

Data Sheet July 1999 File Number 4609.1

Radiation Hardened 8K x 8 CMOS PROM

Intersil's Satellite Applications FlowTM (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-6664RH-T is a radiation hardened 64K CMOS PROM, organized in an 8K word by 8-bit format. The chip is manufactured using a radiation hardened CMOS process, and utilizes synchronous circuit design techniques to achieve high speed performance with very low power dissipation.

On-chip address latches are provided, allowing easy interfacing with microprocessors that use a multiplexed address/data bus structure. The output enable control (\overline{G}) simplifies system interfacing by allowing output data bus control in addition to the chip enable control (\overline{E}) . All bits are manufactured storing a logical "0" and can be selectively programmed for a logical "1" at any bit location.

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-666s4RH-T are contained in SMD 5962-95626. A "hot-link" is provided from our website for downloading.

www.intersil.com/spacedefense/newsafclasst.asp

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

www.intersil.com/quality/manuals.asp

Ordering Information

| ORDERING INFORMATION | PART NUMBER | TEMP. RANGE (°C) |
|-------------------------|------------------|------------------------|
| 5962R9562601TXC | HS1-6664RH-T | -55 to 125 |
| HS1-6664RH/Proto | HS1-6664RH/Proto | -55 to 125 |
| 5962R9562601TYC | HS9-6664RH-T | -55 to 125 |
| HS9-6664RH/Proto | HS9-6664RH/Proto | -55 to 125 |

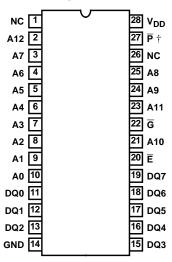
NOTE: Minimum order quantity for -T is 150 units through distribution, or 450 units direct.

Features

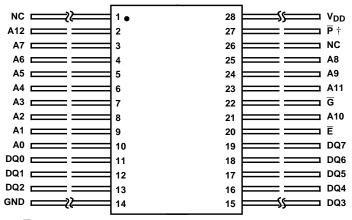
- QML Class T, Per MIL-PRF-38535
- · Radiation Performance
 - Gamma Dose (v) 1 x 10⁵ RAD(Si)
 - No Latch-Up, SEU LET >100MeV/mg/cm²
- Transient Output Upset >5 x 10⁸ RAD (Si)/s
- Fast Access Time 35ns (Typical)
- Single 5V Power Supply, Synchronous Operation
- Single Pulse 10V Field Programmable NiCr Fuses
- · On-Chip Address Latches, Three-State Outputs
- Low Standby Current <500μA (Pre-Rad)
- Low Operating Current <15mA/MHz

Pinouts

HS1-6664RH-T (SBDIP), CDIP2-T28 TOP VIEW

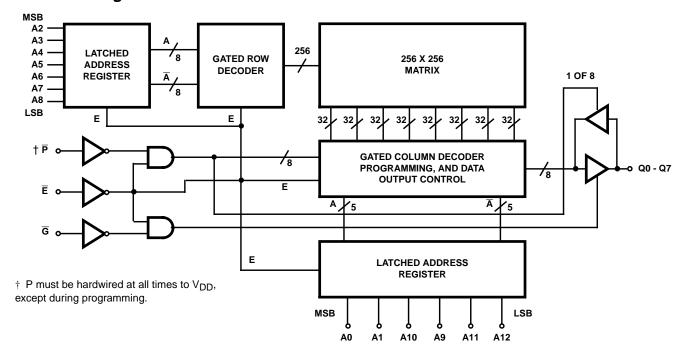


HS9-6664RH-T (FLATPACK), CDFP3-F28 TOP VIEW



 $[\]dagger \; \overline{P}$ must be hardwired at all times to $V_{DD},$ except during programming.

Functional Diagram



TRUTH TABLE

| Ē | G | MODE |
|---|---|-----------------|
| 0 | 0 | Enabled |
| 0 | 1 | Output Disabled |
| 1 | Х | Disabled |

Timing Waveform

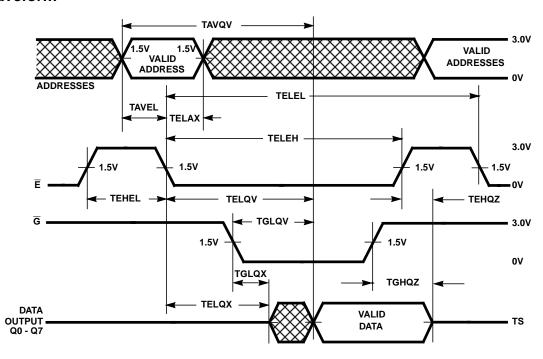


FIGURE 1. READ CYCLE

Die Characteristics

DIE DIMENSIONS:

 $(6883\mu m \ x \ 7798\mu m \ x \ 483\mu m \ \pm 25.4\mu m)$ 271 x 307 x 19mils ± 1 mil

METALLIZATION:

MI: 6kÅ ±1kÅ Si/AI/Cu 2kÅ ±500Å TiW

M2: 10kÅ ±2kÅ Si/AI/Cu

SUBSTRATE POTENTIAL:

 V_{DD}

BACKSIDE FINISH:

Silicon

Metallization Mask Layout

PASSIVATION:

Type: Silox (S_iO_2) Thickness: $8k\mathring{A} \pm 1k\mathring{A}$

WORST CASE CURRENT DENSITY:

< 2.0e5 A/cm²

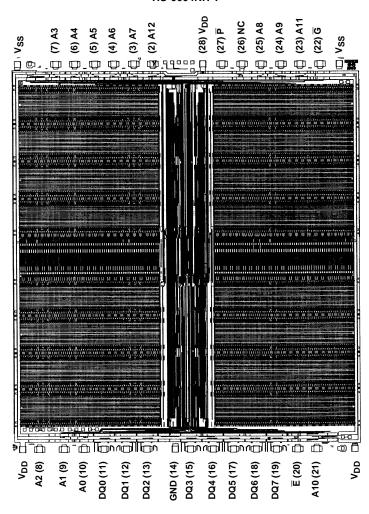
TRANSISTOR COUNT:

110, 874, (27,719 Gates)

PROCESS:

AVLSI

HS-6664RH-T



All Intersil semiconductor products are manufactured, assembled and tested under ISO9000 quality systems certification.

Intersil semiconductor products are sold by description only. Intersil Corporation reserves the right to make changes in circuit design and/or specifications at any time without notice. Accordingly, the reader is cautioned to verify that data sheets 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 web site http://www.intersil.com