

HS-26C31RH-T

Radiation Hardened Quad Differential Line Driver

FN4591
Rev 2.00
August 1, 2008

Intersil's Satellite Applications Flow™ (SAF) devices are fully tested and guaranteed to 100kRAD total dose. These QML Class T devices are processed to a standard flow intended to meet the cost and shorter lead-time needs of large volume satellite manufacturers, while maintaining a high level of reliability.

The Intersil HS-26C31RH-T 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-T accepts CMOS inputs 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

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

Detailed Electrical Specifications for the HS-1840ARH-T are contained in SMD 5962-96663. A "hot-link" is provided from our website for downloading.

www.intersil.com/military/

Intersil's Quality Management Plan (QM Plan), listing all Class T screening operations, is also available on our website.

<http://rel.intersil.com/reports/search.php>

Features

- QML Class T, Per MIL-PRF-38535
- Radiation Performance
 - Gamma Dose 1×10^5 RAD(Si)
 - SEU and SEL Immune to 100MeV/mg/cm²
- EIA RS-422 Compatible Outputs (Except for IOS)
- CMOS Compatible 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

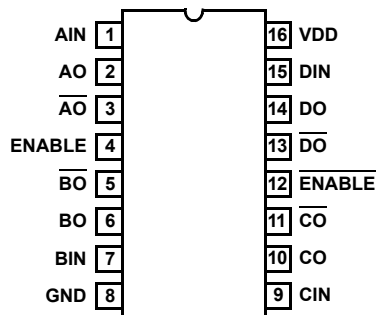
- Line Transmitter for MIL-STD-1553 Serial Data Bus

Ordering Information

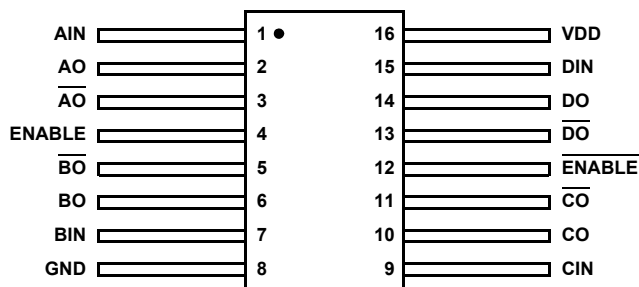
ORDERING NUMBER	INTERNAL MKT. NUMBER	PART MARKING #	TEMP. RANGE (°C)	PACKAGE	PKG. DWG. #
5962R9666301TEC	HS1-26C31RH-T	Q 5962R96 66301TEC	-55 to +125	16 LD SBDIP	D16.3
HS1-26C31RH/PROTO	HS1-26C31RH/PROTO	HSI - 26C31RH/PROTO	-55 to +125	16 LD SBDIP	D16.3
5962R9666301TXC	HS9-26C31RH-T	Q 5962R96 63201TEC	-55 to +125	16 LD FLATPACK	K16.A
HS9-26C31RH/PROTO	HS9-26C31RH/PROTO	HS9 - 26C31RH/PROTO	-55 to +125	16 LD FLATPACK	K16.A

Pinouts

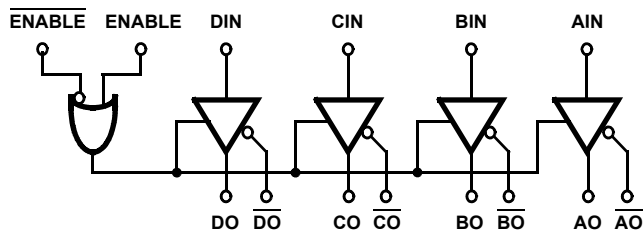
HS1-26C31RH-T
(16 LD SBDIP), CDIP-T16
TOP VIEW



HS9-26C31RH-T
(16 LD FLATPACK), CDIP4-F16
TOP VIEW



Logic Diagram



TRUTH TABLE

DEVICE POWER ON/OFF	INPUTS			OUTPUT	
	ENABLE	$\overline{\text{ENABLE}}$	IN	OUT	$\overline{\text{OUT}}$
ON	0	1	X	HI-Z	HI-Z
ON	1	X	0	0	1
ON	X	0	0	0	1
ON	1	X	1	1	0
ON	X	0	1	1	0
OFF (0V)	X	X	X	HI-Z	HI-Z

Die Characteristics

DIE DIMENSIONS:

2450µm x 4950µm x 533µm ±25.4µm
 (97 x 195 x 21mils ±1mil)

METALLIZATION:

M1: Mo/Tiw
 Thickness: 5800Å
 M2: Al/Si/Cu
 Thickness: 10kÅ ±1kÅ

SUBSTRATE POTENTIAL:

Internally connected to V_{DD}.
 May be left floating.

BACKSIDE FINISH:

Silicon

PASSIVATION:

Type: SiO₂
 Thickness: 8kÅ ±1kÅ

WORST CASE CURRENT DENSITY:

< 2.0e5 A/cm²

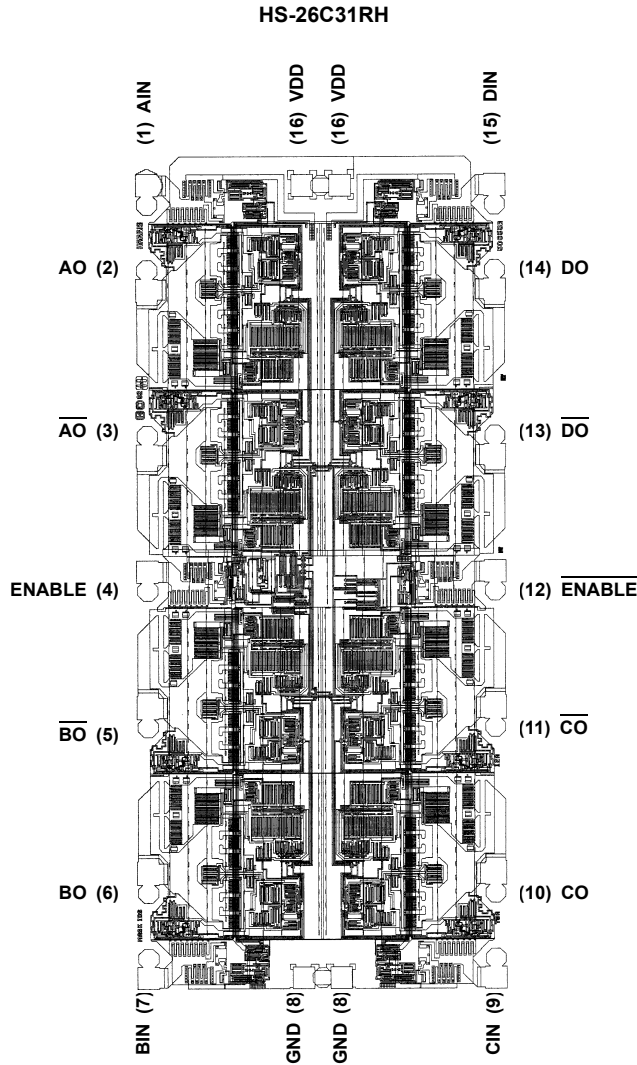
TRANSISTOR COUNT:

285

PROCESS:

Radiation Hardened CMOS, AVLSI

Metallization Mask Layout



**© Copyright Intersil Americas LLC 2000-2008. All Rights Reserved.
All trademarks and registered trademarks are the property of their respective owners.**

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

Intersil products are manufactured, assembled and tested utilizing ISO9001 quality systems as noted in the quality certifications found at www.intersil.com/en/support/qualandreliability.html

Intersil products are sold by description only. Intersil may modify the circuit design and/or specifications of products at any time without notice, provided that such modification does not, in Intersil's sole judgment, affect the form, fit or function of the product. Accordingly, the reader is cautioned to verify that datasheets 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 www.intersil.com