



Descriptions

The CA3140AMZ96 is integrated circuit operational amplifiers that combine the advantages of high voltage PMOS transistors with high voltage bipolar transistors on a single monolithic chip. The CA3140AMZ96 features gate protected MOSFET (PMOS) transistors in the input circuit to provide very high input impedance, very low input current, and high speed performance.

The use of PMOS field effect transistors in the input stage results in a wide common mode input voltage capability and an important attribute for single supply applications. These products are widely used in civil, commercial and industrial applications. Such as accelerometers signal processing, integrators, medical monitors, visible light photometers, single power amplifiers, sampling and holding amplifiers, photocurrent meters, active filters, interface circuits, handheld instruments, alarms, peak detectors, comparators, integrators, multi-frequency oscillators, function generators and all other standard amplifier applications.

Feature

- Applied Advanced BiMOS Technology
- MOSFET Input Stage
 - Very High Input Impedance (Z_{IN}) $1.5T\Omega$ (Typ)
 - Very Low Input Current (I_{IO}) $-10pA$ (Typ) at $\pm 15V$
 - Wide Common Mode Input Voltage Range (VICR) : $-15V \sim 12V$
- Large Swing of Output Voltage (VOPP) : $-14V \sim 12V$
- SOP-8(SOIC-8) Package
- Operating Temperature Range: $-40^{\circ}C \sim 85^{\circ}C$

Applications

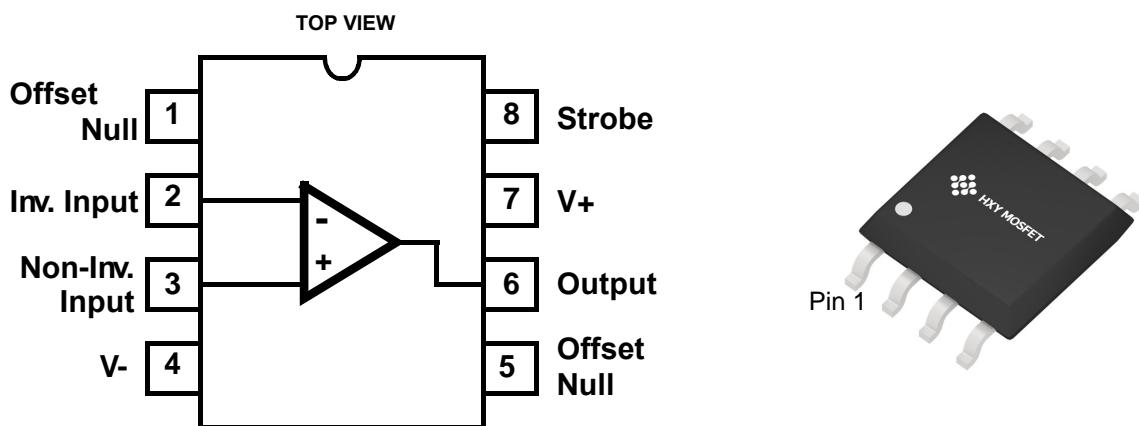
- Active Filter
- Compensation Amplifier
- Audio Preamplifier
- Electronic Instruments

Ordering Information

Product Model	Package Type	Packing	Packing Qty
CA3140AMZ96	SOP-8(SOIC-8)	Tape	2500Pcs/Reel



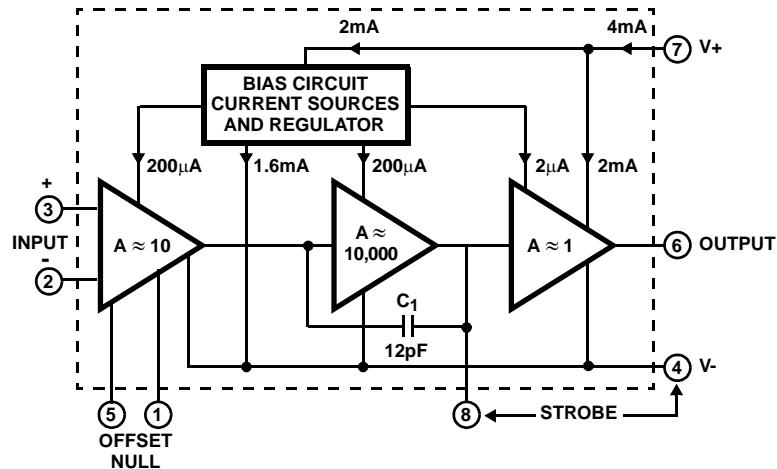
Pins Configuration



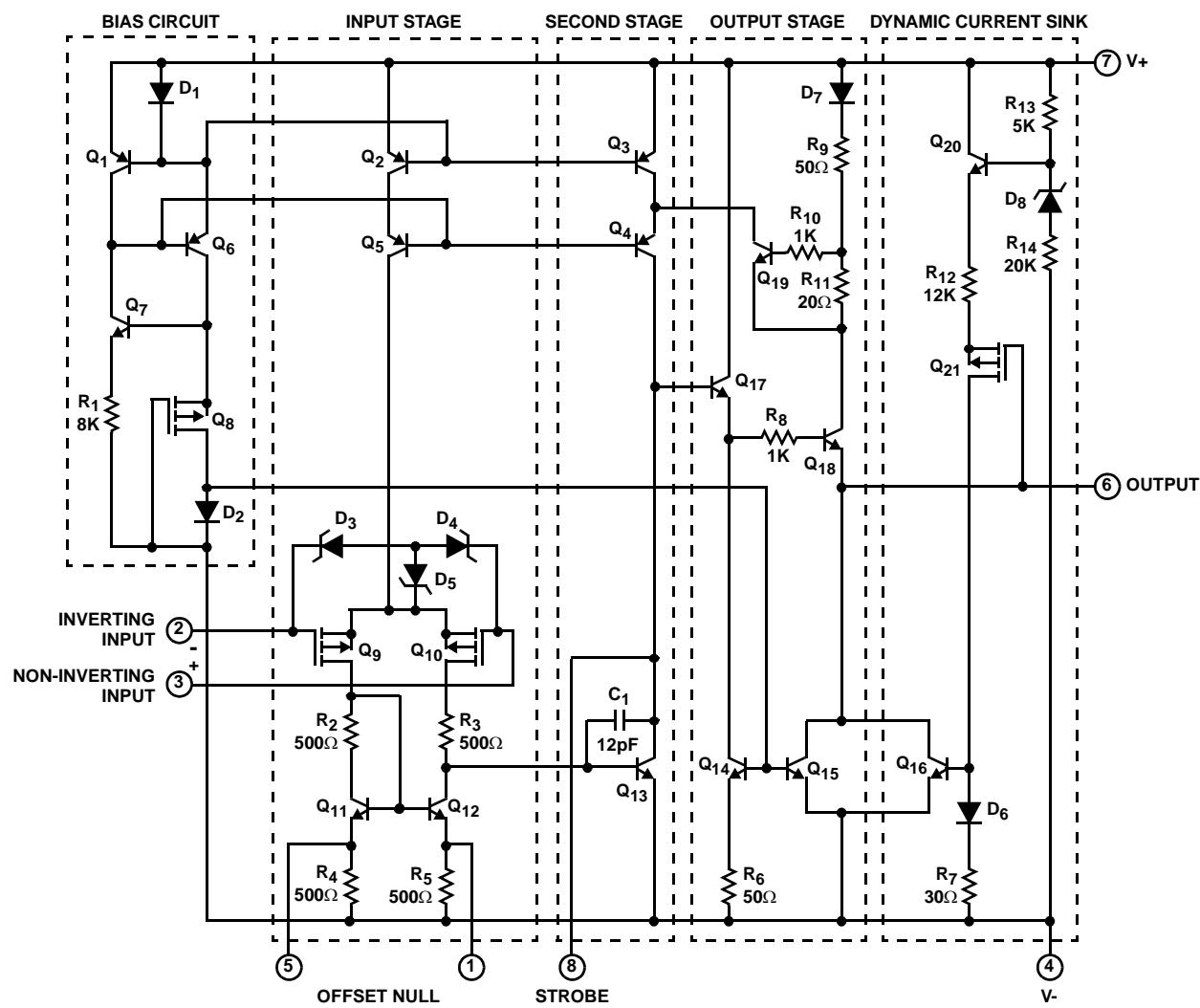
No.	Symbol	Function
1	OA1	Offset Null
2	IN-	Inverting Input
3	IN ₊	Noninverting Input
4	V-	Negative Power Supply
5	OA2	Offset Null
6	OUT	Output
7	V+	Positive Power Supply
8	ST	Strobe



Schematic Diagram



CA3140AMZ96 Block Diagram



CA3140AMZ96 Schematic Diagram



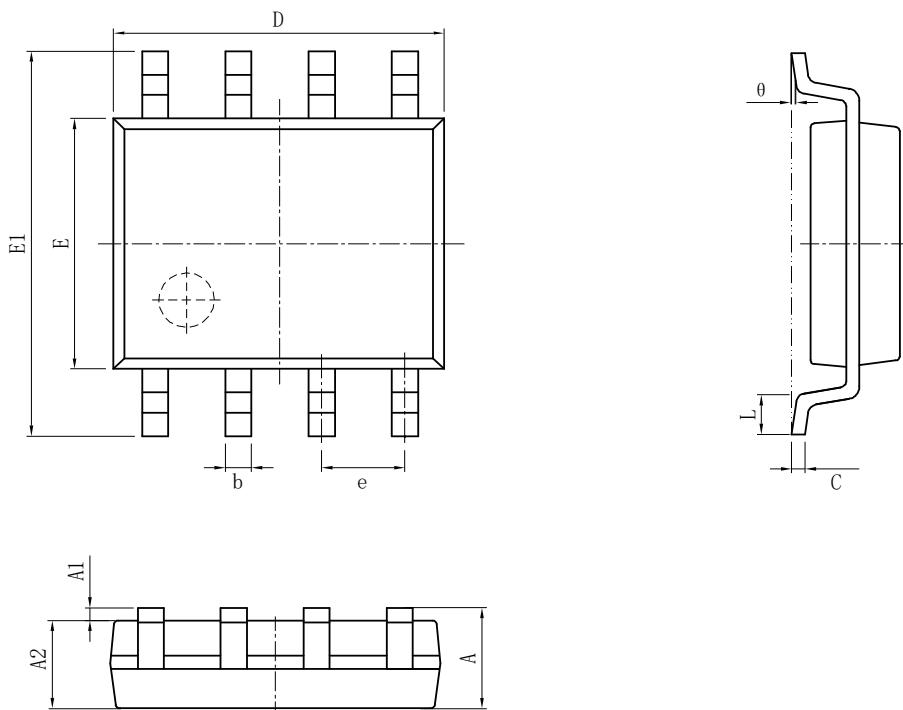
Electrical Characteristics

Vcc=6V, Tamb=25°C, unless otherwise specified.

Parameter	Symbol	Test Conditions (Unless otherwise specified, VS = ±15V, -40°C ≤ TA ≤ 85°C)	Value			Unit	
			TA	CA3140AMZ96			
				Min.	Max.		
Input Offset Voltage	Vi0		25°C		5	mV	
				-	6.5		
Input Offset Voltage Temperature Drift	αVi0			-	24	µV/°C	
Input Offset Current	Io		25°C		20	pA	
					1000		
Input Bias Current	IB		25°C		40	pA	
				-	1500		
Open Loop Voltage Gain	AVO	VO = -14V ~ 12V, RL = 2k Ω	25°C	86	-	dB	
				80			
Common Mode Rejection Ratio	KCMR	VCM = -14V ~ 11V	25°C	70		dB	
				64			
Power Supply Rejection Ratio	KSVR	VS = ±5V ~ ±15V	25°C	76	-	dB	
				70			
Output Voltage Peak	VOPP ⁺	RL = 2k Ω	25°C	+12		V	
				+11.5			
	VOPP ⁻	RL = 2k Ω	25°C	-14	-	V	
				-13.5			
Gain-Bandwidth Product	G • BW	RL = 2kΩ	25°C	3.5		MHz	
Slew Rate	SR	RL = 2kΩ	25°C	6.0		V/µs	
Sink Current (Terminal 8)	/SINK8	Terminal 8 to V-	25°C	160	-	µA	
Supply Current	/S	VS = ±15V, RL = ∞			6	mA	



Package Information SOP-8(SOIC-8)



Symbol	Dimensions In Millimeters		Symbol	Dimensions In Inches	
	Min(mm)	Max(mm)		Min(in)	Max(in)
A	1.350	1.750	A	0.053	0.069
A1	0.100	0.250	A1	0.004	0.010
A2	1.350	1.550	A2	0.053	0.061
b	0.330	0.510	b	0.013	0.020
c	0.170	0.250	c	0.006	0.010
D	4.700	5.100	D	0.185	0.200
E	3.800	4.000	E	0.150	0.157
E1	5.800	6.200	E1	0.228	0.224
e	1.270(BSC)		e	0.050(BSC)	
L	0.400	1.270	L	0.016	0.050
theta	0°	8°	theta	0°	8°



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