

**Radiation Hardened Quad Differential Line Driver**

The Intersil HS-26C31RH is a quad differential line driver 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-26C31RH accepts CMOS signal levels and converts them to RS-422 compatible outputs. This circuit uses 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 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.**

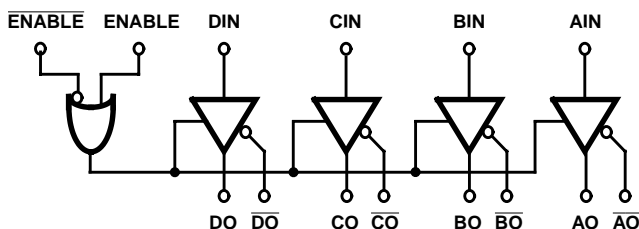
**Detailed Electrical Specifications for these devices are contained in SMD 5962-96663. A "hot-link" is provided on our homepage for downloading.**

<http://www.intersil.com/spacedefense/space.htm>

**Ordering Information**

ORDERING NUMBER	INTERNAL MKT. NUMBER	TEMP. RANGE (°C)
5962F9666301QEC	HS1-26C31RH-8	-55 to 125
5962F9666301QXC	HS9-26C31RH-8	-55 to 125
5962F9666301V9A	HS0-26C31RH-Q	25
5962F9666301VEC	HS1-26C31RH-Q	-55 to 125
5962F9666301VXC	HS9-26C31RH-Q	-55 to 125
HS1-26C31RH/PROTO	HS1-26C31RH/PROTO	-55 to 125
HS9-26C31RH/PROTO	HS9-26C31RH/PROTO	-55 to 125

**Logic Diagram**

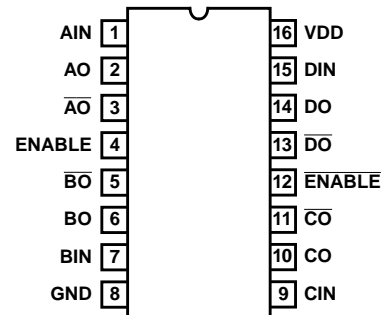


**Features**

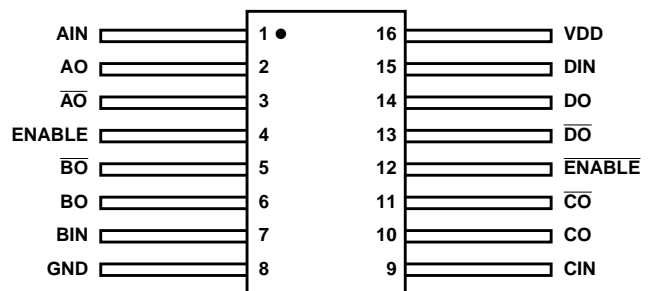
- Electrically Screened to SMD # 5962-96663
- QML Qualified per MIL-PRF-38535 Requirements
- 1.2 Micron Radiation Hardened CMOS
  - Total Dose Up to . . . . . 300kRAD(Si)
  - Dose Rate Upset . . . . . > 1x10<sup>9</sup> RAD/s (20ns Pulse)
- Latchup Free
- EIA RS-422 Compatible Outputs (Except for IOS)
- CMOS Inputs
- High Impedance Outputs when Disabled or Powered Down
- Low Power Dissipation . . . . . 2.75mW Standby (Max)
- Single 5V Supply
- Low Output Impedance . . . . . 10Ω or Less
- Full -55°C to 125°C Military Temperature Range

**Pinouts**

**HS1-26C31RH (SBDIP)  
CDIP2-T16  
TOP VIEW**



**HS9-26C31RH (FLATPACK)  
CDFP4-F16  
TOP VIEW**



**Die Characteristics**

**DIE DIMENSIONS:**

96.5 mils x 195 mils x 21 mils  
(2450 x 4950)

**INTERFACE MATERIALS:**

**Glassivation:**

Type: PSG (Phosphorus Silicon Glass)  
Thickness: 10kÅ ±1kÅ

**Metallization:**

M1: Mo/TiW  
Thickness: 5800Å  
M2: Al/Si/Cu (Top)  
Thickness: 10kÅ ±1kÅ

**Substrate:**

AVLSI1RA

**Backside Finish:**

Silicon

**ASSEMBLY RELATED INFORMATION:**

**Substrate Potential (Powered Up):**

V<sub>DD</sub>

**ADDITIONAL INFORMATION:**

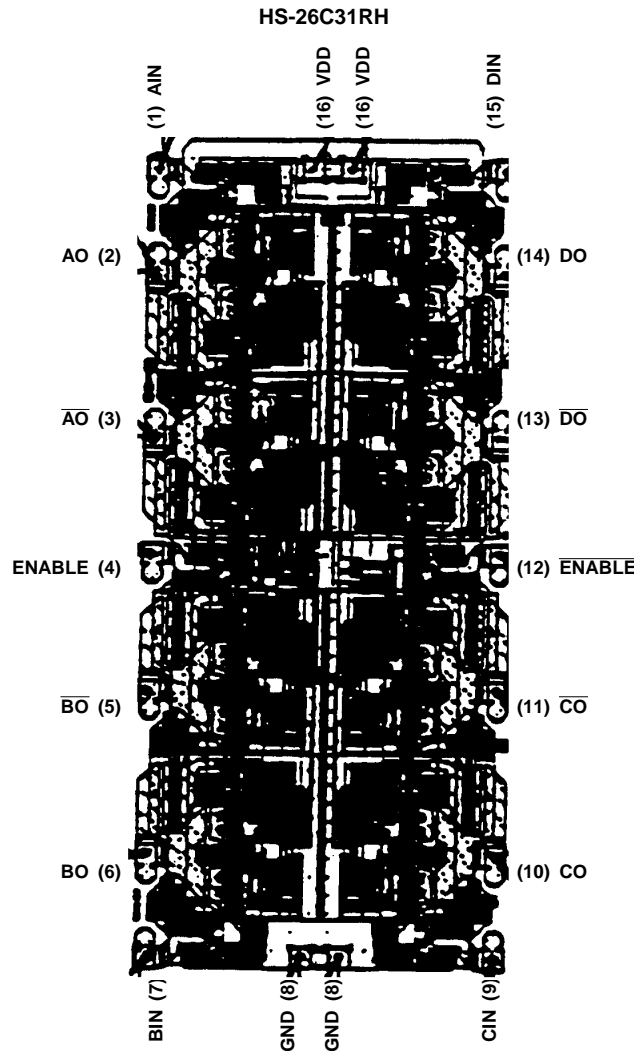
**Worst Case Current Density:**

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

**Bond Pad Size:**

110µm x 100µm

**Metallization Mask Layout**



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