

Device Information

CA3160

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4MHz, BiMOS Operational Amplifier with MOSFET Input/CMOS Output

DS Datasheet & Related Docs	Description	Key Features	PT Parametric Data
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Ordering Information

Part No.	Status	Temp.	Package
CA3160E	InActive	Mil	8 Ld PDIP
CA3160T	InActive	Mil	8 Ld Can

The price listed is the manufacturer's suggested retail price for quantities between 100 and 999 units. However, prices in today's market are fluid and may change without notice.

MSL = Moisture Sensitivity Level - per IPC/JEDEC J-STD-020

SMD = Standard Microcircuit Drawing

Description

The CA3160 is an operational amplifier that combines the advantages of both CMOS and bipolar transistors on a monolithic chip. The CA3160 series are frequency compensated versions of the popular CA3130 series.

Gate protected P-Channel MOSFET (PMOS) transistors are used in the input circuit to provide very high input impedance, very low input current, and exceptional speed performance. The use of PMOS field effect transistors in the input stage results in common-mode input voltage capability down to 0.5V below the negative supply terminal, an important attribute in single supply applications.

A complementary symmetry MOS (CMOS) transistor-pair, capable of swinging the output voltage to within 10mV of either supply voltage terminal (at very high values of load impedance), is employed as the output circuit.

The CA3160 Series circuits operate at supply voltages ranging from 5V to 16V, or $\pm 2.5V$ to $\pm 4.8V$ when using split supplies, and have terminals for adjustment of offset voltage for applications requiring offset null capability. Terminal provisions are also made to permit strobing of the output stage.

Key Features

- MOSFET Input Stage Provides:
 - Very High Z_i 1.5T Ω (1.5 x 10¹² Ω) (Typ)
 - Very Low I_i 5pA (Typ) at 15V Operation, 2pA (Typ) at 5V Operation
- Common-Mode Input Voltage Range Includes Negative Supply Rail; Input Terminals Can Be Swung 0.5V Below Negative Supply Rail
- CMOS Output Stage Permits Signal Swing to Either (or Both) Supply Rails

Related Documentation

- DS** Datasheet(s):
- [4MHz, BiMOS Operational Amplifier with MOSFET Input/CMOS Output](#)

PT Parametric Data

# of Amps	1
Slew Rate (V/ μ s)	10
V _S (min) (V)	± 2.5
V _S (max) (V)	± 8
BW @ -3dB (MHz)	4
Rail-to-Rail	N
Gain A _V (min) (V)	1
I _S (per amp) (mA)	2
I _{BIAS} (μ A)	.001
V _{OS} (max) (mV)	6
A _{VOL} or A _{ZOL} (dB or V/mA)	110
CMRR (dB)	90
PSRR (dB)	90

Applications

- Ground Referenced Single Supply Amplifiers
- Fast Sample Hold Amplifiers
- Long Duration Timers/Monostables
- High Input Impedance Wideband Amplifiers
- Voltage Followers (e.g., Follower for Single Supply D/A Converter)
- Wien-Bridge Oscillators
- Voltage Controlled Oscillators
- Photo Diode Sensor Amplifiers