KA334

Dual Power Operational Amplifier

Features

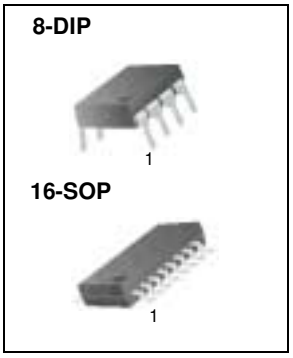
- Output Current upto 0.7A
- Operates at Low Voltage ($V_{S(MIN)}$=4V)
- Low Saturation Voltage (Ip=0.5A, V_O=1.5V)
- Thermal Shutdown (TSD=160°C)
- Ground Compatible Inputs
- Large Common mode & Differential mode Range

Applications

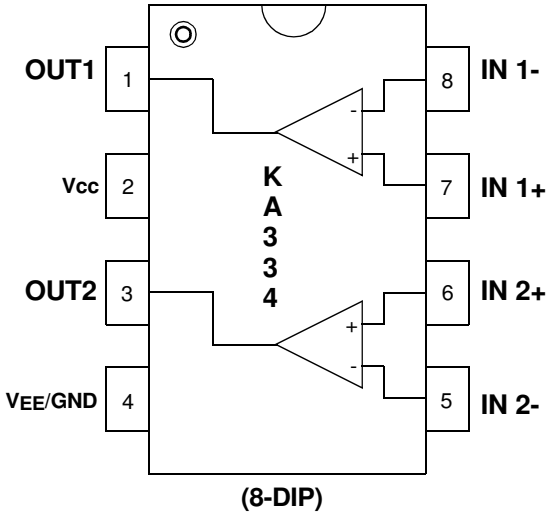
- Servo Amplifier
- Power Supply
- Compact Disc
- VCR
- Monitor

Description

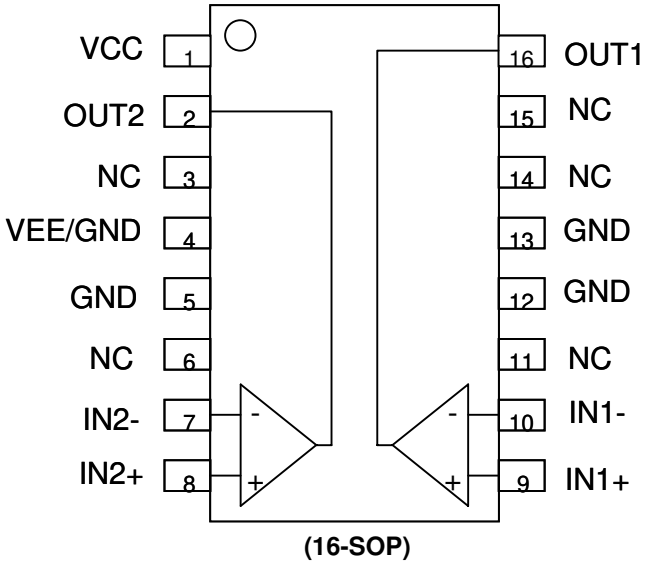
The KA334 is a high-power dual operational amplifier provided as a 8-DIP and 16-SOP package. The operational amplifier is designed for low impedance loads and will deliver output current upto 0.7A. The KA334 can be used in a wide range of applications including power supply, VCR, monitor, servo amplifier, compact disc, etc



Internal Block Diagram



(8-DIP)



(16-SOP)

Rev. 1.0.2

PIN Definitions

Pin Number		Pin Name	Pin Function Descrition
8-DIP	16-SOP		
1	16	OUTPUT1	Amp Output 1
2	1	V_{CC}	Positive Supply Voltage
3	2	OUTPUT2	Amp Output 2
4	4/5/12/13	VEE/GND	Negative Supply Voltage (GND)
5	7	INPUT-2	Amp Negative Input 2
6	8	INPUT+2	Amp Positive Input 2
7	9	INPUT+1	Amp Positive Input 1
8	10	INPUT-1	Amp Negative Input 1

Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Supply Voltage	V_{CC}	40	V
Input Voltage	V_I	V_S	V
Differential Input Voltage	$V_{I(DIFF)}$	$\pm V_S$	V
DC Output Current	I_O	0.7	A
Peak Output Current (non repetitive)	I_P	1	A
Power dissipation at: T_{amb}=50°C	P_{tot}	1	W
Operating Temperature Range	T_{op}	-25 to 85	°C
Storage and Junction Temperature	T_{stg}, T_j	-40 to 150	°C

Thermal Data

Parameter	Symbol	Value	Unit
Thermal Resistance Junction-Ambient Max. 8-DIP 16-SOP	Rθja	 100 190	°C/W

Electrical Characteristics

(Vcc = +12V, V_{EE} = -12V, Ta = 25°C unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Supply Voltage (V_{CC} - V_{EE})	V_S		4	-	28	V
Supply Current	I_S	V_O = V_{CC}/2 V_{CC}=24V, V_{EE}=0V V_{CC}=12V, V_{EE}=0V	-	 8 7.5	 12 11	 mA mA
Input Bias Current	I_{BIAS}	-	-	0.3	2.5	μA
Input Offset Voltage	V_{IO}	-	-	15	60	mV
Input Offset Current	I_{IO}	-	-	50	250	nA
Slew Rate	SR	Vin = 1Vpp, Unit Gain	-	1	-	V/μs
Gain-Bandwidth Product	GBW	-	-	350	-	KHz
Input Resistance	R_I	-	500	-	-	KΩ
Lange Signal	G_V	$V_{O(pp)}$ = ±10V	65	75	-	dB
Input Noise Voltage	e_N	B = 20KHz	-	10	-	μV
Input Noise Current	I_N	B = 20KHz	-	200	-	pA
Common Mode Rejection Ratio	CMRR	-	60	75	-	dB
Supply Voltage Rejection Ratio	PSRR	V_{CC} =+15V, V_{EE} = -15V V_{CC} =+5V, V_{EE} = -5V	54	62	-	dB
Output Voltage Swing	V_O	V_{CC} = 24V, V_{EE} = 0V Ip = 0.1A Ip = 0.5A	 21 21	 23 22.5	 - -	 V V
Channel Separation	C_S	f = 1kHz; R_L = 10Ω, G_V = 30dB	-	60	-	dB
Total Harmonic Distortion	THD	f = 1kHz, G_V = 1dB,R_L = ∞	-	0.5	-	%
Thermal stutdown Temperature (Note1)	TSD	-	-	160	-	°C

Note :

1. Guaranteed by design. Not 100% tested in production.

Typical Perfomance Characteristics

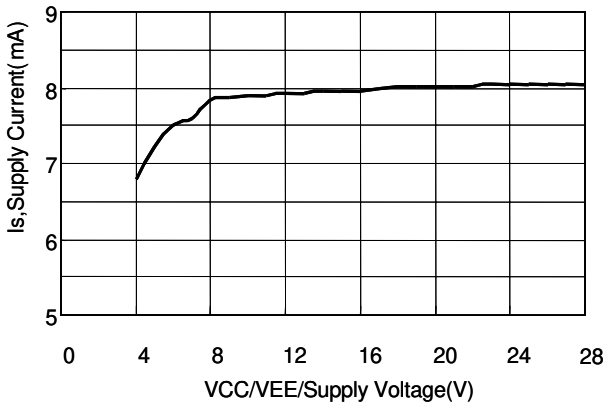


Figure 1. Supply Voltage vs Supply Current with No Load

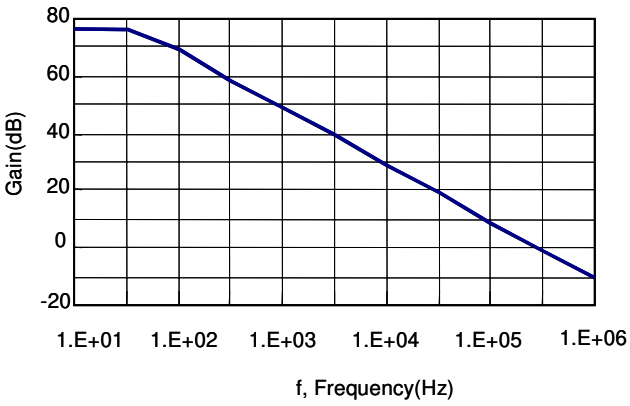


Figure 2. Open Loop Voltage Gain

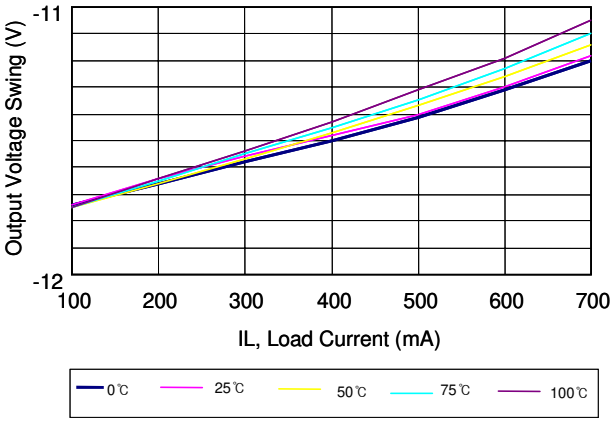


Figure 3-1. Output Voltage Swing vs Load Current

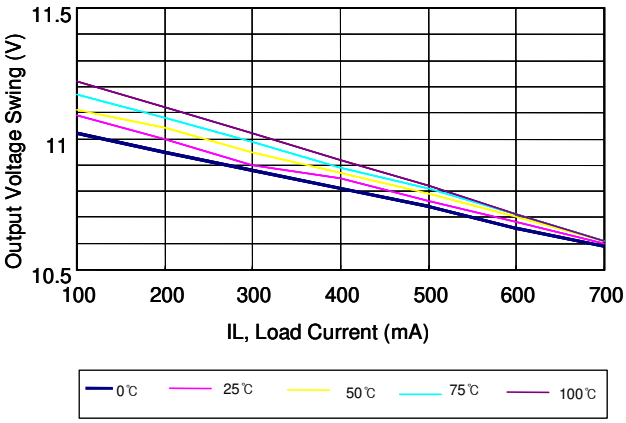


Figure 3-2. Output Voltage Swing vs Load Current

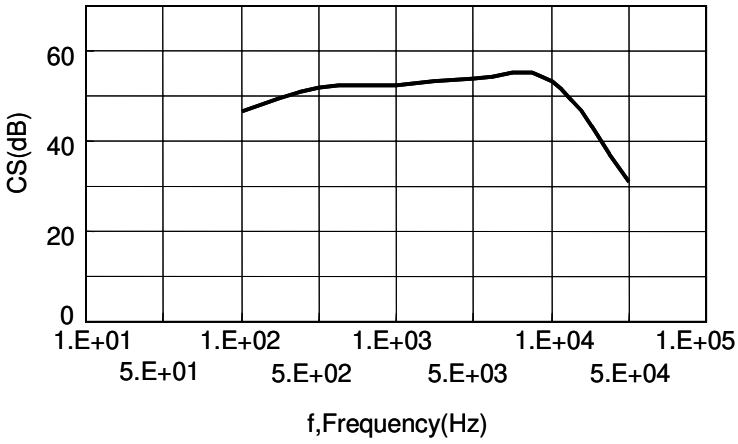
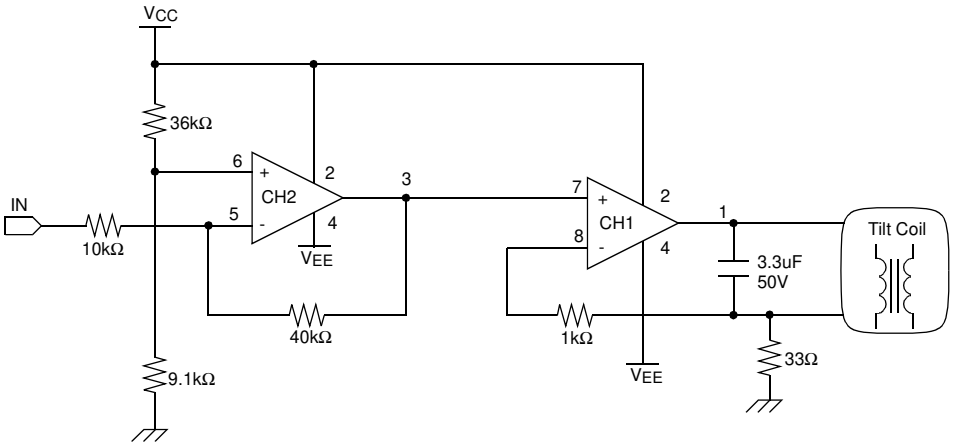


Figure 6. Channel Separation vs Frequency

Applications



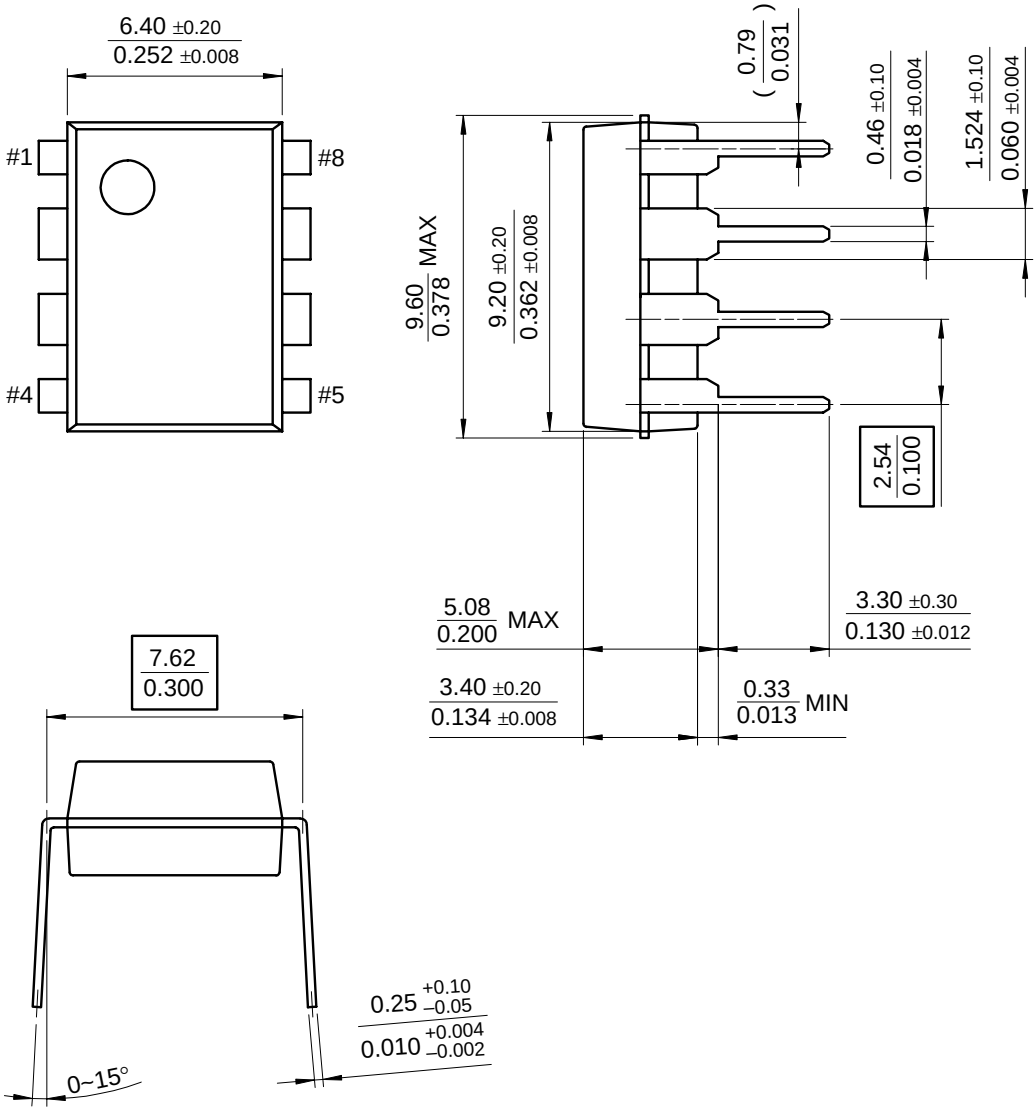
< Tilt Coil Current Control Circuit in Monitor, 8-DIP Package>

Mechanical Dimensions

Package

Dimensions in millimeters

8-DIP

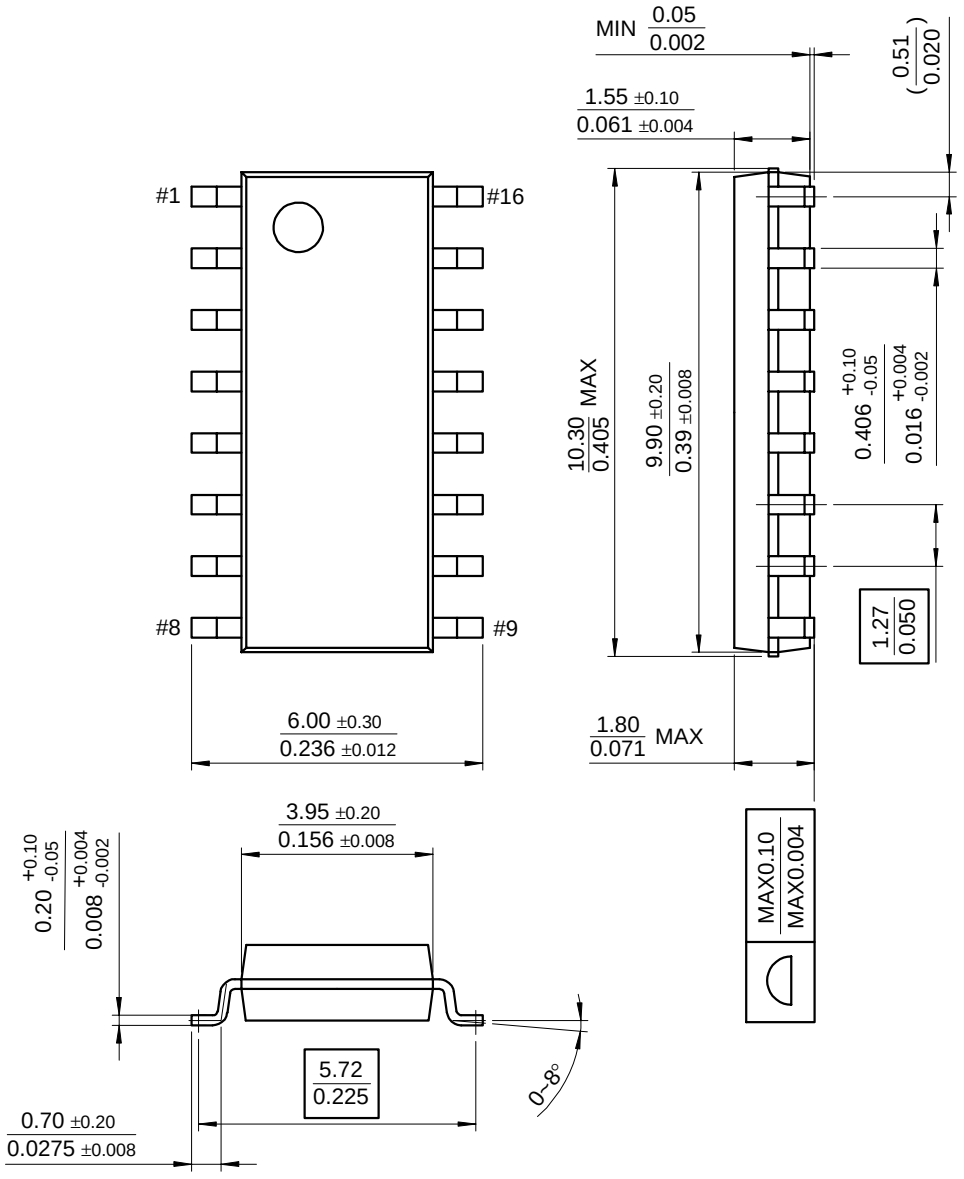


Mechanical Dimensions

Package

Dimensions in millimeters

16-SOP



Ordering Information

Product Number	Package	Operating Temperature
KA334	8-DIP	-25°C ~ +85°C
KA334D	16-SOP	