

BA4510F

Dual, high slew rate, operational amplifiers

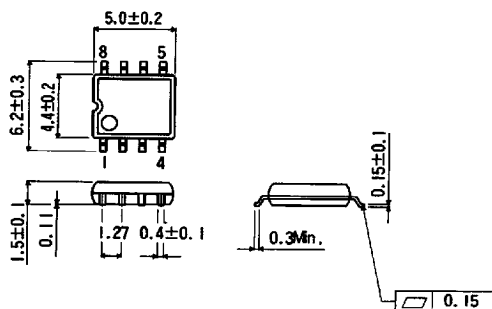
BA4510F is a monolithic IC that consists of two high slew-rate operational amplifiers.

Features

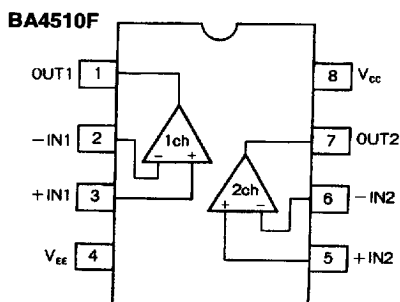
- available in SOP8 package
- wide power supply voltage range (single power supply, 2 V ~ 7 V; dual power supply, ± 1 V ~ ± 3.5 V)
- internal unbuffered amplifiers provide accurate output voltages even in low voltage ranges
- output amplitude at almost V_{CC} is obtainable
- high slew rate ($SR = 5$ V/ μ s)

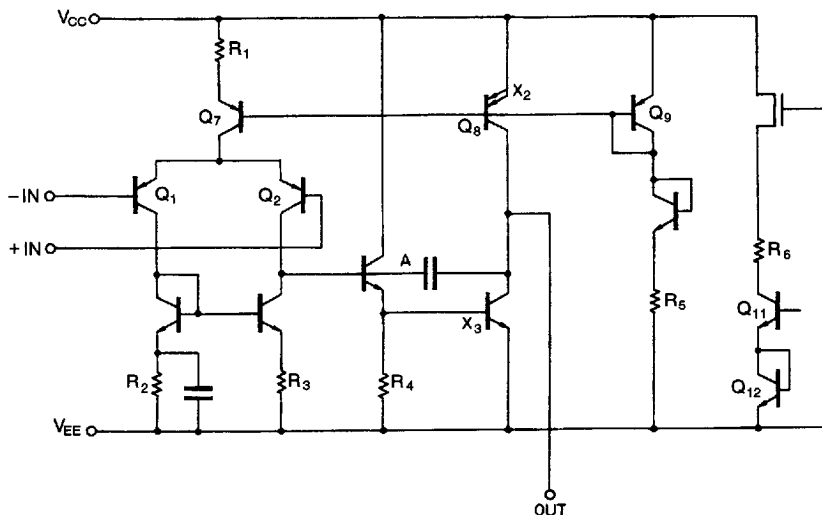
Dimensions (Units : mm)

BA4510F (SOP8)



Block diagram



Circuit diagram**Absolute maximum ratings ($T_a = 25^\circ\text{C}$)**

Parameter	Symbol	Limits	Unit	Conditions
Applied voltage	V_{CC}	± 5	V	
Power dissipation	P_d	550	mW	Reduce power by 5.5 mW/ $^\circ\text{C}$ for each degree above 25°C . Mounted on $50 \times 50 \times 1.6$ mm glass epoxy PCB.
Differential input	V_{ID}	$\pm V_{CC}$	V	
Common mode input voltage	V_I	$0 \sim V_{CC}$	V	
Operating temperature	T_{opr}	$-20 \sim +75$	$^\circ\text{C}$	
Storage temperature	T_{stg}	$-40 \sim +125$	$^\circ\text{C}$	

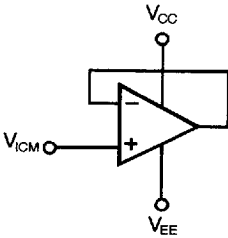
Electrical characteristics (unless otherwise noted, $T_a = 25^{\circ}\text{C}$, $V_{CC} = \pm 2.5$)

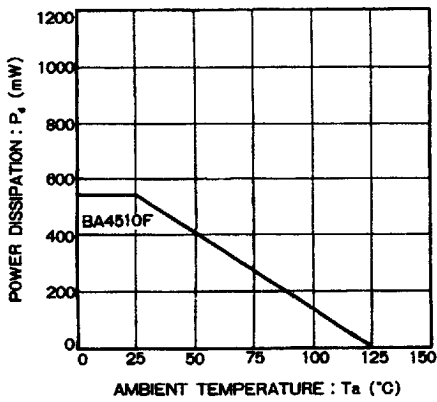
Parameter		Symbol	Min	Typical	Max	Unit	Conditions
Input offset voltage		V_{IO}		1	6	mV	$R_S = 50\ \Omega$
Input offset current		I_{IO}		2	200	nA	
Input bias current		I_B		80	500	nA	Input bias current is source current, because the first block is PNP transistor.
Large signal voltage gain		A_V	60	90		dB	$R_L \geq 2\ \text{k}\Omega$, $V_{CC} = 15\ \text{V}$
Input common mode voltage		V_{ICM}	-1.3		+1.5	V	
Common-mode rejection ratio		CMRR	60	80		dB	
Power supply rejection ratio		PSRR	60	80		dB	$R_S = 50\ \Omega$
Supply current		I_Q	2.5	5.0	7.5	mA	$R_L = \infty$ all amps
Output voltage	High	V_{OH}	2.0	2.4		V	$R_L = 2\ \text{k}\Omega$
	Low	V_{OL}		-2.4	-2.0	V	$R_L = 2\ \text{k}\Omega$
Slew rate		SR		5		V/ μs	

Note: When using BA4510F as a voltage follower, ensure that circuit does not oscillate due to common mode input voltage and capacitor load. Similarly, for supply voltages greater than $\pm 5\ \text{V}$, reduce the gain to prevent oscillation.

Precautions for use

If a circuit is not in use, connect the terminals as shown following:



Electrical characteristic curves**Figure 1**