

Radiation Hardened High Speed Dual Voltage Comparators

ISL7119RH, ISL7119EH

The ISL7119RH, ISL7119EH are radiation hardened, high speed, dual voltage comparators fabricated on a single monolithic chip. They are 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.

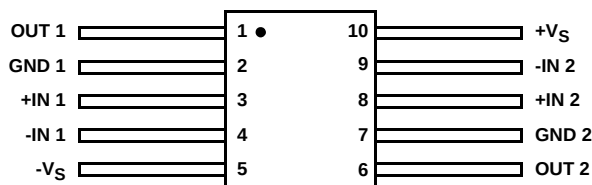
The ISL7119RH, ISL7119EH are fabricated on our dielectrically isolated Rad-hard Silicon Gate (RSG) process, which provides immunity to Single Event Latch-up (SEL) and highly reliable performance in the natural space environment.

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

Detailed Electrical Specifications for the ISL7119RH, ISL7119EH are contained in SMD 5962-07215. A "hot-link" is provided on our website for downloading.

Pin Configuration

ISL7119RH, ISL7119EH
(10 LD FLATPACK GDFP1-F10 OR CDFP2-F10)
TOP VIEW



Features

- Electrically Screened to DLA [SMD # 5962-07215](#)
- QML Qualified Per MIL-PRF-38535 Requirements
- Radiation Environment
 - Total Dose 3×10^5 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 (Pb-Free)	PKG. DWG. #
5962F0721501QXC	ISL7119RHQF (Note)	Q 5962F07 21501QXC	-55 to +125	10 Lead Ceramic Metal Seal Flatpack	K10.A
5962F0721501VXC	ISL7119RHVF (Note)	Q 5962F07 21501VXC	-55 to +125	10 Lead Ceramic Metal Seal Flatpack	K10.A
5962F0721502VXC	ISL7119EHVF (Note)	Q 5962F07 21502VXC	-55 to +125	10 Lead Ceramic Metal Seal Flatpack	K10.A
5962F0721501V9A	ISL7119RHVX		-55 to +125	10 Lead Ceramic Metal Seal Flatpack	K10.A
5962F0721502V9A	ISL7119EHVX		-55 to +125	10 Lead Ceramic Metal Seal Flatpack	K10.A
ISL7119RHF/Proto	ISL7119RHF/Proto (Note)	ISL7 119RHF /Proto	-55 to +125	10 Lead Ceramic Metal Seal Flatpack	K10.A
ISL7119RHX/Sample	ISL7119RHX/Sample	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.

Die Characteristics

DIE DIMENSIONS:

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

INTERFACE MATERIALS:

Glassivation:

Type: PSG (Phosphorous Silicon Glass)
Thickness: 8.0k $\text{\AA}$ $\pm$ 1.0k $\text{\AA}$

Top Metallization:

Type: AlSiCu
Thickness: 16.0k $\text{\AA}$ $\pm$ 2k $\text{\AA}$

Substrate:

Radiation Hardened Silicon Gate, Dielectric Isolation

Backside Finish:

Silicon

ASSEMBLY RELATED INFORMATION:

Substrate Potential:

Unbiased (DI)

ADDITIONAL INFORMATION:

Worst Case Current Density:

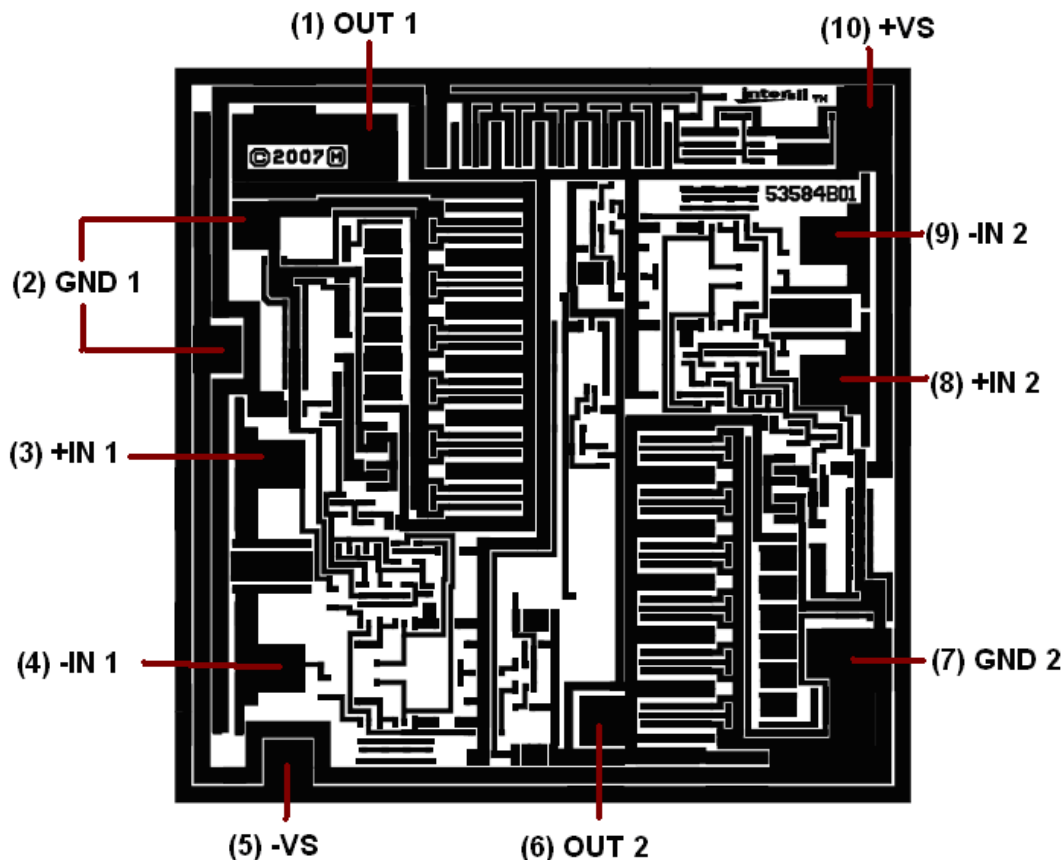
$<2.0 \times 10^5 \text{ A/cm}^2$

Transistor Count:

66

Metallization Mask Layout

ISL7119RH, ISL7119EH



For additional products, see www.intersil.com/product_tree

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

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