

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 ±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.

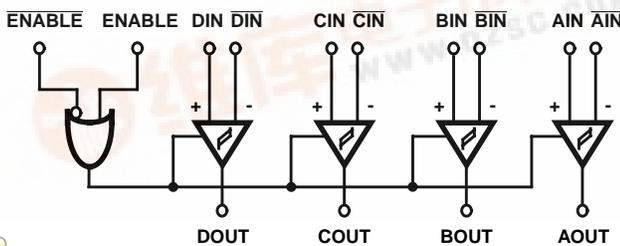
Specifications for Rad Hard QML devices are controlled by the Defense Supply Center in Columbus (DSCC). The SMD numbers listed here must be used when ordering.

Detailed Electrical Specifications for these devices are contained in SMD 5962-95689. 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

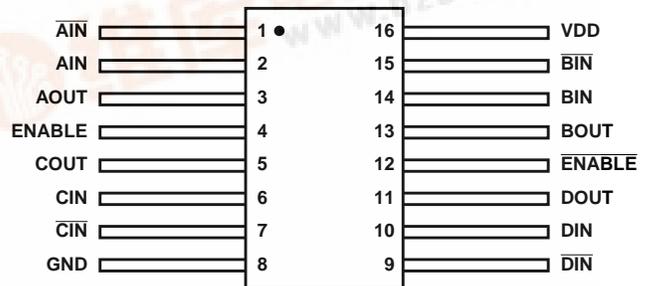
- Electrically Screened to SMD # 5962-95689
- QML Qualified per MIL-PRF-38535 Requirements
- 1.2 Micron Radiation Hardened CMOS
 - Total Dose. 300 krad(Si) (Max)
- Latchup Free
- EIA RS-422 Compatible Inputs
- CMOS Compatible Outputs
- Input Fail Safe Circuitry
- High Impedance Inputs when Disabled or 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**

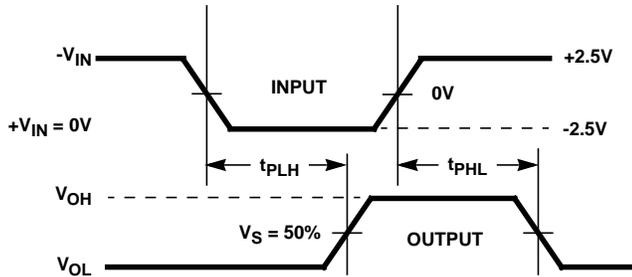


**HS9-26C32RH 16 LEAD FLATPACK
MIL-STD-1835: CDFP4-F16
TOP VIEW**

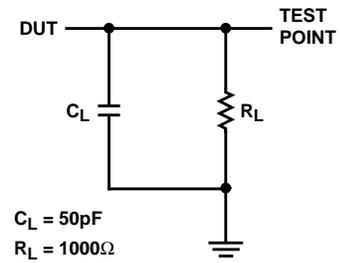


HS-26C32RH

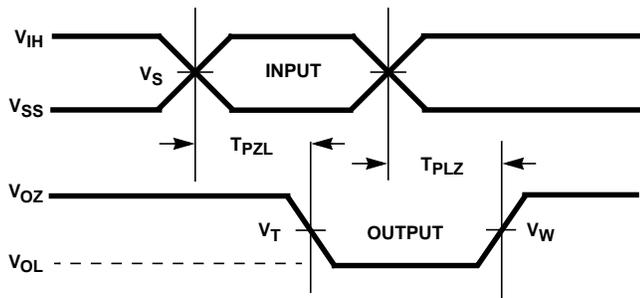
Propagation Delay Timing Diagram



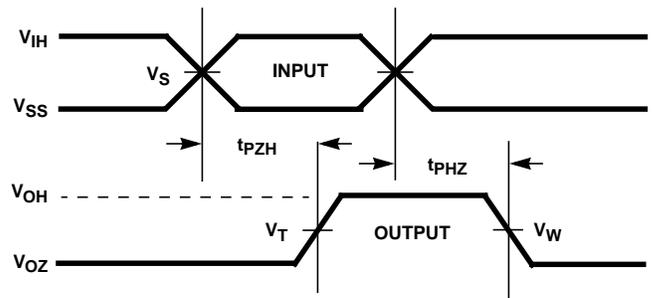
Propagation Delay Load Circuit



Three-State Low Timing Diagram



Three-State High Timing Diagrams



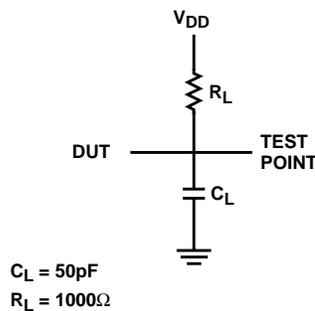
THREE-STATE LOW VOLTAGE LEVELS

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

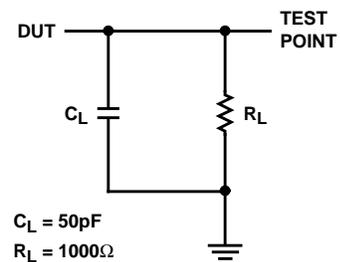
THREE-STATE HIGH VOLTAGE LEVELS

PARAMETER	HS-26C32RH	UNITS
V_{DD}	4.50	V
V_{IH}	4.50	V
V_S	2.25	V
V_T	50	%
V_W	$V_{OH} - 0.5$	V
GND	0	V

Three-State Low Load Circuit



Three-State High Load Circuit



HS-26C32RH

Die Characteristics

DIE DIMENSIONS:

84 mils x 130 mils
(2140 μ m x 3290 μ m)

INTERFACE MATERIALS:

Glassivation:

Type: SiO₂
Thickness: 10k Å \pm 1k Å

Top Metallization:

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

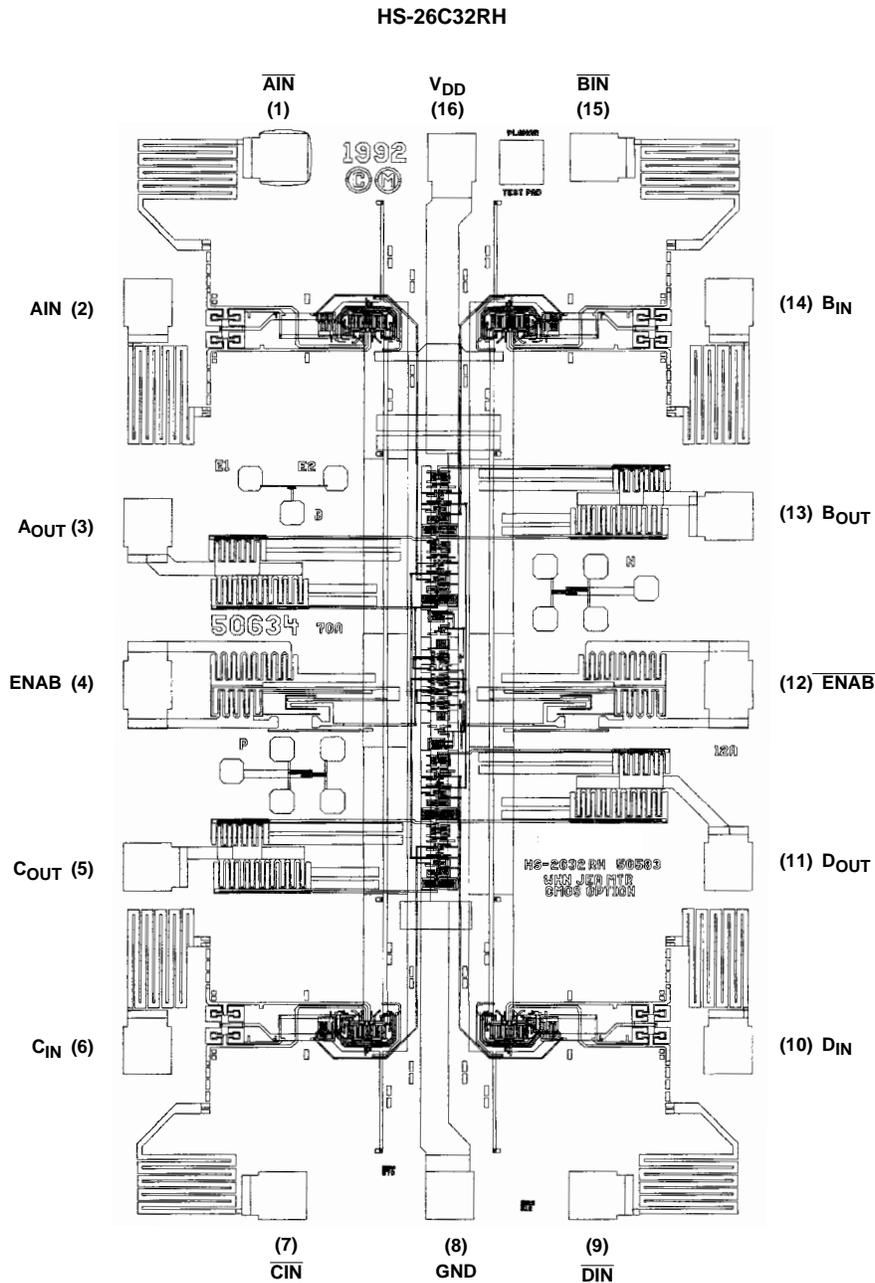
Worst Case Current Density:

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

Bond Pad Size:

110 μ m x 100 μ m

Metallization Mask Layout



HS-26C32RH

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

Intersil semiconductor products are sold by description only. Intersil Corporation reserves the right to make changes in circuit design and/or specifications at any time without notice. Accordingly, the reader is cautioned to verify that data sheets are current before placing orders. Information furnished by Intersil is believed to be accurate and reliable. However, no responsibility is assumed by Intersil or its subsidiaries for its use; nor for any infringements of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of Intersil or its subsidiaries.

For information regarding Intersil Corporation and its products, see web site www.intersil.com

Sales Office Headquarters

NORTH AMERICA

Intersil Corporation
P. O. Box 883, Mail Stop 53-204
Melbourne, FL 32902
TEL: (321) 724-7000
FAX: (321) 724-7240

EUROPE

Intersil SA
Mercure Center
100, Rue de la Fusee
1130 Brussels, Belgium
TEL: (32) 2.724.2111
FAX: (32) 2.724.22.05

ASIA

Intersil Ltd.
8F-2, 96, Sec. 1, Chien-kuo North,
Taipei, Taiwan 104
Republic of China
TEL: 886-2-2515-8508
FAX: 886-2-2515-8369