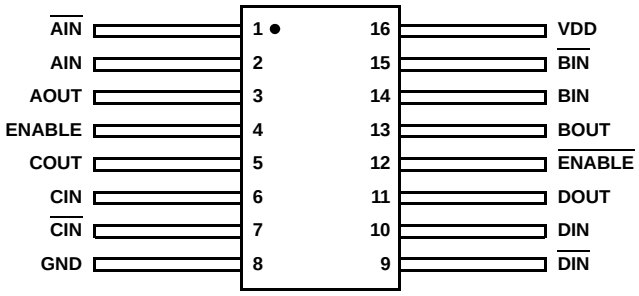
ORDERING NUMBER	INTERNAL MKT. NUMBER	PART MARKING	TEMP. RANGE (°C)	PACKAGE	PKG. DWG. #
5962F9563101QEC	HS1-26CT32RH-8	Q 5962F95 63101QEC	-55 to +125	16 Ld SBDIP	D16.3
5962F9563101QXC	HS9-26CT32RH-8	Q 5962F95 63101QXC	-55 to +125	16 Ld FLATPACK	K16.A
5962F9563101V9A	HS0-26CT32RH-Q		-55 to +125		
5962F9563101VEC	HS1-26CT32RH-Q	Q 5962F95 63101VEC	-55 to +125	16 Ld SBDIP	D16.3
5962F9563101VXC	HS9-26CT32RH-Q	Q 5962F95 63101VXC	-55 to +125	16 Ld FLATPACK	K16.A
HS1-26CT32RH/PROTO	HS1-26CT32RH/PROTO	HS1- 26CT32RH /PROTO	-55 to +125	16 Ld SBDIP	D16.3
HS9-26CT32RH/PROTO	HS9-26CT32RH/PROTO	HS9- 26CT32RH /PROTO	-55 to +125	16 Ld FLATPACK	K16.A

Pinouts

HS1-26CT32RH
(16 LD SBDIP, CDIP2-T16)
TOP VIEW



HS9-26CT32RH
(16 LD 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