

## Radiation Hardened High Speed Dual Voltage Comparator

The ISL7119RH is a radiation hardened high speed dual voltage comparator fabricated on a single monolithic chip. It is designed to operate over a wide dual supply voltage range as well as a single 5V logic supply and ground. The open collector output stage facilitates interfacing with a variety of logic devices and has the ability to drive relays and lamps at output currents up to 25mA.

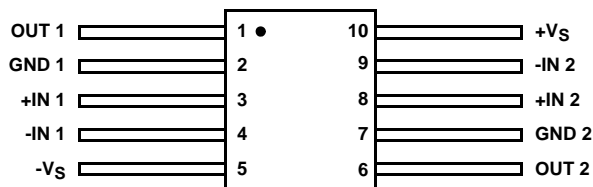
The ISL7119RH is fabricated on our dielectrically isolated Rad-hard Silicon Gate (RSG) process, which provides immunity to Single Event Latch-up (SEL) and highly reliable performance in the natural space environment.

**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 ISL7119RH are contained in SMD 5962-07215. A “hot-link” is provided on our website for downloading.**

## Pinouts

**ISL7119RH**  
**(10 LD FLATPACK GDFP1-F10 OR CDFP2-F10)**  
**TOP VIEW**



## Features

- Electrically Screened to DSCC SMD # 5962-07215
- QML Qualified Per MIL-PRF-38535 Requirements
- Radiation Environment
  - Total Dose. . . . .  $3 \times 10^5$  RAD(Si)
  - SEL/SEB. . . . . Immune
- Input Offset Voltage ( $V_{IO}$ ). . . . . 8mV (Max)
- Input Bias Current ( $I_{BIAS}$ ) . . . . . 1000nA (Max)
- Input Offset Current ( $I_{IO}$ ) . . . . . 150nA (Max)
- Saturation Voltage @  $I_{SINK} = 3.2mA$  ( $V_{SAT}$ ) . 0.65V (Max)
- Saturation Voltage @  $I_{SINK} = 25mA$  ( $V_{SAT}$ ) . . 1.8V (Max)
- Response Time ( $t_{PD}$ ) . . . . . 160ns (Max)

## Applications

- Window Detector
- Level Shifter
- Relay Driver
- Lamp Driver

## Ordering Information

ORDERING NUMBER	INTERNAL MKT. NUMBER	PART MARKING	TEMP. RANGE (°C)	PACKAGE	PKG. DWG. #
5962F0721501QXC	ISL7119RHQF	Q 5962F07 21501QXC	-55 to +125	10 Ld Flatpack	K10.A
5962F0721501VXC	ISL7119RHVF	Q 5962F07 21501VXC	-55 to +125	10 Ld Flatpack	K10.A
5962F0721501V9A	ISL7119RHVX		-55 to +125	10 Ld Flatpack	K10.A
ISL7119RH/Proto	ISL7119RHF/Proto	ISL7 119RHF /Proto	-55 to +125	10 Ld Flatpack	K10.A

## Die Characteristics

### DIE DIMENSIONS:

2030 $\mu$ m x 2030 $\mu$ m (~80 mils x 80 mils)  
Thickness: 483 $\mu$ m  $\pm$  25.4 $\mu$ m (19 mils  $\pm$  1 mil)

### INTERFACE MATERIALS:

#### Glassivation:

Type: PSG (Phosphorous Silicon Glass)  
Thickness: 8.0kÅ  $\pm$  1.0kÅ

#### Top Metallization:

Type: AlSiCu  
Thickness: 16.0kÅ  $\pm$  2kÅ

#### Substrate:

Radiation Hardened Silicon Gate, Dielectric Isolation

### Backside Finish:

Silicon

### ASSEMBLY RELATED INFORMATION:

#### Substrate Potential:

Unbiased (DI)

### ADDITIONAL INFORMATION:

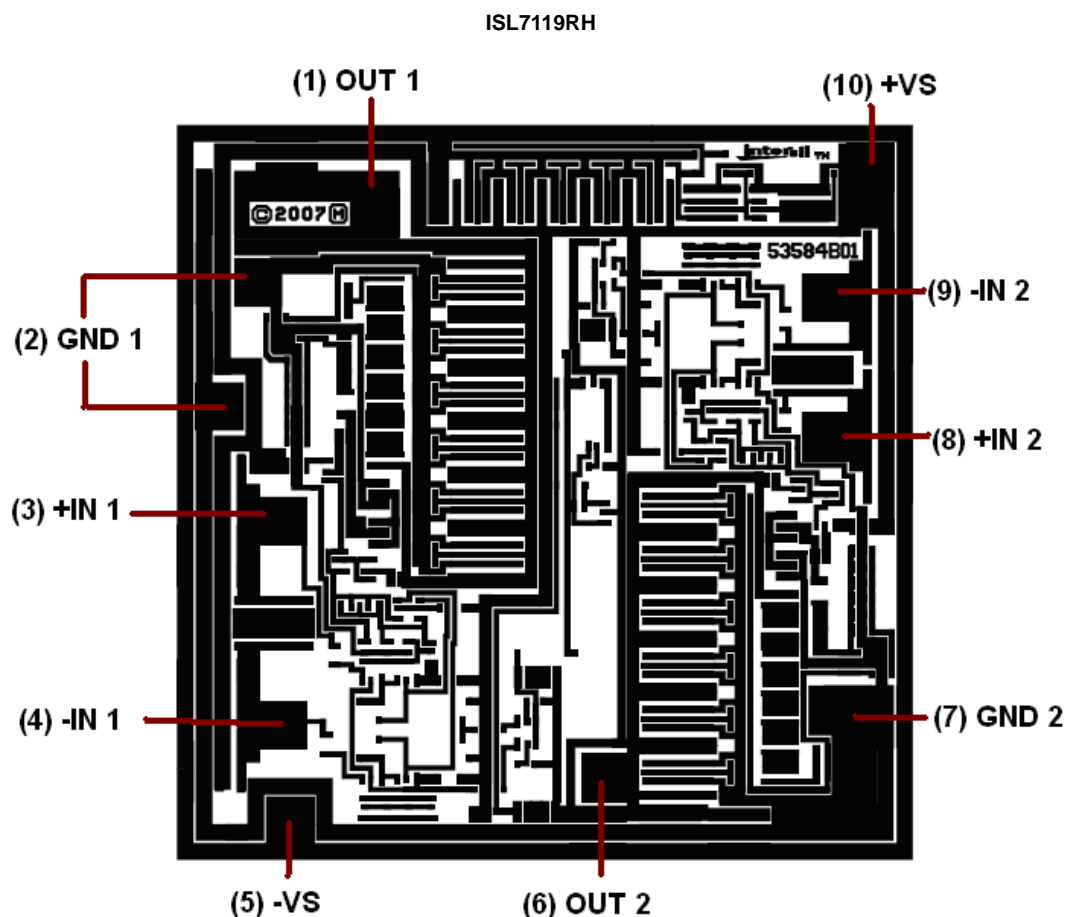
#### Worst Case Current Density:

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

#### Transistor Count:

66

## Metallization Mask Layout



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Intersil Corporation's quality certifications can be viewed at [www.intersil.com/design/quality](http://www.intersil.com/design/quality)

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