

**HS-26CT32RH, HS-26CT32EH**

Radiation Hardened Quad Differential Line Receivers

FN2930  
Rev 6.00  
May 23, 2013

The Intersil HS-26CT32RH, HS-26CT32EH are differential line receivers 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-26CT32RH, HS-26CT32EH have an input sensitivity typically of 200mV over the common mode input voltage range of ±7V. The receivers are also equipped with input fail safe circuitry, which causes the outputs to go to a logic “1” when the inputs are open. Enable and Disable functions are common to all four receivers.

Specifications for Rad Hard QML devices are controlled by the Defense Logistics Agency Land and Maritime (DLA). The SMD numbers listed in the “Ordering Information” must be used when ordering.

Detailed Electrical Specifications for these devices are contained in SMD [5962-95631](#). A “hot-link” is also provided on our homepage for downloading.

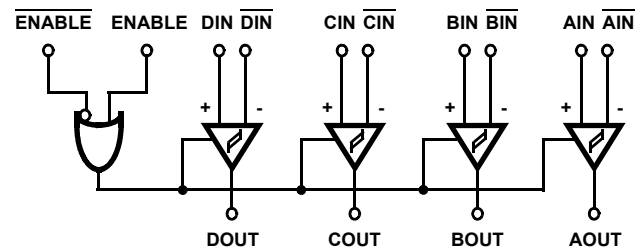
**Features**

- Electrically screened to SMD # [5962-95631](#)
- QML qualified per MIL-PRF-38535 requirements
- 1.2 Micron radiation hardened CMOS
  - Total dose ..... Up to 300kRAD(Si)
- Latch-up free
- EIA RS-422 compatible outputs
- Operation with TTL based on  $V_{IH} = V_{DD}/2$
- Input fail safe circuitry
- High impedance inputs when disabled or powered down
- Low power dissipation standby (Max) .....138mW
- Single 5V supply
- Full Military temperature range ..... -55 °C to +125 °C

**Applications**

- Line receiver for MIL-STD-1553 serial data bus
- Line receiver for RS422

**Logic Diagram**



**Ordering Information**

ORDERING NUMBER (Note 1)	INTERNAL MKT. NUMBER	PART MARKING	TEMP. RANGE (°C)	PACKAGE	PKG. DWG. #
5962F9563101QEC	HS1-26CT32RH-8	Q 5962F95 63101QEC	-55 to +125	16 Ld SBDIP	D16.3
5962F9563101QXC	HS9-26CT32RH-8	Q 5962F95 63101QXC	-55 to +125	16 Ld Flatpack	K16.A
5962F9563101V9A	HS0-26CT32RH-Q		-55 to +125	Die	
HS0-26CT32RH/SAMPLE	HS0-26CT32RH/SAMPLE		-55 to +125	Die	
5962F9563101VEC	HS1-26CT32RH-Q	Q 5962F95 63101VEC	-55 to +125	16 Ld SBDIP	D16.3
5962F9563101VXC	HS9-26CT32RH-Q	Q 5962F95 63101VXC	-55 to +125	16 Ld Flatpack	K16.A
5962F9563102VXC	HS9-26CT32EH-Q	Q 5962F95 63102VXC	-55 to +125	16 Ld Flatpack	K16.A
HS1-26CT32RH/PROTO	HS1-26CT32RH/PROTO	HS1- 26CT32RH /PROTO	-55 to +125	16 Ld SBDIP	D16.3
HS9-26CT32RH/PROTO	HS9-26CT32RH/PROTO	HS9- 26CT32RH /PROTO	-55 to +125	16 Ld Flatpack	K16.A
5962F9563102VEC	HS1-26CT32EH-Q	Q 5962F95 63102VEC	-55 to +125	16 Ld SBDIP	D16.3

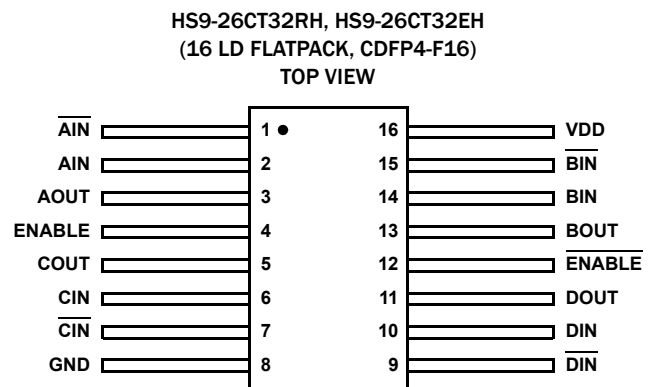
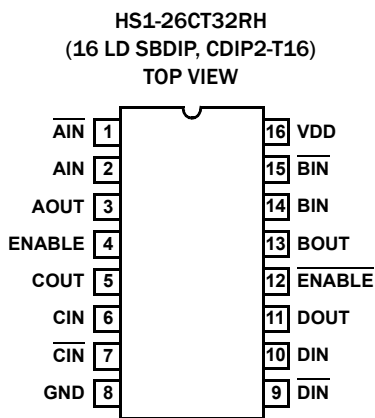
## Ordering Information (Continued)

ORDERING NUMBER (Note 1)	INTERNAL MKT. NUMBER	PART MARKING	TEMP. RANGE (°C)	PACKAGE	PKG. DWG. #
5962F9563102VXC	HS9-26CT32EH-Q	Q 5962F95 63102VXC	-55 to +125	16 Ld Flatpack	K16.A
5962F9563102V9A	HS0-26CT32EH-Q		-55 to +125	Die	
5962F9563101VYC	HS9G-26CT32RH-Q (Note2)	Q 5962F95 63101VYC	-55 to +125	16 Ld Flatpack	K16.A
HS9G-26CT32RH/PROTO	HS9G-26CT32RH/PROTO (Note 2)	HS9G-26CT32RH/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



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## Die Characteristics

### DIE DIMENSIONS:

78 mils x 123 mils  
(1970µm x 3120µm)

### INTERFACE MATERIALS:

#### Glassivation:

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

#### Top Metallization:

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

#### Substrate:

AVLSI1RA

### Backside Finish:

Silicon

### ASSEMBLY RELATED INFORMATION:

#### Substrate Potential:

V<sub>DD</sub> (When Powered Up)

### ADDITIONAL INFORMATION:

#### Worst Case Current Density:

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

#### Transistor Count:

240

#### Bond Pad Size:

110µm x 100µm

## Metallization Mask Layout

