

# Radiation Hardened 3.3V Quad Differential Line Receiver

## HS-26CLV32RH

The Intersil HS-26CLV32RH is a radiation hardened 3.3V quad differential line receiver designed for digital data transmission over balanced lines, in low voltage, RS-422 protocol applications. Radiation hardened CMOS processing assures low power consumption, high speed, and reliable operation in the most severe radiation environments.

The HS-26CLV32RH has an input sensitivity of 200mV (Typ) over a common mode input voltage range of -4V to +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. The device has unique inputs that remain high impedance when the receiver is disabled or powered-down, maintaining signal integrity in multi-receiver applications.

**Specifications for Rad Hard QML devices are controlled by the Defense Logistics Agency Land and Maritime (DLA). 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.

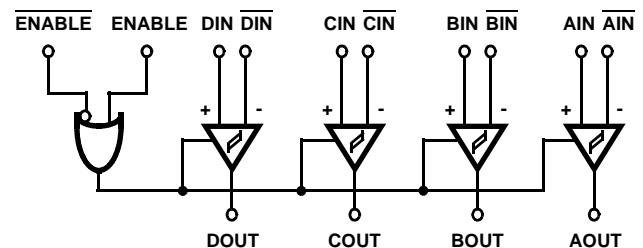
## Features

- 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)
  - Single Event Upset LET . . . . . 100MeV/mg/cm<sup>2</sup>
  - Single Event Latch-up Immune
- Low Stand-by Current . . . . . 13mA(Max)
- Operating Supply Range . . . . . 3.0V to 3.6V
- Enable Input Levels . . . . .  $V_{IH} > (0.7)(V_{DD})$ ;  $V_{IL} < (0.3)(V_{DD})$
- CMOS Output Levels . . . . .  $V_{OH} > 2.55V$ ;  $V_{OL} < 0.4V$
- Input Fail Safe Circuitry
- High Impedance Inputs when Disabled or Powered-down
- Full -55 °C to +125 °C Military Temperature Range
- Pb-Free (RoHS Compliant)

## Applications

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

## Logic Diagram



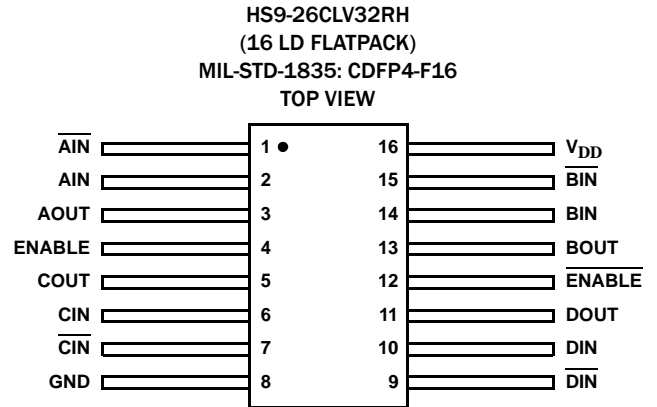
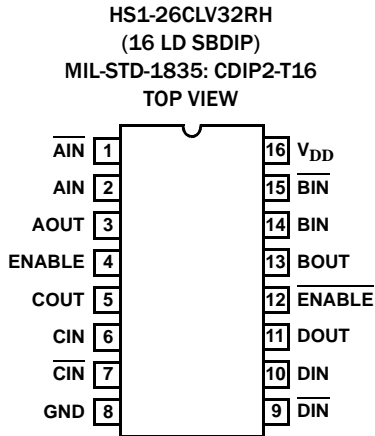
## Ordering Information

ORDERING NUMBER (Note)	INTERNAL MKT. NO.	PART MARKING	TEMP. RANGE (°C)	PACKAGE (Pb-Free)	PKG. DWG. #
5962F9568902QEC	HS1-26CLV32RH-8	Q 5962F95 68902QEC	-55 to +125	16 Ld SBDIP	D16.3
5962F9568902QXC	HS9-26CLV32RH-8	Q 5962F95 68902QXC	-55 to +125	16 Ld FLATPACK	K16.A
5962F9568902VEC	HS1-26CLV32RH-Q	Q 5962F95 68902VEC	-55 to +125	16 Ld SBDIP	D16.3
5962F9568902VXC	HS9-26CLV32RH-Q	Q 5962F95 68902VXC	-55 to +125	16 Ld FLATPACK	K16.A
HS1-26CLV32RH/PROTO	HS1-26CLV32RH/PROTO	HS1- 26CLV32RH /PROTO	-55 to +125	16 Ld SBDIP	D16.3
HS9-26CLV32RH/PROTO	HS9-26CLV32RH/PROTO	HS9- 26CLV32RH /PROTO	-55 to +125	16 Ld FLATPACK	K16.A

NOTE: These Intersil Pb-free Hermetic packaged products employ 100% Au plate - e4 termination finish, which is RoHS compliant and compatible with both SnPb and Pb-free soldering operations.

# HS-26CLV32RH

## Pin Configurations



### NOTES:

1. For details on input output structures refer to application note [AN9520](#).
2. For details on package dimensions refer MIL STD 1835.

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## Die Characteristics

### DIE DIMENSIONS:

78 mils x 123 mils x 21 mils  
(1970 $\mu$ m x 3120 $\mu$ m)

### INTERFACE MATERIALS:

#### Glassivation:

Type: PSG (Phosphorus Silicon Glass)  
Thickness: 8k $\text{\AA}$   $\pm$  1k $\text{\AA}$

#### Substrate:

AVLSI1RA, Silicon backside, V<sub>DD</sub> backside potential

### Metallization:

Bottom: Mo/TiW  
Thickness: 5800 $\text{\AA}$   $\pm$  1k $\text{\AA}$   
Top: Al/Si/Cu  
Thickness: 10k $\text{\AA}$   $\pm$  1k $\text{\AA}$

### Worst Case Current Density:

<2.0 x 10<sup>5</sup>A/cm<sup>2</sup>

### Bond Pad Size:

110 $\mu$ m x 100 $\mu$ m

## Metallization Mask Layout

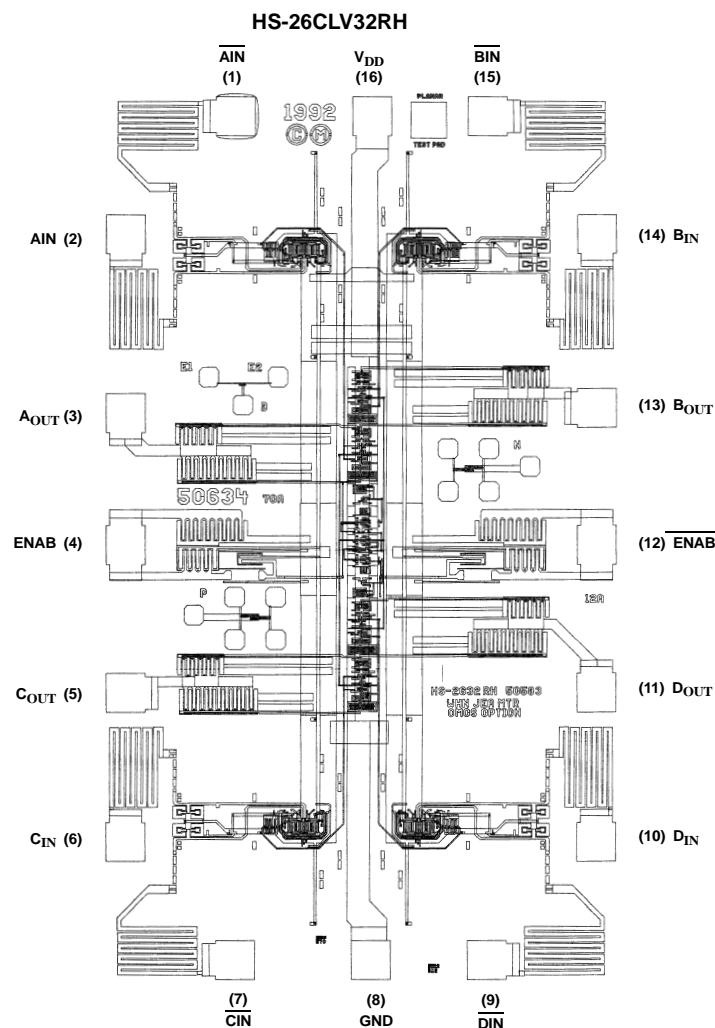


TABLE 1. HS26CLV32RH PAD COORDINATES

PIN NUMBER	PAD NAME	RELATIVE TO PIN 1	
		X COORDINATES	Y COORDINATES
1	$\overline{\text{AIN}}$	0	0
2	AIN	-337.1	-362
3	AOUT	-337.1	-912.5
4	ENABLE	-337.1	-1319.3
5	COUT	-337.1	-1774.4
6	CIN	-337.1	-2233.7
7	$\overline{\text{CIN}}$	0	-2595.7
8	GND	418.4	-2596.7
9	$\overline{\text{DIN}}$	776.4	-2595.7
10	DIN	1113.5	-2233.7
11	DOUT	1113.5	-1774.4
12	$\overline{\text{ENABLE}}$	1113.5	-1319.3
13	BOUT	1113.5	-898.4
14	BIN	1113.5	-362
15	$\overline{\text{BIN}}$	776.4	0
16	VDD	420.2	1

NOTE: Dimensions in microns

For additional products, see [www.intersil.com/product\\_tree](http://www.intersil.com/product_tree)

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