intersil™

Radiation Hardened Quad Differential Line Driver

HS-26C31RH, HS-26C31EH

The Intersil HS-26C31RH, HS-26C31EH are quad differential line drivers 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, HS-26C31EH accept CMOS levels and converts them to RS-422 compatible outputs. These circuits 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 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 5962-96663. A “hot-link” is provided on our homepage for downloading.

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)
- 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

Applications

- Line transmitter for MIL-STD-1553 serial data bus

Ordering Information

ORDERING NUMBER (Note)	INTERNAL MKT. NUMBER	PART MARKING	TEMP. RANGE (°C)	PACKAGE (Pb-Free)	PKG. DWG. #
5962F9666301QEC	HS1-26C31RH-8	Q 5962F96 6630QEC	-55 to +125	16 LD SBDIP	D16.3
5962F9666301QXC	HS9-26C31RH-8	Q 5962F96 66301QXC	-55 to +125	16 LD FLATPACK	K16.A
5962F9666301VEC	HS1-26C31RH-Q	Q 5962F96 66301VEC	-55 to +125	16 LD SBDIP	D16.3
5962F9666301VXC	HS9-26C31RH-Q	Q 5962F96 66301VXC	-55 to +125	16 LD FLATPACK	K16.A
HS1-26C31RH/PROTO	HS1-26C31RH/PROTO	HS1- 26C31RH/PROTO	-55 to +125	16 LD SBDIP	D16.3
HS0-26C31RH/SAMPLE	HS0-26C31RH/SAMPLE		-55 to +125	Die	
HS9-26C31RH/PROTO	HS9-26C31RH/PROTO	HS9- 26C31RH/PROTO	-55 to +125	16 LD FLATPACK	K16.A
5962F9666301V9A	HS0-26C31RH-Q		-55 to +125	Die	
5962F9666303VEC	HS1-26C31EH-Q	Q 5962F96 66303VEC	-55 to +125	16 LD SBDIP	D16.3
5962F9666303VXC	HS9-26C31EH-Q	Q 5962F96 66303VXC	-55 to +125	16 LD FLATPACK	
5962F9666303V9A	HS0-26C31EH-Q			Die	

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.

CAUTION: These devices are sensitive to electrostatic discharge; follow proper IC Handling Procedures.
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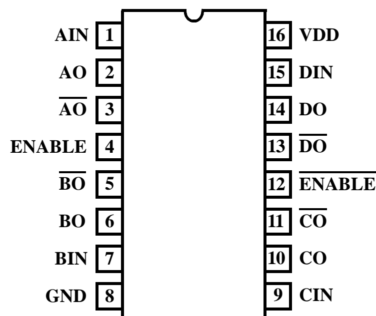
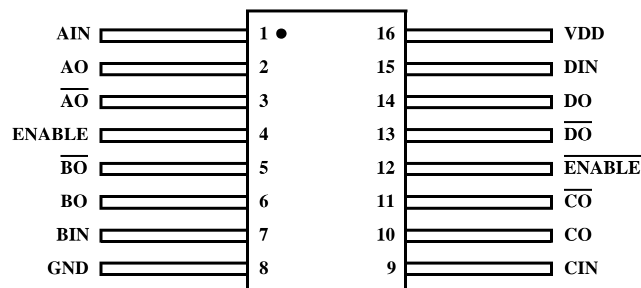
Pin Configurations

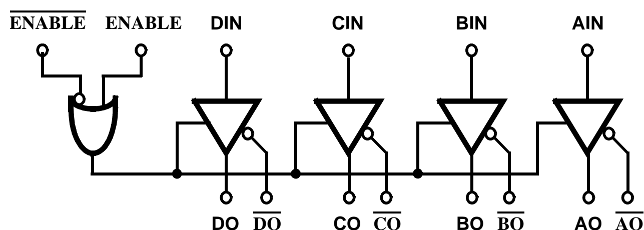
HS1-26C31RH, HS1-26C31EH
(16 LD SBDIP) CDIP2-T16
TOP VIEW



HS9-26C31RH, HS9-26C31EH
(16 LD FLATPACK) CDFP4-F16
TOP VIEW



Logic Diagram



For additional products, see www.intersil.com/en/products.html

Intersil products are manufactured, assembled and tested utilizing ISO9000 quality systems as noted in the quality certifications found at www.intersil.com/en/support/qualandreliability.html

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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_{DD}

ADDITIONAL INFORMATION:

Worst Case Current Density:

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

Bond Pad Size:

110μmx100μm

Metallization Mask Layout

HS-26C31RH, HS-26C31EH