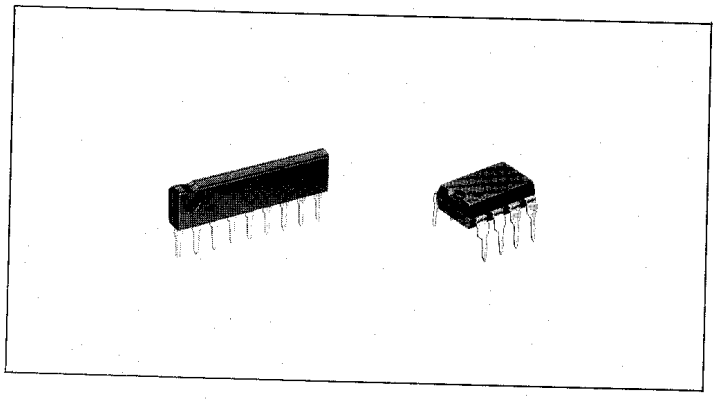
ROHM



The BA718/BA728 is a monolithic integrated circuit consisting of a dual operational amplifier with internal phase compensation. It operates over the wide range of 3~18V (±1.5~±9V) and offers high performance from a single power supply including the negative supply, in the in-phase mode when the power supply voltage is within the input level range.
The current required for this device with V_{CC} of 6V and V_{EE} of −6V is 1.2mA, representing a 50% cut in required power as compared with the BA4558.

Features

1. Operates from a single power supply.
2. Low power consumption
3. The same pin configuration as the general purpose BA4558 is used.
4. Supply voltage range of 3~18V when operating from a single supply
5. Supply voltage range of ±1.5~±9V when operating from a dual supply
6. Short-protected output circuit
7. AB Class operation is used in the final stage to reduce crossover distortion to a minimum.
8. Typical input bias current is a low 10mA.
9. Two independent amplifiers are housed in a single package.
0. Internal phase compensation

Applications

1. Ground-sensing small-signal amplifiers
2. Control amplifiers such as those for motor drive applications which require a high phase margin
3. Low-power, low-voltage amplifiers
4. Amplifiers used to drive capacitive loads
5. Other electronic circuits

Dimensions (mm)

BA718

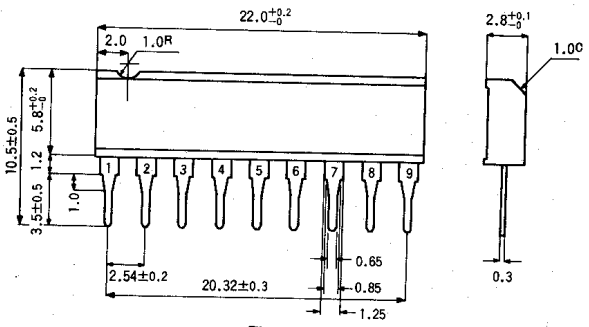


Fig. 1

BA728

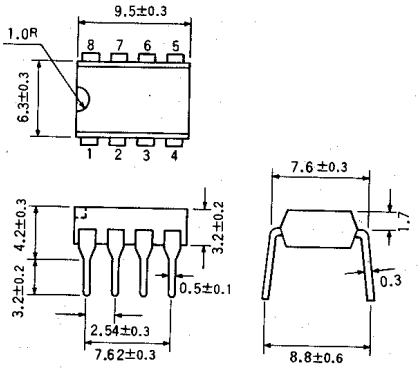


Fig. 2

Block Diagram

BA718

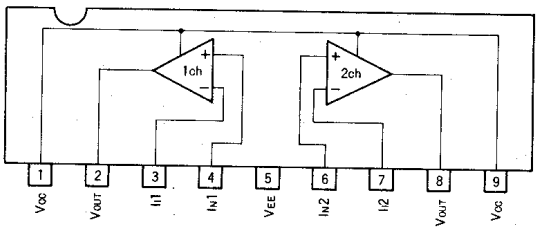


Fig. 3

BA728 (Top View)

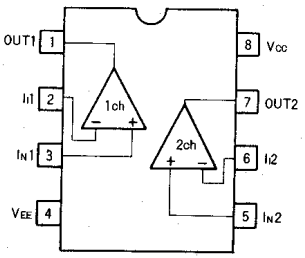


Fig. 4

Circuit Diagram

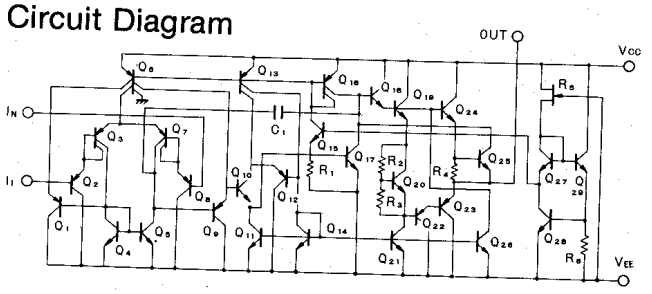


Fig. 5

Absolute Maximum Ratings (T_a = 25°C)

Parameter	Symbol	Limits	Unit
Supply voltage	V_{CC}	2525	V
Differential input voltage	V_{id}	2525	V
In-phase input voltage range	V_{icm}	−0.3~+25	V
Power dissipation	P_d	450	mW
Operating temperature	T_{opr}	−20~+70	°C
Storage temperature	T_{stg}	−55~+125	°C

* Derating is done at 4.5mW/°C for operation above T_a = 25°C.

Electrical Characteristics (T_a = 25°C, V_{CC} = 6V, V_{EE} = −6V)

Parameter	Symbol	Min	Typ	Max	Unit	Conditions
Input offset voltage	V_{IO}	—	2	10	mV	
Input offset current	I_{IO}	—	I	50	nA	
Inpt bias current	I_B	—	10	250	nA	
In-phase input voltage range	V_{ICM}	V_{EE}	—	V_{CC}−1.5	V	
Supply current	I_{CC}	—	1.2	2.0	mA	
Large-signal voltage gain	A_V	86	100	—	dB	$R_L \geqslant 2k\Omega$
Output voltage amplitude	V_O	±3.0	±4.5	—	V	R_L = 2kΩ0
Common mode rejection ratio	CMR	70	90	—	dB	
Supply variation rejection ratio	SVR	—	30	150	μV/V	
Channel separation	Sep	—	120	—	dB	
Output current (source)	$I_{osource}$	—	20	—	mA	V_{IN}^+ = 1V, V_{IN}^- = 0V
Output current (sink)	I_{osink}	—	20	—	mA	V_{IN}^- = 1V, V_{IN}^+ = 0V

Note: Because the 1st stage uses a PNP transistor input, the input bias current is taken as flowing from the IC.

Electrical Characteristic Curves

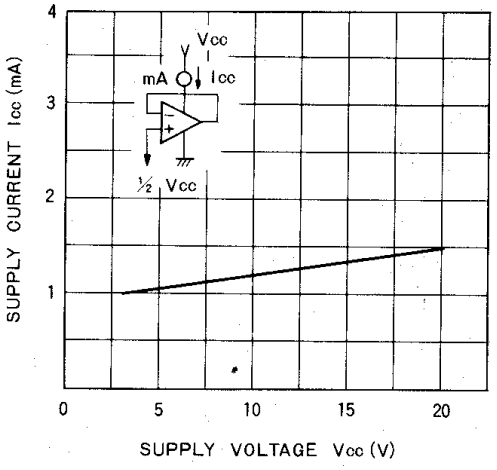


Fig. 6 Supply current vs. supply voltage

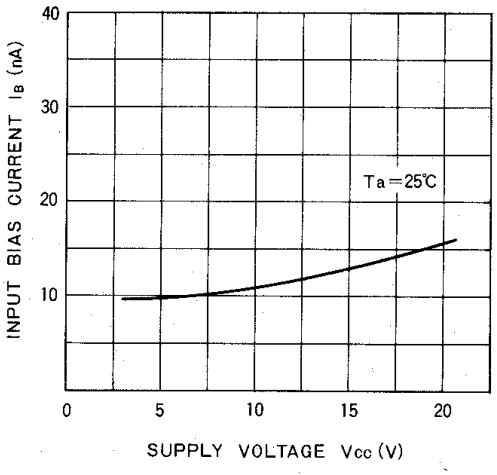


Fig. 7 Input bias current vs. supply voltage

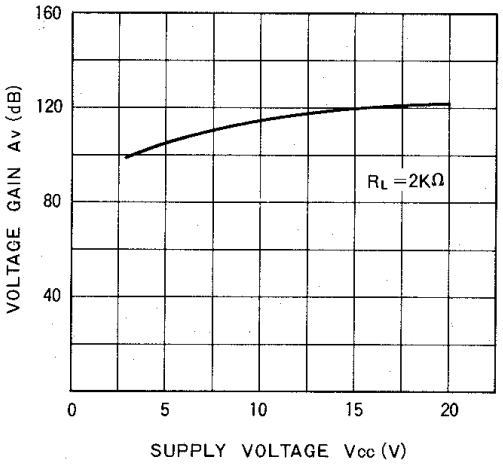


Fig. 8 Voltage gain vs. supply voltage