

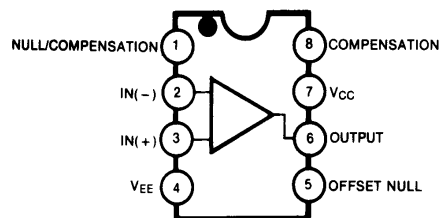
SINGLE OPERATIONAL AMPLIFIER

The KA201A and KA301A are general-purpose operational amplifiers which are externally phase compensated, permit a choice of operation for optimum high-frequency performance at a selected gain: unity-gain compensation can be obtained with a single capacitor.

FEATURES

- Short-circuit protection and latch-free operation
- Slew rate of $10\text{V}/\mu\text{s}$ as a summing amplifier
- Class AB output provides excellent linearity
- Low bias current

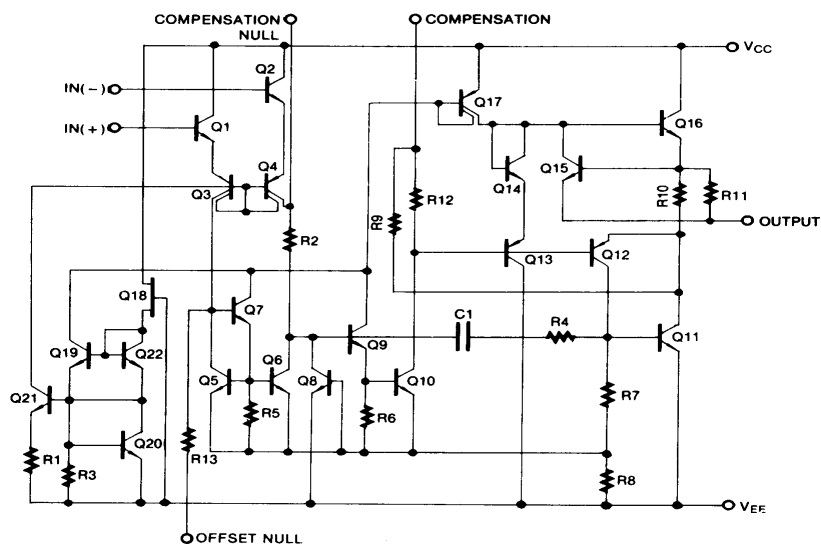
BLOCK DIAGRAM



ORDERING INFORMATION

Device	Package	Operating Temperature
KA301A	8 DIP	$0 \sim +70^{\circ}\text{C}$
KA201A		$-25 \sim +85^{\circ}\text{C}$
KA301AD	8 DIP	$0 \sim +70^{\circ}\text{C}$
KA201AD		$-25 \sim +85^{\circ}\text{C}$

SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Characteristic	Symbol	KA201A	KA301A	Unit
Supply Voltage	V_{CC}	± 22	± 18	V
Differential Input Voltage	$V_{I(OFF)}$	± 30	± 30	V
Input Voltage	V_I	± 15	± 15	V
Output short Circuit Duration		Continuous	Continuous	
Power Dissipation	P_D	500	500	mW
Operating Temperature Range	T_{OPR}	-25 ~ +85	0 ~ +70	°C
Storage Temperature Range	T_{STG}	-65 ~ +150	- 65 ~ + 150	°C

ELECTRICAL CHARACTERISTICS

(T_A = +25°C, V_{CC} = +15V, V_{EE} = -15V, unless otherwise specified)

Characteristic	Symbol	Test Conditions	KA201A			KA301A			Unit
			Min	Typ	Max	Min	Typ	Max	
Input Offset Voltage	V_{IO}	$R_S \leq 50K\Omega$		0.5	2.0		2.0	7.5	mV
		NOTE 1			3			10	mV
Input Offset Current	I_{IO}			1.5	10		4.5	50	nA
		NOTE 1			20			70	nA
Input Bias Current	I_{BIAS}			40	75		60	250	nA
		NOTE 1			100			300	nA
Supply Current	I_{CC}	$V_{CC} = \pm 20V$		2.0	3.0				mA
		$V_{CC} = \pm 15V$				2.0	3.0		mA
		$V_{CC} = \pm 20V, T_A = T_{A(MAX)}$		1.7	2.5				mA
Large Signal Voltage Gain	G_V	$V_{CC} = \pm 15V, R_L \geq 2K\Omega, V_{O(P,P)} = \pm 10V$	50	160		25	160		V/mV
		NOTE 1	25			15			V/mV
Average Temperature Coefficient of Input Offset Voltage	$\Delta V_{IO}/\Delta T$	NOTE 1		3.0	15		6.0	30	$\mu V/^\circ C$
Average Temperature Coefficient of Input Offset Current	$\Delta I_{IO}/\Delta T$	$25^\circ C \leq T_A \leq T_{A(MAX)}$		0.01	0.1		0.01	0.3	nA/°C
		$T_{A(MIN)} \leq T_A \leq 25^\circ C$		0.02	0.2		0.02	0.6	nA/°C
Input Voltage Range	$V_{I(R)}$	$V_{CC} = \pm 20V$	± 15						V
		$V_{CC} = \pm 15V$				± 12			V
Common-Mode Rejection Ratio	CMRR	$R_S \leq 50K\Omega$	80	100		70	95		dB
Power Supply Rejection Ratio	PSRR	$R_S \leq 50K\Omega$	80	100		70	100		dB
Output Voltage Swing	$V_{O(P,P)}$	$V_{CC} = \pm 15V$	± 12	± 14		± 12	± 14		V
			± 10	± 13		± 10	± 13		V
Input Resistance	R_I		1.5	4.0		0.5	2.0		M Ω

NOTE 1. KA201A: -25°C ≤ T_A ≤ +85°CKA301A: 0°C ≤ T_A ≤ +70°C

TYPICAL PERFORMANCE CHARACTERISTICS

Fig. 1 SUPPLY CURRENT

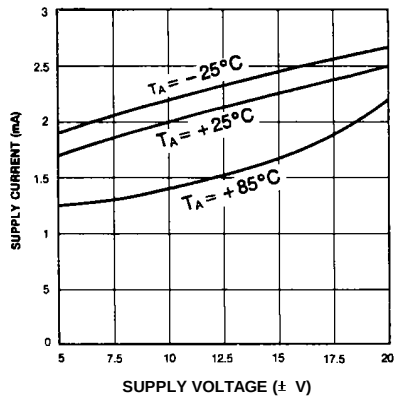


Fig. 2 VOLTAGE GAIN

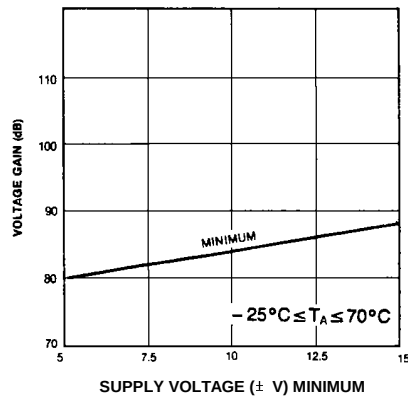


Fig. 3 CURRENT LIMITING

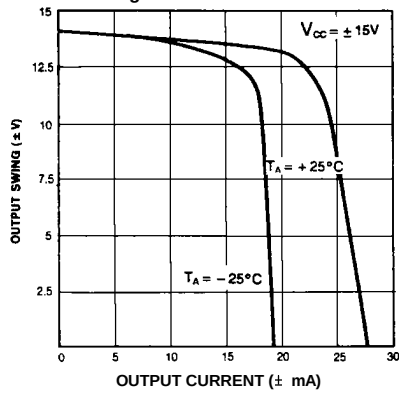


Fig. 4 INPUT CURRENT

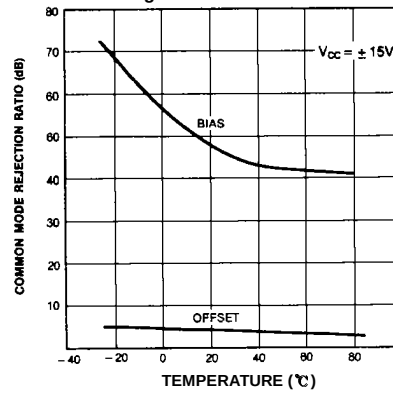


Fig. 5 POWER SUPPLY REJECTION

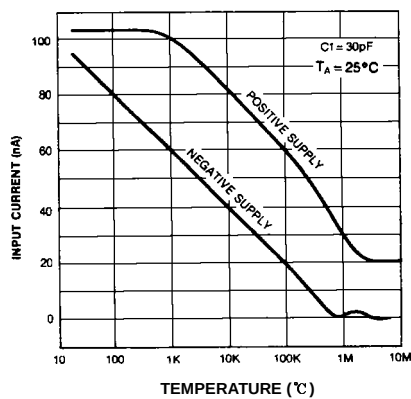
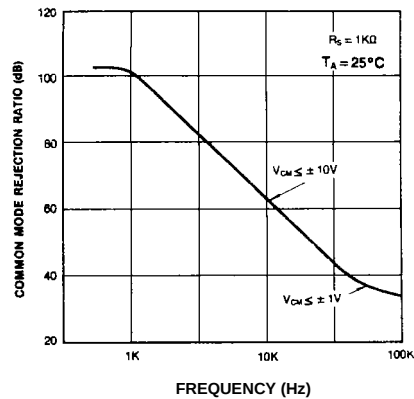


Fig. 6 COMMON MODE REJECTION



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