

# Dual high slew rate operational amplifier

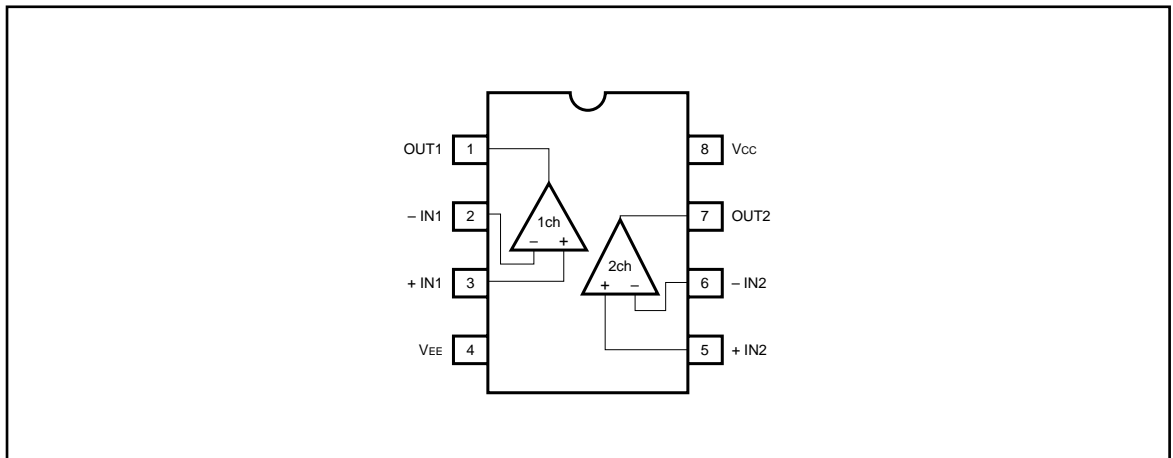
## BA4510F / BA4510FV

The BA4510F and BA4510FV are monolithic ICs that contain two operational amplifiers with high slew rate, featuring phase compensation. These ICs can be driven with a low-voltage power supply, requiring a power supply range of  $\pm 1$  to  $\pm 3.5V$  for a dual power supply and 2 to 7V for a single power supply. In addition, an unbuffered type is used which enables ample output even in low voltage ranges, enabling swing at up to nearly the power supply voltage.

### ●Features

- 1) Low-voltage operation.
- 2) High slew rate.
- 3) Wide dynamic output range.
- 4) Compact 8-pin SSOP-B package. (BA4510FV)

### ●Block diagram





●Electrical characteristics (unless otherwise noted, Ta = 25°C, Vcc = ±2.5V)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Conditions
Input offset voltage		V <sub>io</sub>	—	1	6	mV	R <sub>s</sub> = 50Ω
Input offset current		I <sub>io</sub>	—	2	200	nA	
Input bias current		I <sub>b</sub>	—	80	500	nA	*1
High-amplitude voltage gain		A <sub>v</sub>	60	90	—	dB	R <sub>L</sub> ≥ 2kΩ, V <sub>CC</sub> = 15V
Common-mode input voltage		V <sub>ICM</sub>	-1.3	—	1.5	V	
Common-mode rejection ratio		CMRR	60	80	—	dB	
Power supply voltage rejection ratio		PSRR	60	80	—	dB	R <sub>s</sub> = 50Ω
Quiescent current		I <sub>q</sub>	2.5	5.0	7.5	mA	R <sub>L</sub> = ∞ ALL AMPS
Output voltage	High	V <sub>OH</sub>	2.0	2.4	—	V	R <sub>L</sub> = 2kΩ
	Low	V <sub>OL</sub>	—	-2.4	-2.0	V	R <sub>L</sub> = 2kΩ
Slew rate		S.R.	—	5	—	V / μs	

\*1 Because the first stage is configured with a PNP transistor, input bias current is from the IC.

●Electrical characteristic curve

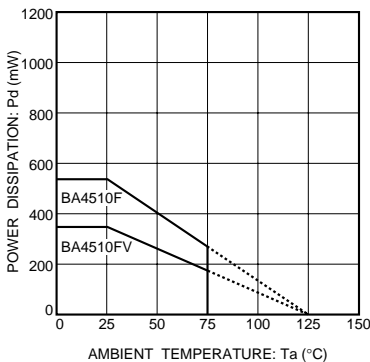


Fig. 1 Power dissipation vs. ambient temperature

●Operation notes

(1) Unused circuit connections

If there are any circuits which are not being used, we recommend making connections as shown in Figure 2, with the non-inverted input pin connected to the potential within the in-phase input voltage range (V<sub>ICM</sub>).

(2) If used with a voltage follower, be careful of oscillation which may cause problems with the in-line input voltage range or the capacitance load.

(3) If using at power supply voltage + 5.0 or higher, be sure the gain is reduced sufficiently to prevent oscillation.

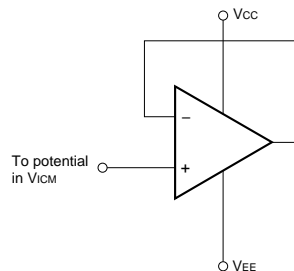


Fig. 2 Unused circuit connections

●External dimensions (Units: mm)

