

Dual high slew rate operational amplifier

BA4560 / BA4560F / BA4560N

The BA4560, BA4560F, and BA4560N are dual operational amplifiers which achieve approximately twice the high output current of the BA4558, as well as featuring a higher slew rate of $4V / \mu s$, a gain band width of 10MHz, and an improved frequency characteristic. The following packages are available: 8-pin DIP (BA4560), 8-pin SOP (BA4560F), and 8-pin SIP (BA4560N).

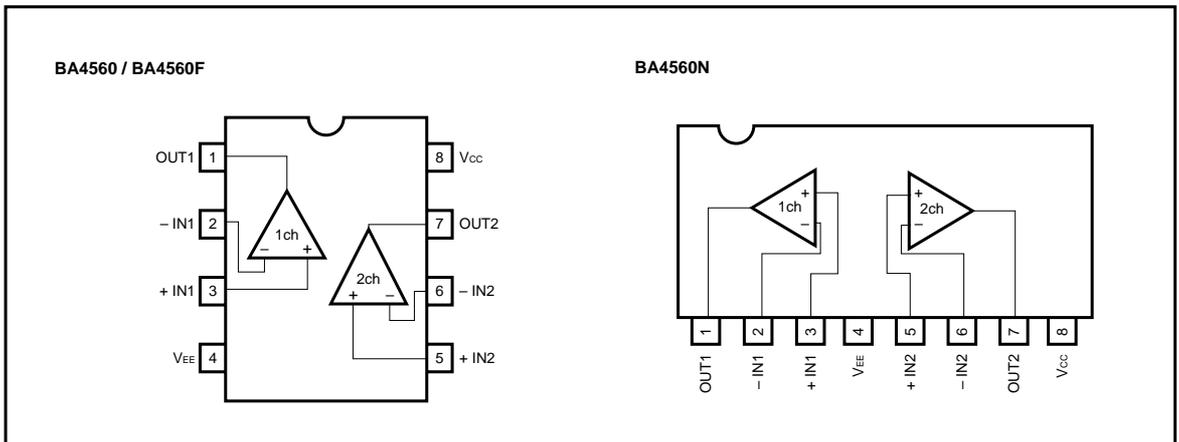
●Applications

- Active filters
- Audio amplifiers
- VCOs
- Other electronic circuits

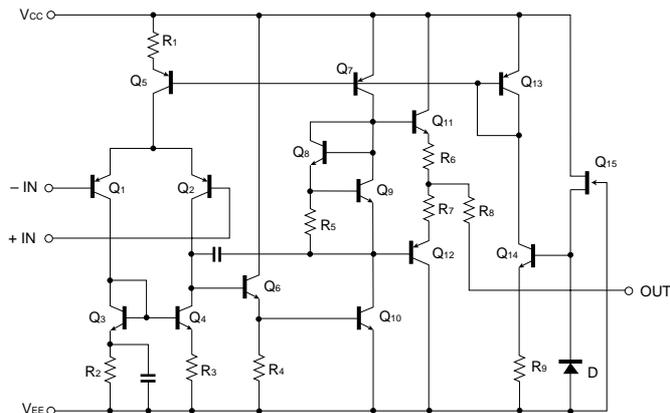
●Features

- 1) Built-in output short-circuit protection circuit.
- 2) Internal phase correction.
- 3) No latch-up.
- 4) Wide range of common-mode modes and differential voltage.
- 5) High gain and low noise.

●Block diagram



●Internal circuit configuration



●Absolute maximum ratings (Ta = 25°C)

Parameter	Symbol	Limits			Unit
		BA4560	BA4560F	BA4560N	
Power supply voltage	V _{CC}	± 18	± 18	± 18	V
Power dissipation	P _d	800*	550*	900*	mW
Differential input voltage	V _{ID}	± V _{CC}			V
Common-mode input voltage	V _I	- V _{CC} ~ V _{CC}			V
Operating temperature	T _{opr}	- 40 ~ + 85			°C
Storage temperature	T _{stg}	- 55 ~ + 125			°C

* Refer to the P_d characteristics diagram. The values for the BA4560F are those when it is mounted on a glass epoxy PCB (50mm × 50mm × 1.6mm).

●Electrical characteristics (unless otherwise noted, Ta = 25°C, V_{CC} = +15 V, V_{EE} = -15 V)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input offset voltage	V _{IO}	—	0.5	6.0	mV	R _S ≤ 10kΩ
Input offset current	I _{IO}	—	5	200	nA	
Input bias current	I _B	—	50	500	nA	
High-amplitude voltage gain	A _v	86	100	—	dB	R _L ≥ 2kΩ, V _o = ± 10V
Common-mode input voltage	V _{ICM}	± 12	± 14	—	V	
Maximum output voltage 1	V _{OM1}	± 12	± 14	—	V	R _L ≥ 10kΩ
Maximum output voltage 2	V _{OM2}	± 10	± 13	—	V	R _L ≥ 2kΩ
Common-mode rejection ratio	CMRR	70	90	—	dB	R _S ≤ 10kΩ
Power supply voltage rejection ratio	PSRR	—	30	150	μV / V	R _S ≤ 10kΩ
Slew rate	S. R.	—	4.0	—	V / μs	A _v = 1, R _L = 2kΩ
Input conversion noise voltage	V _n	—	—	2.2	μV	
Gain band width product	GBW	—	10	—	MHz	f = 10kHz