

## Feature

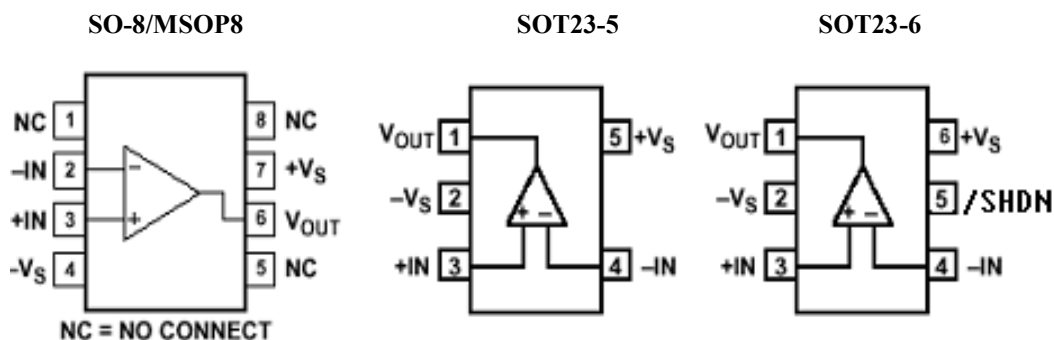
- Power Supply (2.7~5.5V)
- Rail to Rail Input/Output
- Wide Bandwidth 40MHz
- High Slew Rate 80V/us
- Input Offset Voltage 2mV(typical)
- Build in Phase Compensation
- Package Available SOP8, MSOP8, SOT23-5, SOT23-6 And Chip form and Wafer form

## Order Information

HM8651U.....SOP8  
 HM8651OT.....SOT23-5  
 HM8651O8.....SOT23-6  
 HM8651OU í í 0MSOP8

**Transport Media:Tape and Reel**

## Pin Assignment



## Pin Description

Pin Number (SO-8/DIP8)	Pin Number (SOT23-5)	Pin Number (SOT23-6)	Symbol	Description
1			NC	No Connection
2	4	4	-IN	Negative input
3	3	3	+IN	Positive Input
4	2	2	-Vs(GND)	Power Ground
5			NC	No Connection
6	1	1	VOUT	Amp Output
7	5	6	+Vs(VDD)	Power Supply
8			NC	No Connection
		5	/SHDN	When Low, Shutdown mode; Build in pull up resistor.

## Applications

- Cell Phone PA Control Loops
- Driving A/D Converters
- Video Processing(Digital Camera, Digital Video Camera)
- Data Acquisition
- Audio Processing
- Active Filters

### Absolute Maximum Ratings

Item	Symbol	Value	Unit
Power Supply	Vdd	7.0	V
Input Voltage	Vin	0~7.0	V
Different Input Voltage	VinD	+/-5.5	V
Standby Consumption	Pd	200	mW
Operation Temperature	Topr	-40~85	C
Storage Temperature	Tstg	-55~125	C

### Recommended Operating Conditions

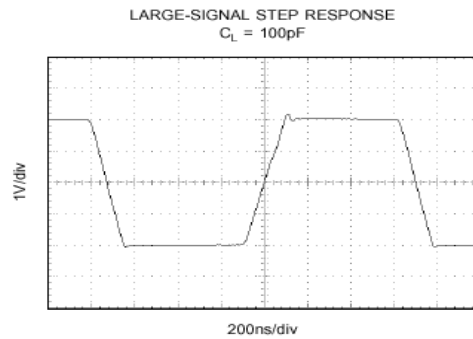
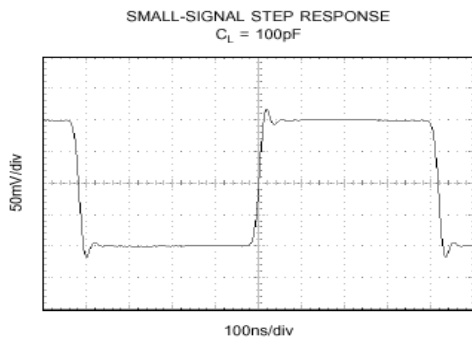
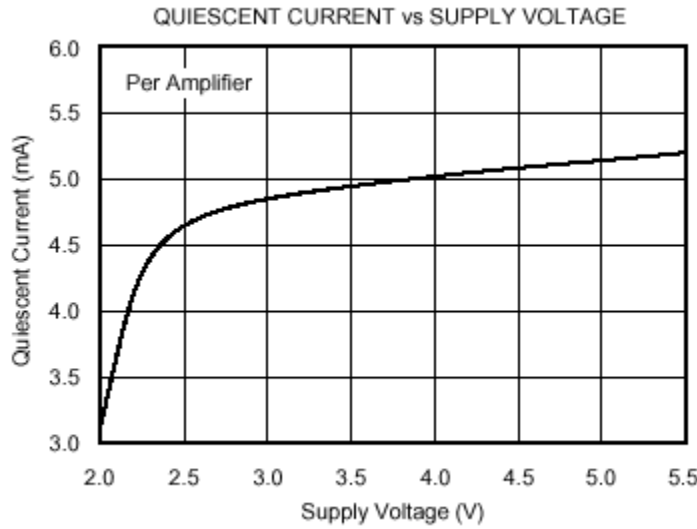
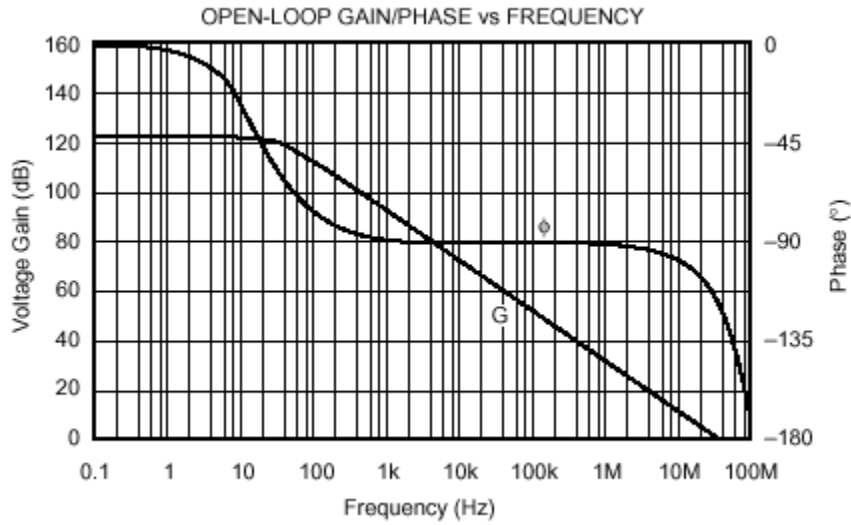
Item	Symbol	Value	Unit
Operation Power Supply	Vdd	2.7~5.5	V
Common Input Voltage	Vin	0~5	V

### DC/AC Electrical Characteristics

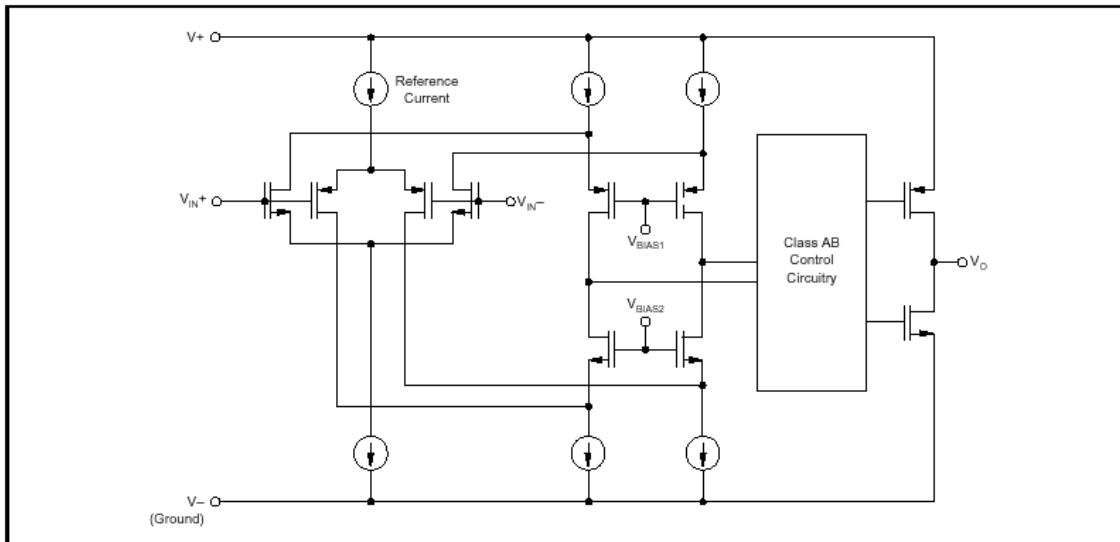
Item	Sym	Test Condition	Min	Typ	Max	Unit
Power Current	Idd	Vdd=5V Vcm=Vout=2.5V		2.5	6	mA
Input Offset Voltage	Vio	Vcm=2.5V, HM8651A		+/-2	+/-7	mV
		Vcm=2.5V, HM8651B		+/-4	+/-10	mV
Input Offset Current	Ios			+/-5	+/-20	pA
Input Bias Current	Ib			+/-5	+/-20	pA
Common Input	Vcmr		0		4.2	V
Output Max	Voh	RL=10k	4.9			V
Output Min	Vol	RL=10k			0.1	V
Common Mode Reject Ratio	CMRR	Vcm=0~Vdd	50	70		dB
Power Supply Reject Ratio	PSRR	Vdd=3.0~5.5V	50	70		dB
Output Current	Iout	Vout=0.5V~4.5V		30		mA
Open Gain	Go	RL=10k	60	80		dB
Operation Temp	T		-40		+85	C
Differential Input Impedance				10E13//2.5		Ω//pf
Short Circuit Current	Isc			+/-60		mA
Input Voltage Noise				6		uVrms
Slew Rate	SR	RL=1.0M, CL=15pf		80		V/us
Unit Gain Bandwidth	Ft	RL=10K		40		MHz

(Vdd=5V, Ta=25C)

*Typical Characteristics*



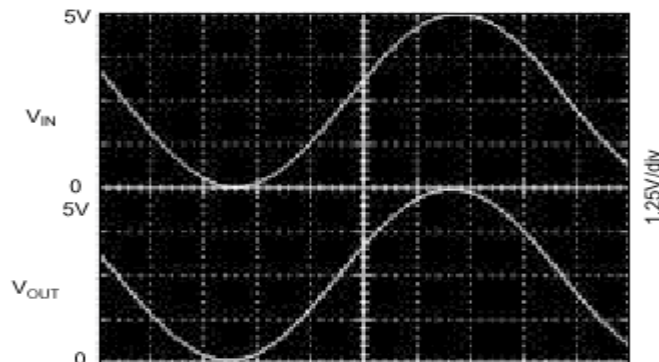
### Simplified Schematic



### Application Information

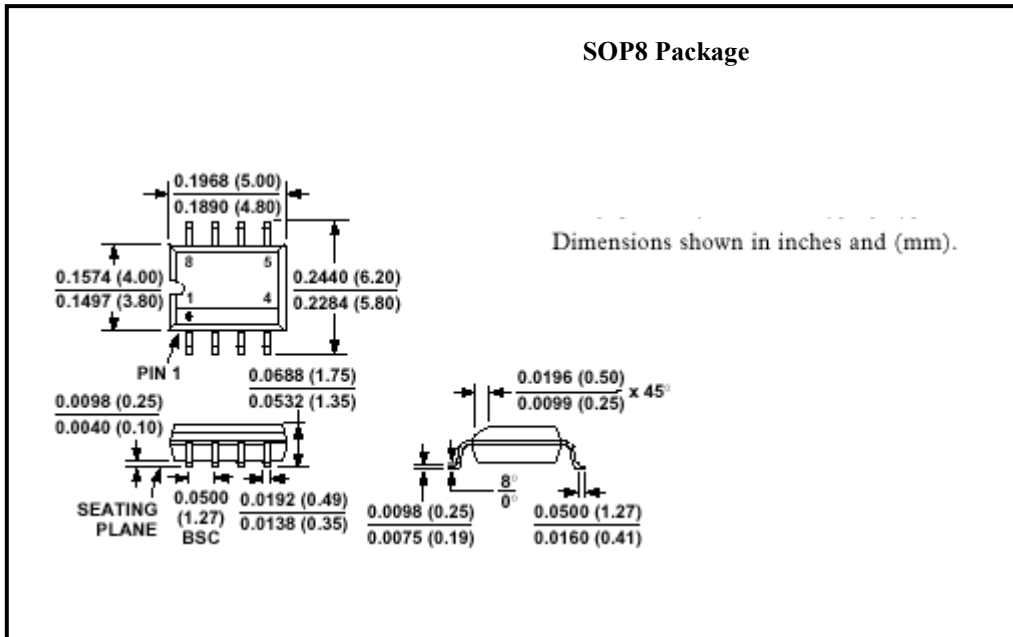
HM8651 series op amps are fabricated on a state-of-the-art 0.6micron CMOS process. They are unity-gain stable and suit-able for a wide range of general-purpose applications. Rail-to-rail input/output make them ideal for driving sampling A/D converters. They are also well suited for controlling the output power in cell phones. These applications often require high speed and low noise. In addition, the HM8651 series offers a low cost solution for general-purpose and consumer video/audio applications.

Rail-to-rail input and output swing significantly increases dynamic range, especially in low voltage supply applications. The following diagram show a real waveform under the condition-HM8651 in unity-gain configuration. Operation is from a single +5V supply with a 10k load connected to  $V_{s/2}$ . The input is a 5Vp-p sinusoid. Output voltage swing is approximately 4.95Vp-p. Power supply pins should be bypassed with 0.01F ceramic capacitors.

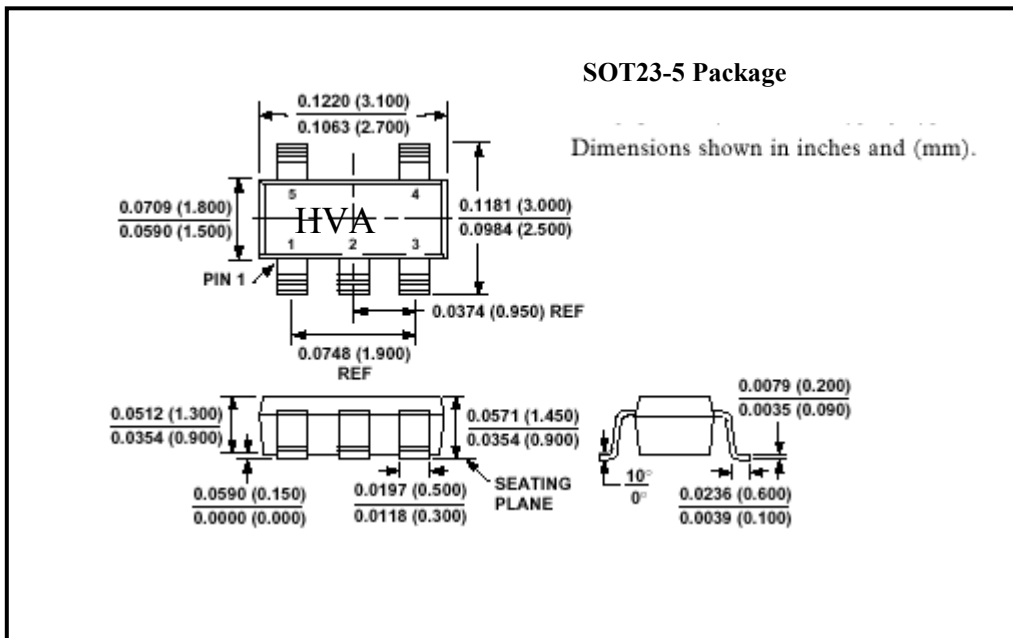


*Package Dimension*

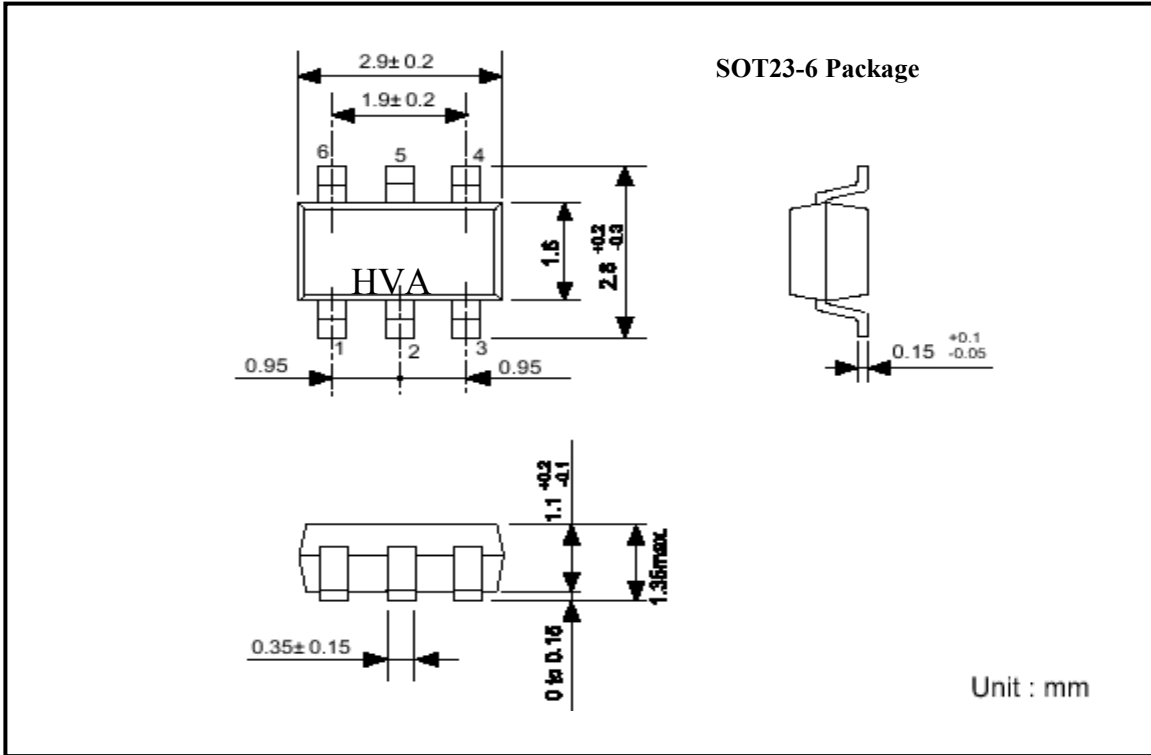
HM8651WE



HM8651T5E



HM8651T6E



HM8651T6E

