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 10Ω or Less
- Full -55°C to +125°C Military Temperature Range

Applications

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

Ordering Information

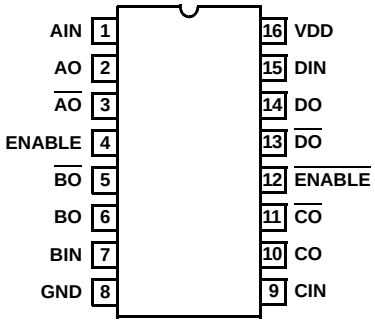
ORDERING NUMBER (Note 1)	INTERNAL MKT. NUMBER	PART MARKING	TEMP. RANGE (°C)	PACKAGE	PKG. DWG. #
5962F9563201QEC	HS1-26CT31RH-8	Q 5962F95 63201QEC	-55 to +125	16 LD SBDIP	D16.3
5962F9563201QXC	HS9-26CT31RH-8	Q 5962F95 63201QXC	-55 to +125	16 LD Flatpack	K16.A
5962F9563201VEC	HS1-26CT31RH-Q	Q 5962F95 63201VEC	-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	Die	
5962F9563202VXC	HS9-26CT31EH-Q	Q 5962F95 63202VXC	-55 to +125	16 LD Flatpack	K16.A
HS0-26CLV31RH/SAMPLE	HS0-26CLV31RH/SAMPLE		-55 to +125	Die	
5962F9563201VYC	HS9G-26CT31RH-Q (Note 2)	Q 5962F95 63201VYC	-55 to +125	16 LD Flatpack	K16.A
HS9G-26CT31RH/PROTO	HS9G-26CT31RH/PROTO (Note 2)	HS9G-26CT31RH/PROTO	-55 to +125	16 LD Flatpack	K16.A

NOTES:

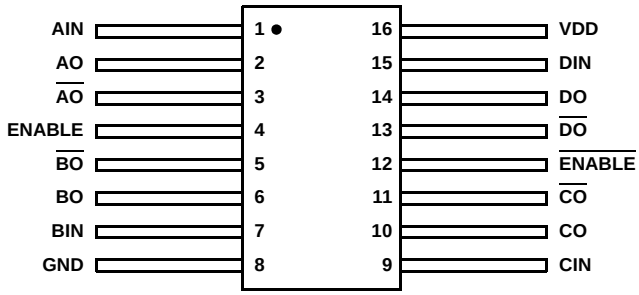
1. These Intersil Pb-free Hermetic packaged products employ 100% Au plate - e4 termination finish, which is RoHS compliant and compatible with both SnPb and Pb-free soldering operations.
2. The lid of these packages are connected to the ground pin of the device.

Pin Configurations

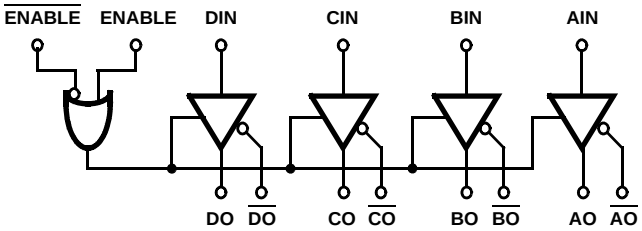
HS1-26CT31RH
(16 LD SBDIP)
CDIP2-T16
TOP VIEW



HS9-26CT31RH, HS-26CT31EH
(16 LD FLATPACK)
CDFP4-F16
TOP VIEW



Logic Diagram



Die Characteristics

DIE DIMENSIONS:

96.5 milx195 milsx21 mils
(2450x4950)

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:

$<2.0x10^5 A/cm^2$

Bond Pad Size:

110µmx100µm

Metallization Mask Layout

HS26CT31RH, HS-26CT31EH