intersil

DATASHEET

ACTS244MS

Radiation Hardened Octal Non-Inverting Three-State Buffer

FN3187
Rev 1.00
January 1996

Features

- Devices QML Qualified in Accordance with MIL-PRF-38535
- Detailed Electrical and Screening Requirements are Contained in SMD# 5962-96718 and Intersil's QM Plan
- 1.25 Micron Radiation Hardened SOS CMOS
- Total Dose >300K RAD (Si)
- Single Event Upset (SEU) Immunity: $<1 \times 10^{-10}$ Errors/Bit/Day (Typ)
- SEU LET Threshold>100 MEV-cm^2/mg
- Dose Rate Upset>10^{11} RAD (Si)/s, 20ns Pulse
- Dose Rate Survivability>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 Delay14.5ns (Max), 10ns (Typ)

Description

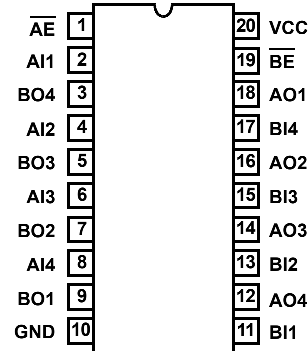
The Intersil ACTS244MS is a Radiation Hardened Octal Non-Inverting Three-State Buffer having two active low enable inputs.

The ACTS244MS utilizes advanced CMOS/SOS technology to achieve high-speed operation. This device is a member of radiation hardened, high-speed, CMOS/SOS Logic Family.

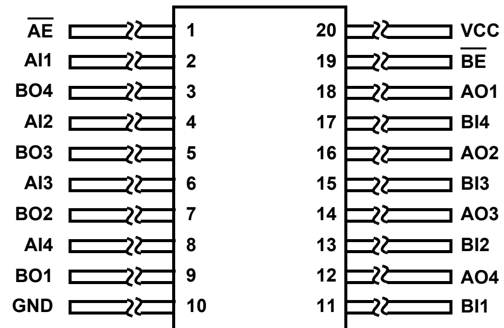
The ACTS244MS is supplied in a 20 lead Ceramic Flatpack (K suffix) or a Dual-In-Line Ceramic Package (D suffix).

Pinouts

20 PIN CERAMIC DUAL-IN-LINE
MIL-STD-1835 DESIGNATOR CDIP2-T20,
LEAD FINISH C
TOP VIEW



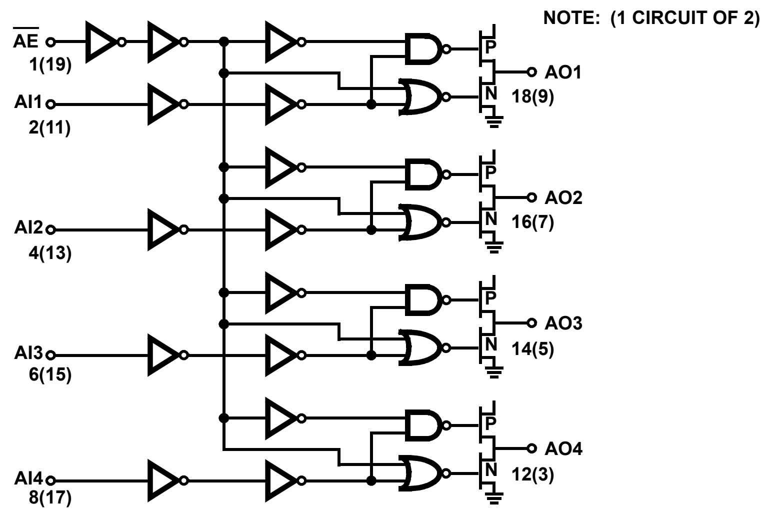
20 PIN CERAMIC FLATPACK
MIL-STD-1835 DESIGNATOR CDFP4-F20,
LEAD FINISH C
TOP VIEW



Ordering Information

PART NUMBER	TEMPERATURE RANGE	SCREENING LEVEL	PACKAGE
5962F9671801VRC	-55°C to +125°C	MIL-PRF-38535 Class V	20 Lead SBDIP
5962F9671801VXC	-55°C to +125°C	MIL-PRF-38535 Class V	20 Lead Ceramic Flatpack
ACTS244D/Sample	25°C	Sample	20 Lead SBDIP
ACTS244K/Sample	25°C	Sample	20 Lead Ceramic Flatpack
ACTS244HMSR	25°C	Die	Die

Functional Diagram



TRUTH TABLE

INPUTS		OUTPUT
$\overline{AE}$, $\overline{BE}$	AIn, BIn	AOn, BOn
L	L	L
L	H	H
H	X	Z

NOTE: H = High Voltage Level, L = Low Voltage Level,
X = Immaterial, Z = High Impedance

Die Characteristics

DIE DIMENSIONS:
100 x 100 (mils)
2.54 x 2.54 (mm)

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

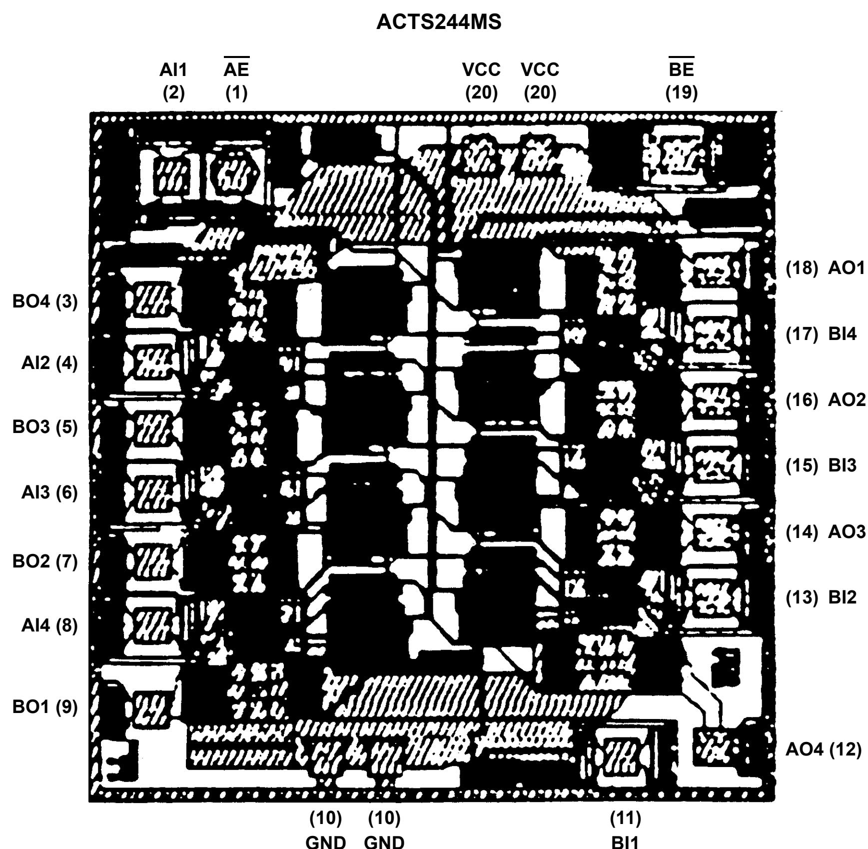
GLASSIVATION:
Type: SiO_2
Thickness: 8kÅ ±1kÅ

WORST CASE CURRENT DENSITY:
$< 2.0 \times 10^5 A/cm^2$

BOND PAD SIZE:
110 x 110 (μm)
4.4 x 4.4 (mils)

Metallization Mask Layout

ACTS244MS



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