

# *ACS125MS*

**Radiation Hardened Quad Buffer. Three-State** 

January 1996

#### Features

- Devices QML Qualified in Accordance with MIL-PRF-38535
- Detailed Electrical and Screening Requirements are Contained in SMD# 5962-96705 and Intersil's QM Plan
- 1.25 Micron Radiation Hardened SOS CMOS
- Total Dose ......>300K RAD (Si)
- Single Event Upset (SEU) Immunity: <1 x 10<sup>-10</sup> Errors/Bit/Day
- SEU LET Threshold ......>100 MEV-cm<sup>2</sup>/mg
- Dose Rate Survivability.....>10<sup>12</sup> RAD (Si)/s, 20ns Pulse
- Latch-Up Free Under Any Conditions
- Significant Power Reduction Compared to ALSTTL Logic
- DC Operating Voltage Range ...... 4.5V to 5.5V
- Input Logic Levels
  - VIL = 30% of VCC Max
  - VIH = 70% of VCC Min
- Input Current ≤ 1μA at VOL, VOH
- Fast Propagation Delay . . . . . . . . . . . . . . . . . 15ns (Max), 10ns (Typ)

# Description

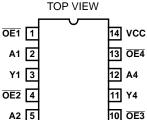
The Intersil ACS125MS is a Radiation Hardened Quad Buffer with Three-State outputs. Each output has it's own enable input, which when "HIGH" puts the output in a high impedance state.

The ACS125MS utilizes advanced CMOS/SOS technology to achieve high-speed operation. This device is a member of radiation hardened, high-speed, CMOS/SOS Logic Family.

The ACS125MS is supplied in a 14 lead Ceramic Flatpack (K suffix) or a Ceramic Dual-In-Line Package (D suffix).

#### **Pinouts**

14 PIN CERAMIC DUAL-IN-LINE MIL-STD-1835 DESIGNATOR, CDIP2-T14, **LEAD FINISH C** 



9 A3

8 Y3

14 PIN CERAMIC FLATPACK MIL-STD-1835 DESIGNATOR, CDFP3-F14 **LEAD FINISH C** 

TOP VIEW

Y2 6

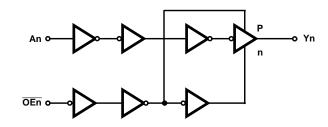
GND 7

zt— vcc OE4 A1 □□ ¬ A4 ŌE2 \_\_\_\_\_\_ 4 A2 \_\_\_\_\_\_ 5 10 L **\_\_** A3 → Y3

# Ordering Information

PART NUMBER	TEMPERATURE RANGE	SCREENING LEVEL	PACKAGE
5962F9670501VCC	-55°C to +125°C	MIL-PRF-38535 Class V	14 Lead SBDIP
5962F9670501VXC	-55°C to +125°C	MIL-PRF-38535 Class V	14 Lead Ceramic Flatpack
ACS125D/Sample	25°C	Sample	14 Lead SBDIP
ACS125K/Sample	25°C	Sample	14 Lead Ceramic Flatpack
ACS125HMSR	25°C	Die	Die

# Functional Diagram



TRUTH TABLE

INP	OUTPUT	
An	OEn	Yn
L	L	L
Н	L	Н
Х	H	Z

NOTE: L = Low, H = High, X = Don't Care, Z = High Impedance

# ACS125MS

# Die Characteristics

#### **DIE DIMENSIONS:**

88 mils x 88 mils 2.24mm x 2.24mm

#### **METALLIZATION:**

Type: AISi

Metal 1 Thickness: 7.125kÅ ±1.125kÅ

Metal 2 Thickness: 9kÅ ±1kÅ

# **GLASSIVATION:**

Type: SiO<sub>2</sub>

Thickness: 8kÅ ±1kÅ

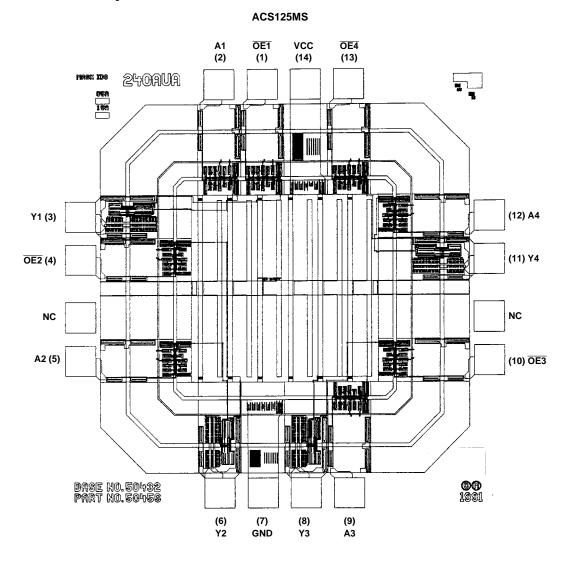
# **WORST CASE CURRENT DENSITY:**

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

#### **BOND PAD SIZE:**

> 4.3 mils x 4.3 mils  $> 110\mu m$  x  $110\mu m$ 

# Metallization Mask Layout



# ACS125MS

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