ACTS240MS

High Reliability, Radiation Hardened Octal Buffer/Line Driver, Three-State

Rev X.00
Jan 13, 2017

Features

- **Devices QML Qualified in Accordance with MIL-PRF-38535**
- **Detailed Electrical and Screening Requirements are Contained in SMD# 5962-96717 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^{-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 Delay17.5ns (Max), 12ns (Typ)**

Description

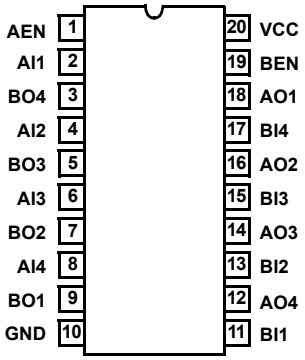
The Intersil ACTS240MS is a Radiation Hardened High Reliability, High-Speed CMOS/SOS having two active low enable inputs.

The ACTS240MS utilizes advanced CMOS/SOS technology to achieve high-speed operation. This device is a member of a radiation hardened, high-speed, CMOS/SOS Logic Family.

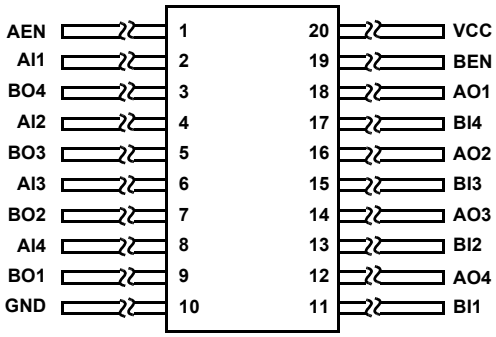
The ACTS240MS is supplied in a 20 lead Ceramic Flatpack (K suffix) or a Dual-In-Line Ceramic Package (D suffix).

Pinouts

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



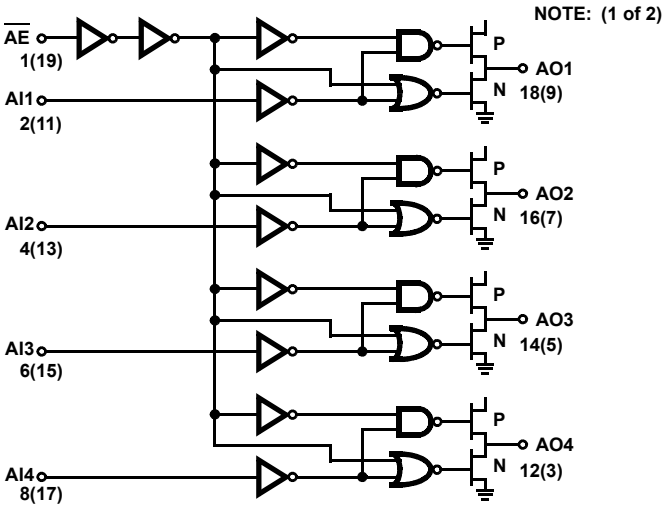
20 PIN CERAMIC FLATPACK
MIL-STD-1835 DESIGNATOR CDFP4-F20,
LEAD FINISH C
TOP VIEW



Ordering Information

PART NUMBER	TEMPERATURE RANGE	SCREENING LEVEL	PACKAGE
5962F9671701VRC	-55°C to +125°C	MIL-PRF-38535 Class V	20 Lead SBDIP
5962F9671701VXC	-55°C to +125°C	MIL-PRF-38535 Class V	20 Lead Ceramic Flatpack
ACTS240D/Sample	25°C	Sample	20 Lead SBDIP
ACTS240K/Sample	25°C	Sample	20 Lead Ceramic Flatpack
ACTS240HMSR	25°C	Die	Die

Functional Diagram



TRUTH TABLE

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

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

Die Characteristics

DIE DIMENSIONS:

100 mils x 100 mils
2.54mm x 2.54mm

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:

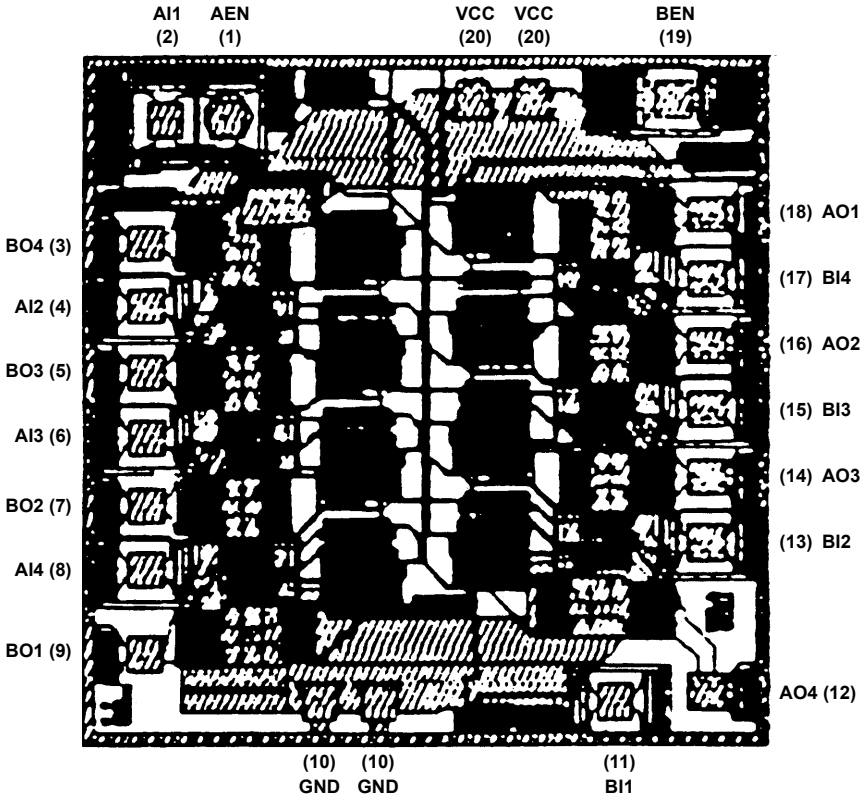
$< 2.0 \times 10^5 A/cm^2$

BOND PAD SIZE:

110µm x 110µm
4.4 mils x 4.4 mils

Metallization Mask Layout

ACTS240MS



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