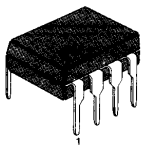
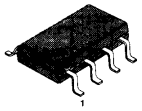
SINGLE OPERATIONAL AMPLIFIER

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.

8 DIP



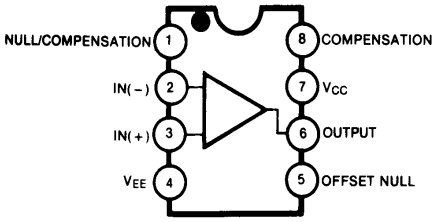
8 SOP



FEATURES

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

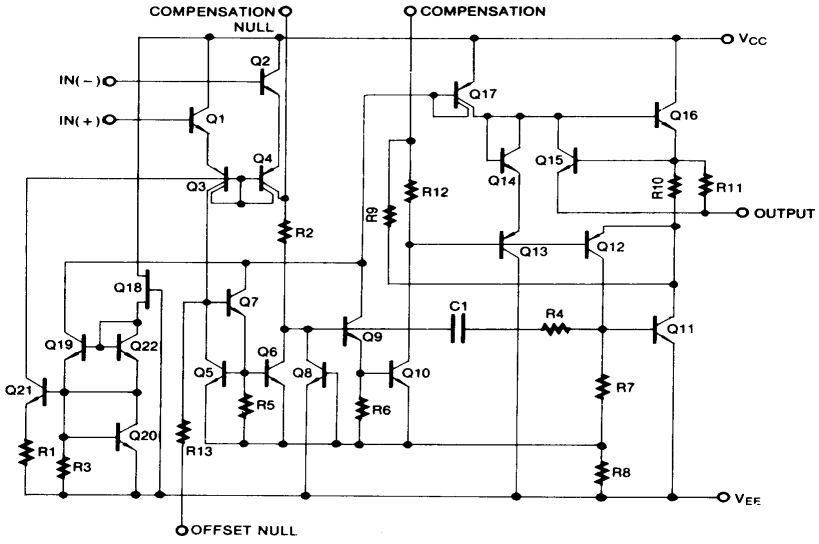
BLOCK DIAGRAM



ORDERING INFORMATION

Device	Package	Operating Temperature
KA301A	8 DIP	0 ~ + 70℃
KA201A		-25 ~ +85℃
KA301AD	8 DIP	0 ~ + 70℃
KA201AD		-25 ~ + 85℃

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	℃
Storage Temperature Range	T_{STG}	-65 ~ +150	- 65 ~ + 150	℃

ELECTRICAL CHARACTERISTICS

(T_A =+25℃, 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≤ 50KΩ			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} =± 20V			2.0	3.0				mA
		V_{CC} =± 15V						2.0	3.0	mA
		V_{CC} = ± 20V, T_A = $T_{A(MAX)}$			1.7	2.5				mA
Large Signal Voltage Gain	G_V	V_{CC}=± 15V,R_L≥ 2KΩ ,$V_{O(P.P)}$=± 10V		50	160		25	160		V/mV
			NOTE 1	25			15			V/mV
Average Temperature Coefficient of Input Offset Voltage	Δ V_{IO}/Δ T	NOTE 1			3.0	15		6.0	30	μ V/℃
Average Temperature Coefficient of Input Offset Current	Δ I_{IO}/Δ T	25℃≤ T_A≤ $T_{A(MAX)}$			0.01	0.1		0.01	0.3	nA/℃
		$T_{A(MIN)}$≤ T_A≤ 25℃			0.02	0.2		0.02	0.6	nA/℃
Input Voltage Range	$V_{I(R)}$	V_{CC} =± 20V	NOTE 1	± 15						V
		V_{CC} =± 15V	NOTE 1				± 12			V
Common-Mode Rejection Ratio	CMRR	R_S≤ 50KΩ	NOTE 1	80	100		70	95		dB
Power Supply Rejection Ratio	PSRR	R_S≤ 50KΩ	NOTE 1	80	100		70	100		dB
Output Voltage Swing	$V_{O(P.P)}$	V_{CC} =± 15V	R_L = 10KΩ	± 12	± 14		± 12	± 14		V
			R_L = 2.0KΩ	± 10	± 13		± 10	± 13		V
Input Resistance	R_I			1.5	4.0		0.5	2.0		MΩ

NOTE 1. KA201A: -25≤ T_A≤ +85℃
KA301A: 0≤ T_A≤ +70℃

TYPICAL PERFORMANCE CHARACTERISTICS

Fig. 1 SUPPLY CURRENT

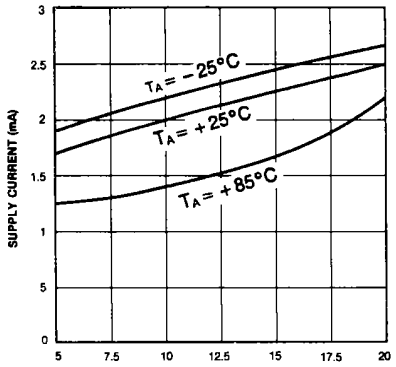


Fig. 2 VOLTAGE GAIN

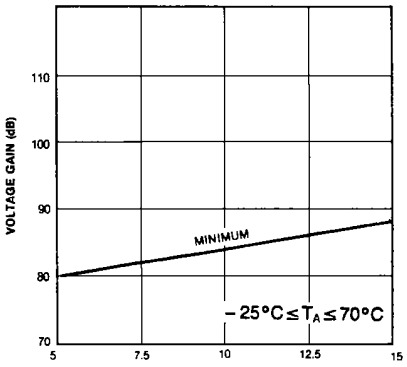


Fig. 3 CURRENT LIMITING

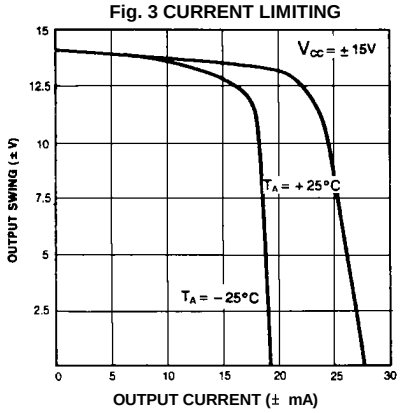


Fig. 4 INPUT CURRENT

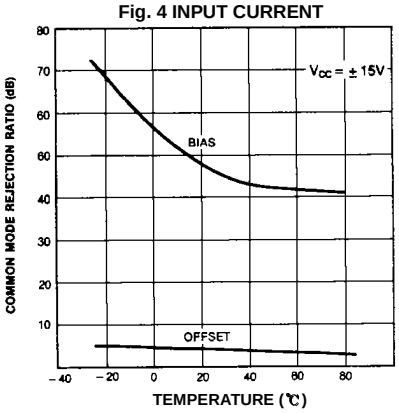


Fig. 5 POWER SUPPLY REJECTION

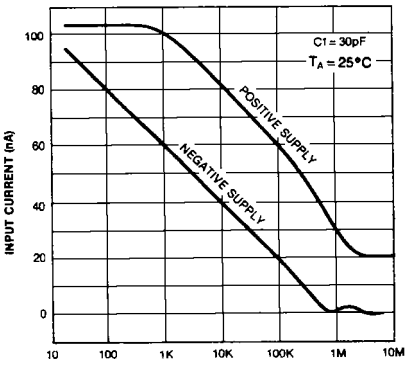
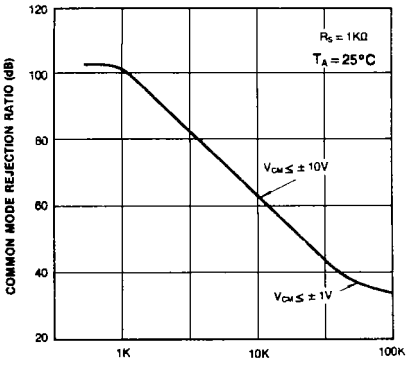
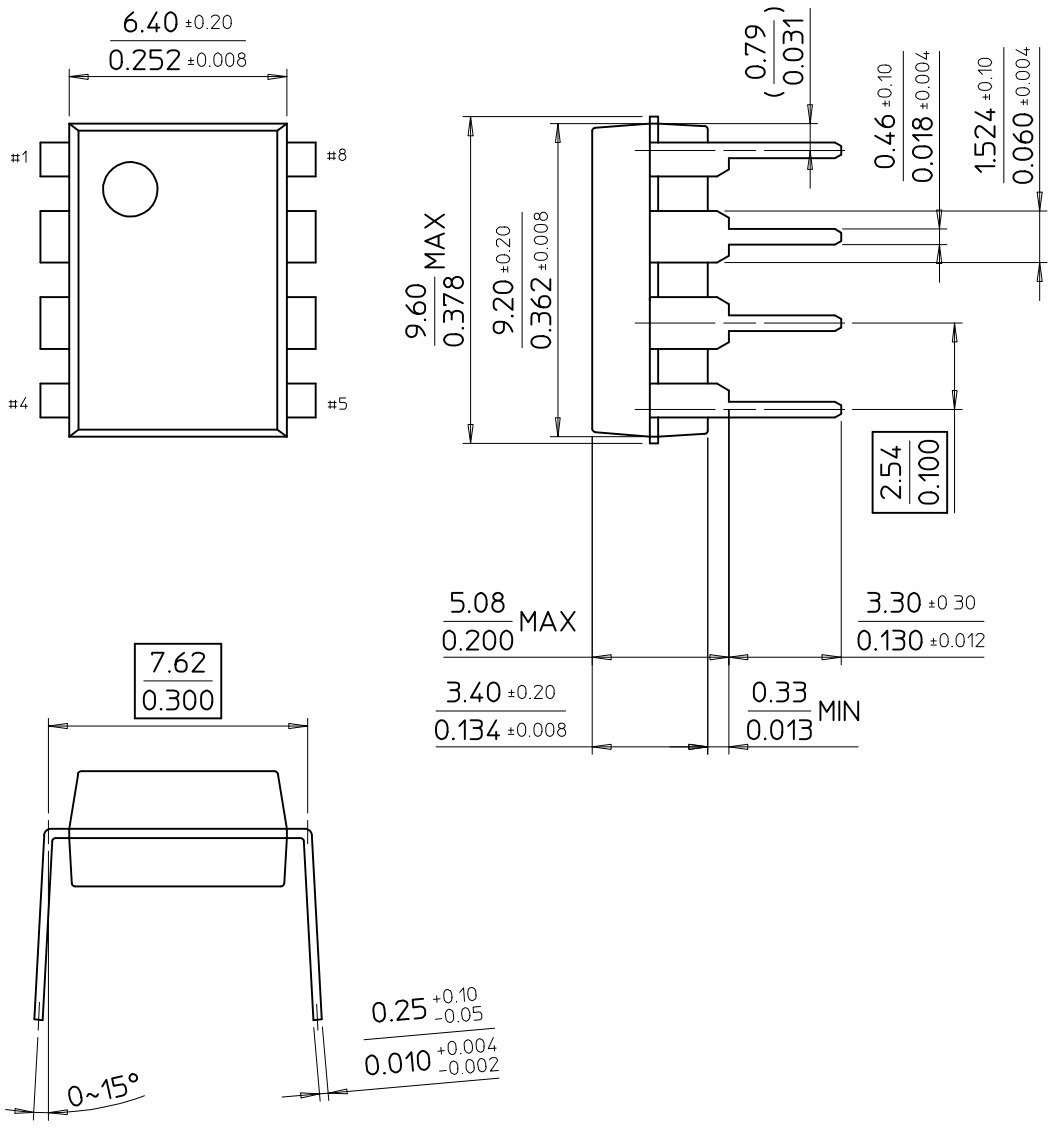


Fig. 6 COMMON MOOE REJECTION



8–DIP–300

Dimensions in Milimeters/inches



SAMSUNG ELECTRONICS CO.,LTD.