

# Radiation Hardened Quad Differential Line Drivers

## HS-26CT31RH, HS-26CT31EH

The Intersil HS-26CT31RH, HS-26CT31EH are quad differential line drivers designed for digital data transmission over balanced lines and meet 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-26CT31RH, HS-26CT31EH accept TTL signal levels and convert them to RS-422 compatible outputs. These circuits use special outputs that enable the drivers to power down without loading down the bus. Enable and disable pins allow several devices to be connected to the same data source and addressed independently.

## Specifications

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 5962-95632. A "hot-link" is provided on our homepage for downloading.

<http://www.landandmaritime.dla.mil/Downloads/MILSpec/Smd/95632.pdf>

## Features

- Electronically Screened to SMD #5962-95632
- 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 (Except for IOS)
- Operation with TTL Based on  $V_{IH} = V_{DD}/2$
- High Impedance Outputs when Disabled or Powered Down
- Low Power Dissipation 2.75mW Standby (Max)
- Single 5V Supply
- Low Output Impedance  $10\Omega$  or Less
- Full  $-55^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$  Military Temperature Range

## Applications

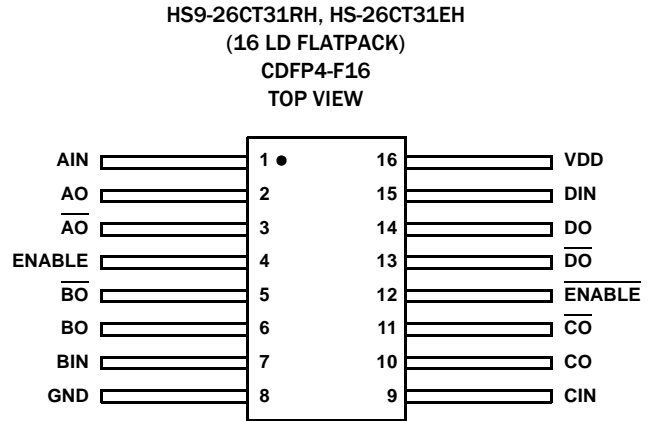
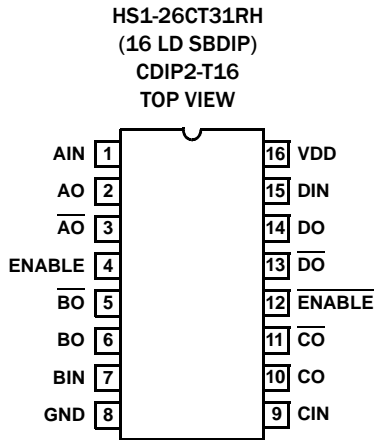
- Line Transmitter for MIL-STD-1553 Serial Data Bus
- Line Transmitter for RS422

## Ordering Information

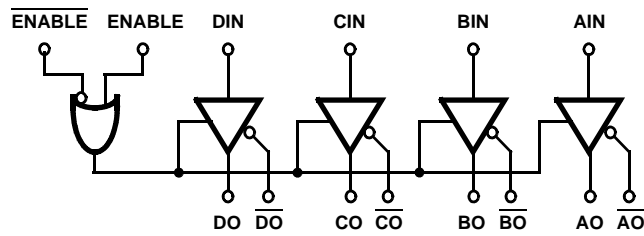
ORDERING NUMBER	INTERNAL MKT. NUMBER	PART MARKING	TEMP. RANGE (°C)	PACKAGE	PKG. DWG. #
5962F9563201QEC	HS1-26CT31RH-8	Q 5962F95 63201QEC	-55 to +125	16 LD SBDIP	D16.3
5962F9563201QXC	HS9-26CT31RH-8	Q 5962F95 63201QXC	-55 to +125	16 LD Flatpack	K16.A
5962F9563201VEC	HS1-26CT31RH-Q	Q 5962F95 63201VEC	-55 to +125	16 LD SBDIP	D16.3
5962F9563201VXC	HS9-26CT31RH-Q	Q 5962F95 63201VXC	-55 to +125	16 LD Flatpack	K16.A
HS1-26CT31RH/PROTO	HS1-26CT31RH/PROTO	HS1 - 26CT31RH /PROTO	-55 to +125	16 LD SBDIP	D16.3
HS9-26CT31RH/PROTO	HS9-26CT31RH/PROTO	HS9 - 26CT31RH /PROTO	-55 to +125	16 LD Flatpack	K16.A
5962F9563201V9A	HS0-26CT31RH-Q		-55 to +125		
5962F9563202VXC	HS9-26CT31EH-Q	Q 5962F95 63202VXC	-55 to +125	16 LD Flatpack	K16.A

# HS-26CT31RH, HS-26CT31EH

## Pin Configurations



## Logic Diagram



# HS-26CT31RH, HS-26CT31EH

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## Die Characteristics

### DIE DIMENSIONS:

96.5 milx195 milsx21 mils  
(2450x4950)

### INTERFACE MATERIALS:

#### Glassivation:

Type: PSG (Phosphorus Silicon Glass)  
Thickness:  $10\text{k}\text{\AA} \pm 1\text{k}\text{\AA}$

#### Metallization:

M1: Mo/TiW  
Thickness:  $5800\text{\AA}$   
M2: Al/Si/Cu (Top)  
Thickness:  $10\text{k}\text{\AA} \pm 1\text{k}\text{\AA}$

### Substrate:

AVLSI1RA

### Backside Finish:

Silicon

### ASSEMBLY RELATED INFORMATION:

#### Substrate Potential (Powered Up):

$V_{DD}$

### ADDITIONAL INFORMATION:

#### Worst Case Current Density:

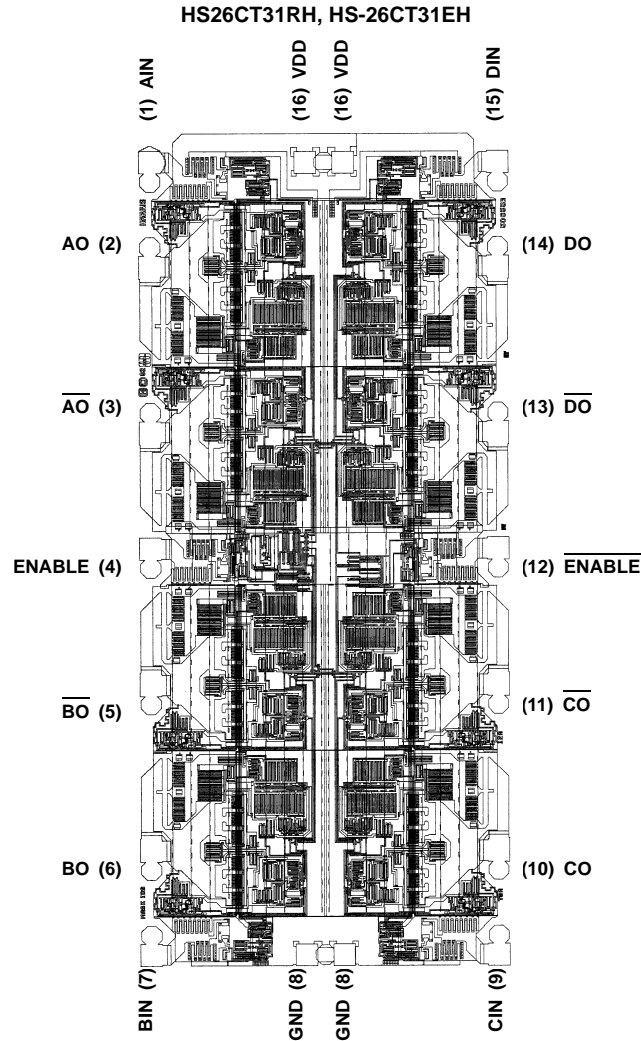
$<2.0 \times 10^5 \text{A/cm}^2$

#### Bond Pad Size:

$110\mu\text{m} \times 100\mu\text{m}$

# HS-26CT31RH, HS-26CT31EH

## Metallization Mask Layout



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