ACTS125MS

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# 5962-96715 and Intersil' QM Plan
- 1.25 Micron Radiation Hardened SOS CMOS
- Total Dose . . . . . >300K RAD (Si)
- Single Event Upset (SEU) Immunity: <1 x 10^{-10} Errors/Bit/Day (Typ)
- SEU LET Threshold . . . . . >100 MEV-cm^2/mg
- Dose Rate Upset . . . . . >10^{11} RAD (Si)/s, 20ns Pulse
- Dose Rate Survivabilty . . . . . >10^{12} RAD (Si)/s, 20ns Pulse
- Latch-Up Free Under Any Conditions
- Military Temperature Range . . . . . -55°C to +125°C
- Significant Power Reduction Compared to ALSTTL Logic
- DC Operating Voltage Range . . . . . 4.5V to 5.5V
- Input Logic Levels
  - VIL = 0.8V Max
  - VIH = VCC/2 Min
- Input Current ≤ 1μA at VOL, VOH
- Fast Propagation Delay . . . . . 17ns (Max), 11ns (Typ)

Description

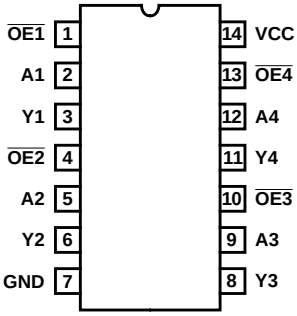
The Intersil ACTS125MS is a Radiation Hardened Quad Buffer with Three-State outputs. Each output has it's own enable input, which when "HIGH" puts the output in a high impedance state.

The ACTS125MS utilizes advanced CMOS/SOS technology to achieve high-speed operation. This device is a member of radiation hardened, high-speed, CMOS/SOS Logic Family.

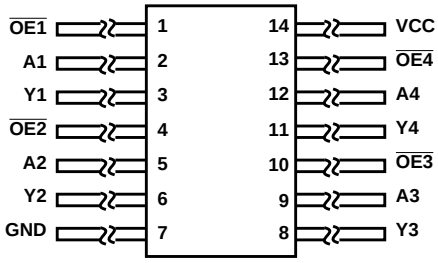
The ACTS125MS is supplied in a 14 lead Ceramic flatpack (K suffix) or a Ceramic Dual-In-Line Package (D suffix).

Pinouts

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



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

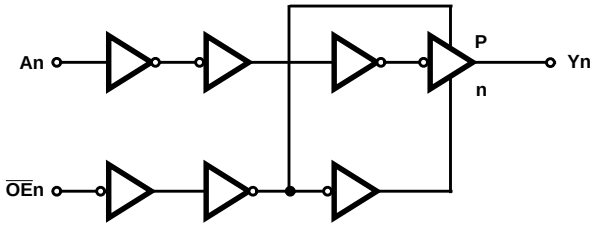


Ordering Information

PART NUMBER	TEMPERATURE RANGE	SCREENING LEVEL	PACKAGE
5962F9671501VCC	-55°C to +125°C	MIL-PRF-38535 Class V	14 Lead SBDIP
5962F9671501VXC	-55°C to +125°C	MIL-PRF-38535 Class V	14 Lead Ceramic Flatpack
ACTS125D/Sample	25°C	Sample	14 Lead SBDIP
ACTS125K/Sample	25°C	Sample	14 Lead Ceramic Flatpack
ACTS125HMSR	25°C	Die	Die

Spec Number **518826**
File Number **3566.1**

Functional Diagram



TRUTH TABLE

INPUTS		OUTPUT
An	**$\overline{OEn}$**	**Yn**
L	L	L
H	L	H
X	H	Z

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

Die Characteristics

DIE DIMENSIONS:

88 x 88 (mils)
2.24 x 2.24 (mm)

METALLIZATION:

Type: AlSi
Metal 1 Thickness: 7.125kÅ ± 1.125kÅ
Metal 2 Thickness: 9kÅ ± 1kÅ

GLASSIVATION:

Type: SiO_2
Thickness: 8kÅ ± 1kÅ

WORST CASE CURRENT DENSITY:

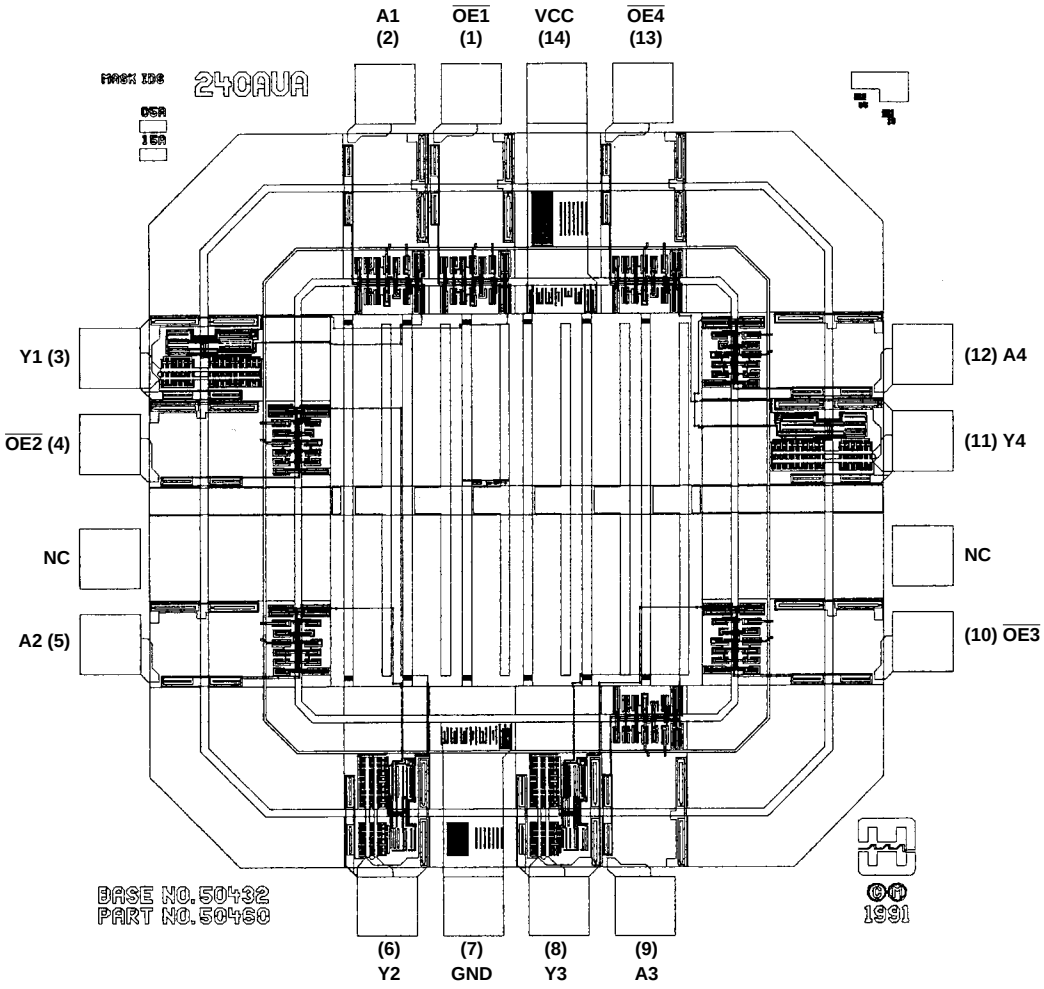
$<2.0 \times 10^5$ A/cm^2

BOND PAD SIZE:

> 4.3 x 4.3 (mils)
> 110 x 110 (µm)

Metallization Mask Layout

ACTS125MS



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