

KA334

Dual Power Operational Amplifier

Features

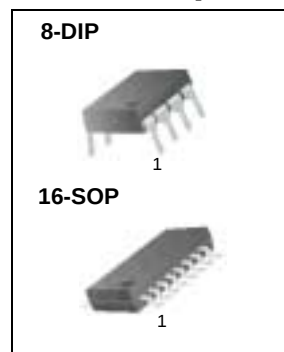
- Output Current upto 0.7A
- Operates at Low Voltage ($V_{S(MIN)}=4V$)
- Low Saturation Voltage ($I_p=0.5A$, $V_O=1.5V$)
- Thermal Shutdown ($T_{SD}=160^{\circ}C$)
- Ground Compatible Inputs
- Large Common mode & Differential mode Range

Applications

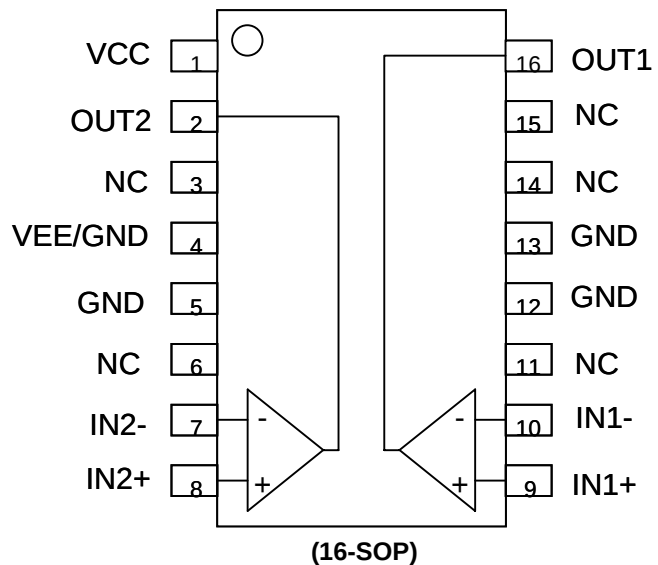
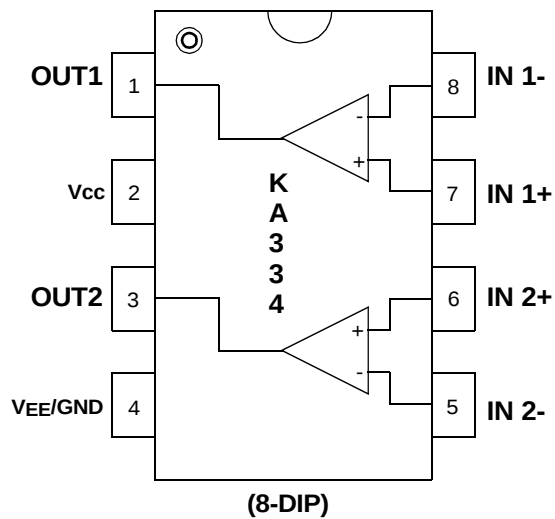
- Servo Amplifier
- Power Supply
- Compact Disc
- VCR
- Monitor

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



PIN Definitions

Pin Number		Pin Name	Pin Function Description
8-DIP	16-SOP		
1	16	OUTPUT1	Amp Output 1
2	1	VCC	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	VCC	40	V
Input Voltage	V _I	V _S	V
Differential Input Voltage	V _{I(DIFF)}	±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	R _{θja}	100 190	°C/W

Electrical Characteristics

($V_{CC} = +12V$, $V_{EE} = -12V$, $T_a = 25^{\circ}C$ 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	$V_{in} = 1V_{pp}$, Unit Gain	-	1	-	V/ μs
Gain-Bandwidth Product	GBW	-	-	350	-	KHz
Input Resistance	R_I	-	500	-	-	K Ω
Large Signal	G_V	$V_{O(pp)} = \pm 10V$	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	$V_{CC} = 24V$, $V_{EE} = 0V$ $I_p = 0.1A$ $I_p = 0.5A$	21 21	23 22.5	- -	V V
Channel Separation	C_S	$f = 1kHz$; $R_L = 10\Omega$, $G_V = 30dB$	-	60	-	dB
Total Harmonic Distortion	THD	$f = 1kHz$, $G_V = 1dB$, $R_L = \infty$	-	0.5	-	%
Thermal shutdown Temperature (Note1)	TSD	-	-	160	-	$^{\circ}C$

Note :

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

Typical Performance Characteristics

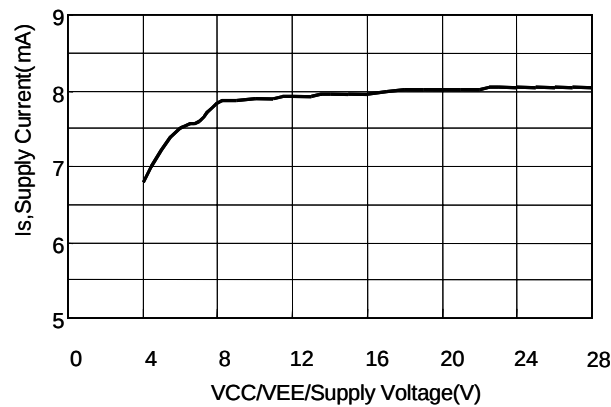


Figure 1. Supply Voltage vs Supply Current with No Load

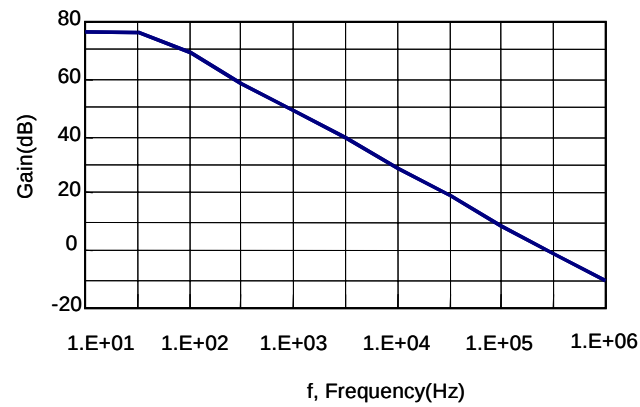


Figure 2. Open Loop Voltage Gain

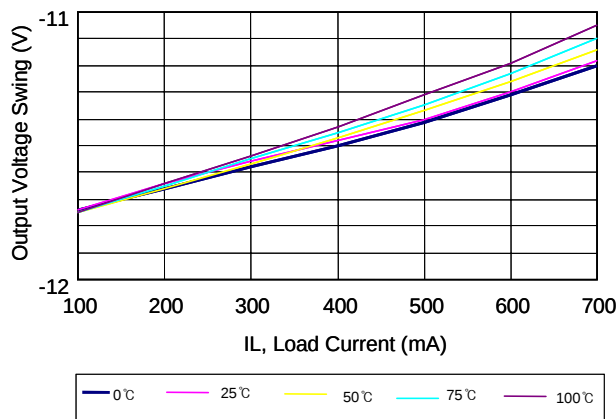


Figure 3-1. Output Voltage Swing vs Load Current

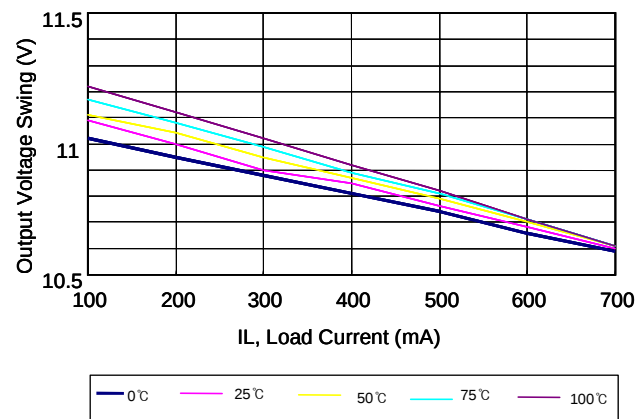


Figure 3-2. Output Voltage Swing vs Load Current

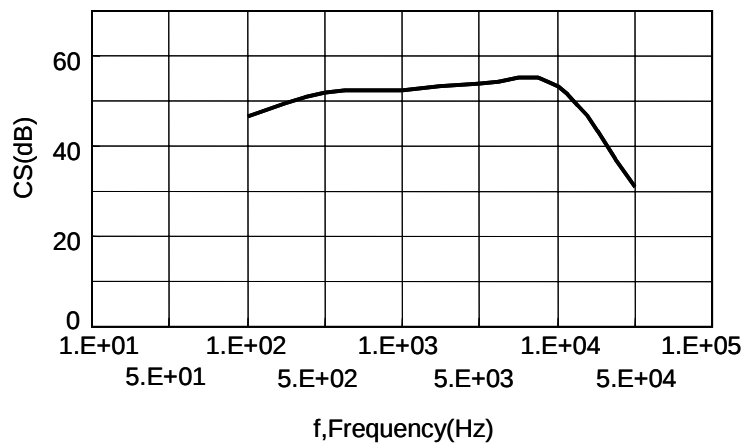
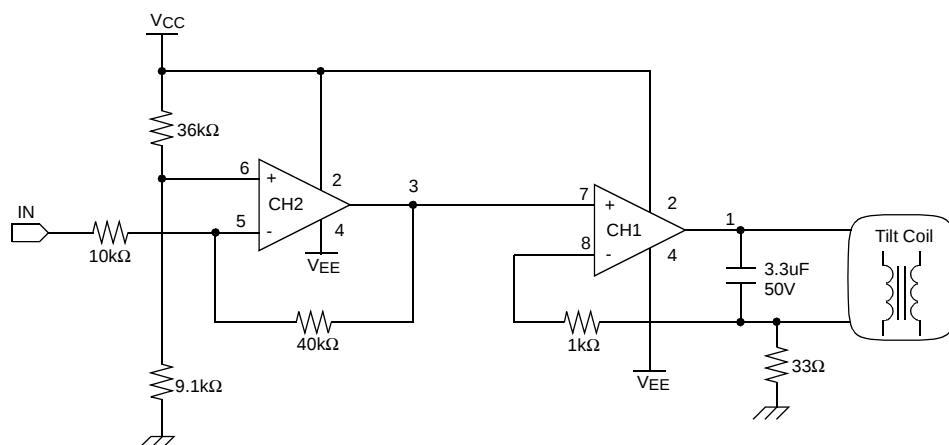


Figure 6. Channel Separation vs Frequency

Applications



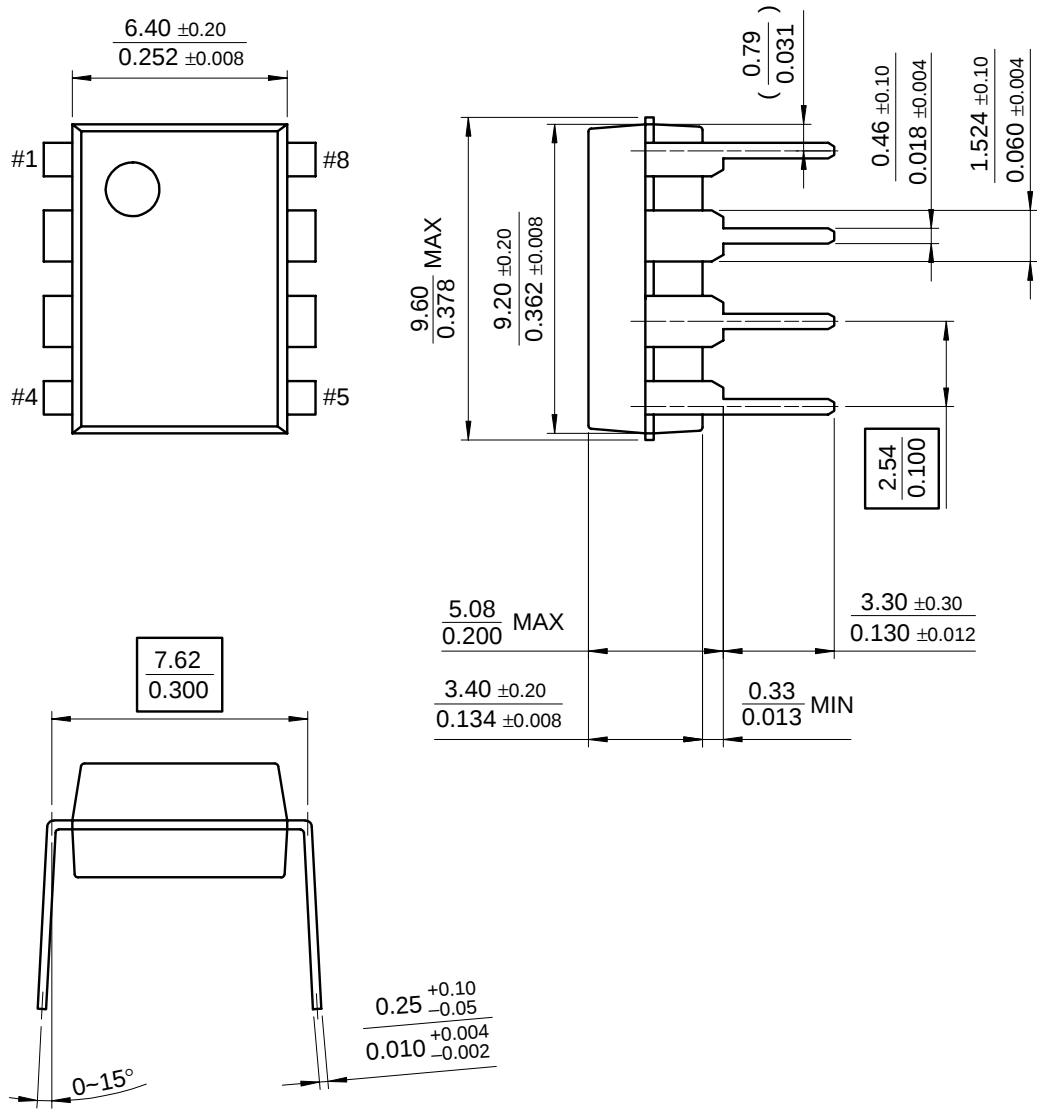
< Tilt Coil Current Control Circuit in Monitor, 8-DIP Package >

Mechanical Dimensions

Package

Dimensions in millimeters

8-DIP



Ordering Information

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

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