

Data Sheet August 2000 File Number 3402.3

Radiation Hardened Quad Differential Line Receiver

The Intersil HS-26C32RH 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-26C32RH has an input sensitivity typically of 200mV over the common mode input voltage range of ± 7 V. 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.

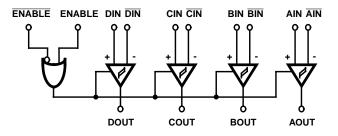
Specifications for Rad Hard QML devices are controlled by the Defense Supply Center in Columbus (DSCC). The SMD numbers listed here must be used when ordering.

Detailed Electrical Specifications for these devices are contained in SMD 5962-95689. A "hot-link" is provided on our homepage for downloading. www.intersil.com/spacedefense/space.asp

Ordering Information

ORDERING NO.	INTERNAL MKT. NO.	TEMP. RANGE (°C)
5962F9568901QEC	HS1-26C32RH-8	-55 to 125
5962F9568901QXC	HS9-26C32RH-8	-55 to 125
5962F9568901V9A	HS0-26C32RH-Q	25
5962F9568901VEC	HS1-26C32RH-Q	-55 to 125
5962F9568901VXC	HS9-26C32RH-Q	-55 to 125
HS1-26C32RH/PROTO	HS1-26C32RH/PROTO	-55 to 125
HS9-26C32RH/PROTO	HS9-26C32RH/PROTO	-55 to 125

Logic Diagram

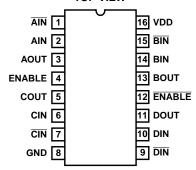


Features

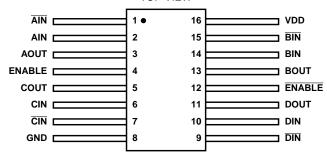
- Electrically Screened to SMD # 5962-95689
- QML Qualified per MIL-PRF-38535 Requirements
- 1.2 Micron Radiation Hardened CMOS
- Latchup Free
- EIA RS-422 Compatible Inputs
- CMOS Compatible Outputs
- Input Fail Safe Circuitry
- High Impedance Inputs when Disabled or Powered Down
- · Low Power Dissipation 138mW Standby (Max)
- · Single 5V Supply
- Full -55°C to 125°C Military Temperature Range

Pinouts

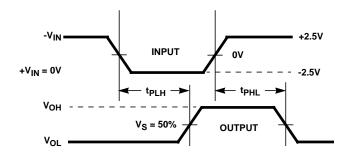
HS1-26C32RH 16 LEAD CERAMIC SIDEBRAZE DIP MIL-STD-1835: CDIP2-T16 TOP VIEW



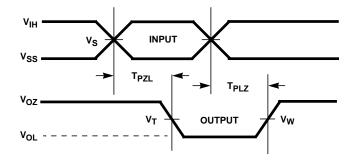
HS9-26C32RH 16 LEAD FLATPACK MIL-STD-1835: CDFP4-F16 TOP VIEW



Propagation Delay Timing Diagram



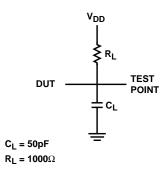
Three-State Low Timing Diagram



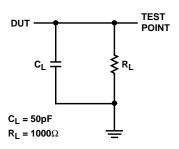
THREE-STATE LOW VOLTAGE LEVELS

PARAMETER	HS-26C32RH	UNITS
V_{DD}	4.50	V
V _{IH}	4.50	V
V _S	2.25	V
V _T	50	%
V _W	V _{OL} + 0.5	V
GND	0	V

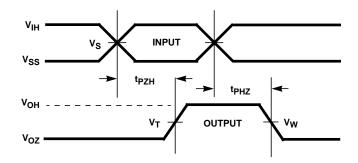
Three-State Low Load Circuit



Propagation Delay Load Circuit



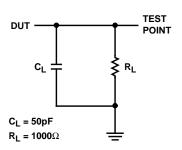
Three-State High Timing Diagrams



THREE-STATE HIGH VOLTAGE LEVELS

PARAMETER	HS-26C32RH	UNITS
V_{DD}	4.50	V
V _{IH}	4.50	V
VS	2.25	V
V _T	50	%
V _W	V _{OH} - 0.5	V
GND	0	V

Three-State High Load Circuit



Die Characteristics

DIE DIMENSIONS:

84 mils x 130 mils (2140μm x 3290μm)

INTERFACE MATERIALS:

Glassivation:

Type: SiO₂

Thickness: 10kÅ ± 1kÅ

Top Metallization:

M1: Mo/Tiw Thickness: 5800Å M2: Al/Si/Cu Thickness: 5800Å

Worst Case Current Density:

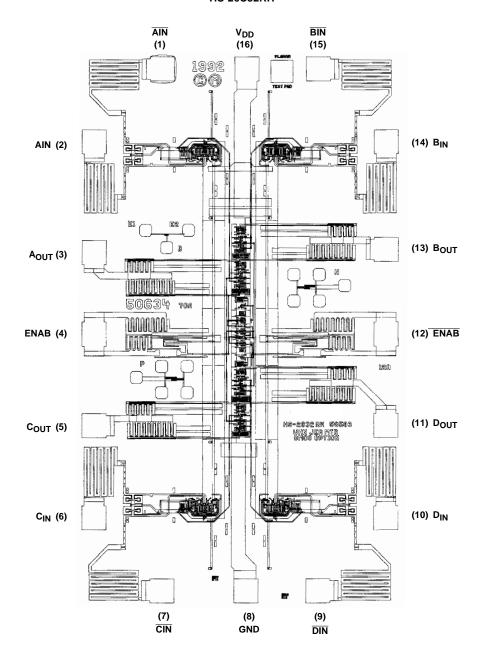
 $< 2.0 \times 10^5 \text{A/cm}^2$

Bond Pad Size:

110μm x 100μm

Metallization Mask Layout

HS-26C32RH



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