

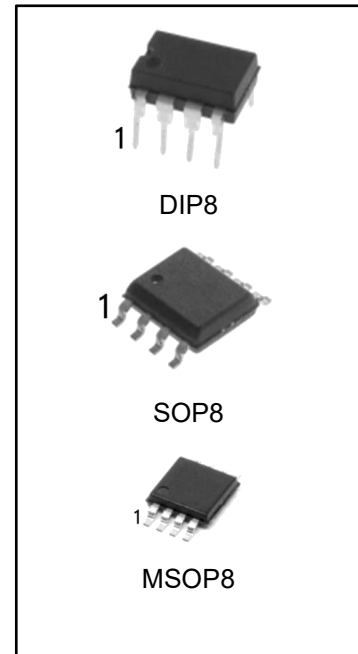
DUAL OPERATIONAL AMPLIFIER

GENERAL DESCRIPTION

The HG4560 integrated circuit is a high-gain, wide bandwidth, dual operational amplifier capable of driving 20 V peak-to-peak into 400 loads. The HG4560 combines many of the features of the HG4558 as well as providing the capability of wider bandwidth, and higher slew rate make the HG4560 ideal for active filters, data and telecommunications, and many instrumentation applications.

FEATURES

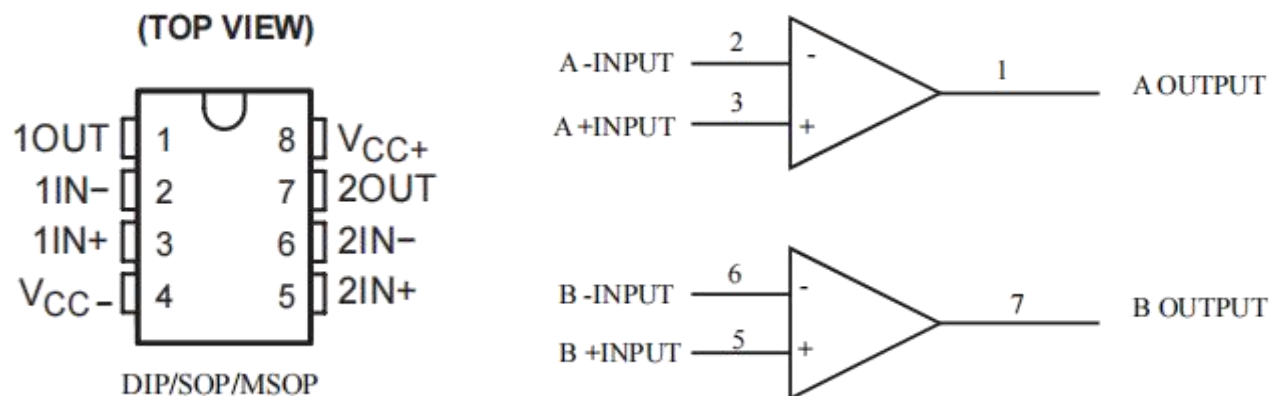
- Operating Voltage.....($\pm 4\text{ V} \sim \pm 18\text{ V}$)
- Wide Gain Bandwidth Product..... (10 MHz typ.)
- Slew Rate.....(4 V/s typ.)
- Bipolar Technology

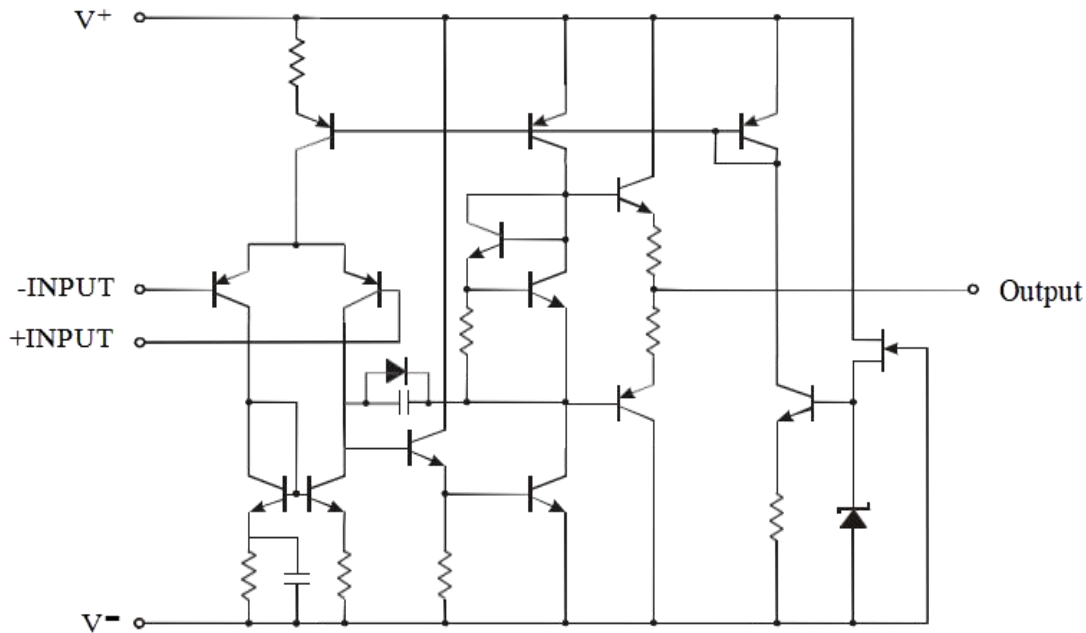


ORDERING INFORMATION

DEVICE	Package Type	MARKING	Packing	Packing Qty
HG4560N	DIP8L	HG4560	TUBE	2000pcs/box
HG4560M/TR	SOP8L	HG4560	REEL	2500pcs/reel
HG4560MM/TR	MSOP8L	HG4560	REEL	3000pcs/reel

BLOCK DIAGRAM



EQUIVALENT CIRCUIT (1/2 Show)

ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

Symbol	Parameter	Ratings	Unit
V ⁺ /V ⁻	Supply Voltage	18	V
V _{ID}	Differential Input Voltage	30	V
V _{IC}	Input Voltage	15*	V
Topr	Operation Temperature Range	-25~+75	°C
Tstg	Storage Temperature Range	-60~+125	°C

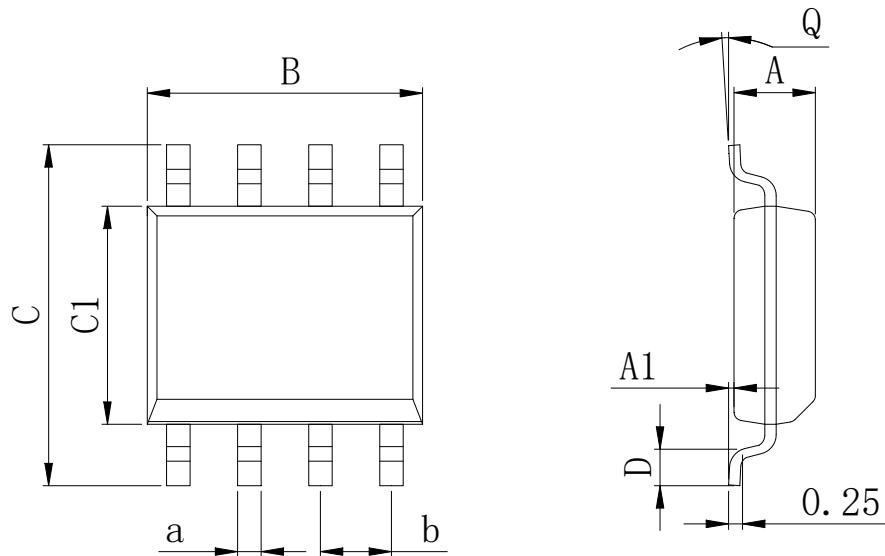
* For supply voltage less than 15 V, the absolute maximum input voltage is equal to the supply voltage.

ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Test Condition	Min	Max	Unit
V _{IO}	Input Offset Voltage	R _S ≤ 10 kΩ	-	6	mV
I _{IO}	Input Offset Current		-	200	nA
I _B	Input Bias Current		-	500	nA
R _{IN}	Input Resistance		0.3	-	MΩ
A _v	Large Signal Voltage Gain	R _L ≥ 2 kΩ, V _O = ±10 V	86	-	dB
V _{OM1}	Maximum Output Voltage Swing 1	R _L ≥ 2 kΩ	±12	-	V
V _{OM2}	Maximum Output Voltage Swing 2	I _o = 25 mA	±10	-	V
V _{ICM}	Input Common Mode Voltage Range		±12	-	V
CMR	Common Mode Rejection Ratio	R _S ≤ 10 kΩ	70	-	dB
SVR	Supply Voltage Rejection Ratio	R _S ≤ 10 kΩ	76.5	-	dB
I _{CC}	Operating Current		-	5.7	mA
SR	Slew Rate	R _L ≥ 2 kΩ	3	5	V/μs

PHYSICAL DIMENSIONS

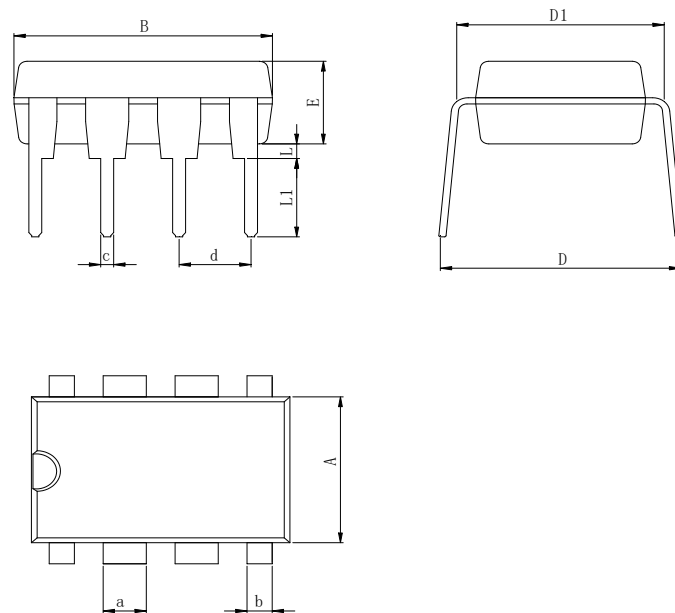
SOP8



Dimensions In Millimeters(SOP8)

Symbol:	A	A1	B	C	C1	D	Q	a	b
Min:	1.35	0.05	4.90	5.80	3.80	0.40	0°	0.35	1.27 BSC
Max:	1.55	0.20	5.10	6.20	4.00	0.80	8°	0.45	

DIP8

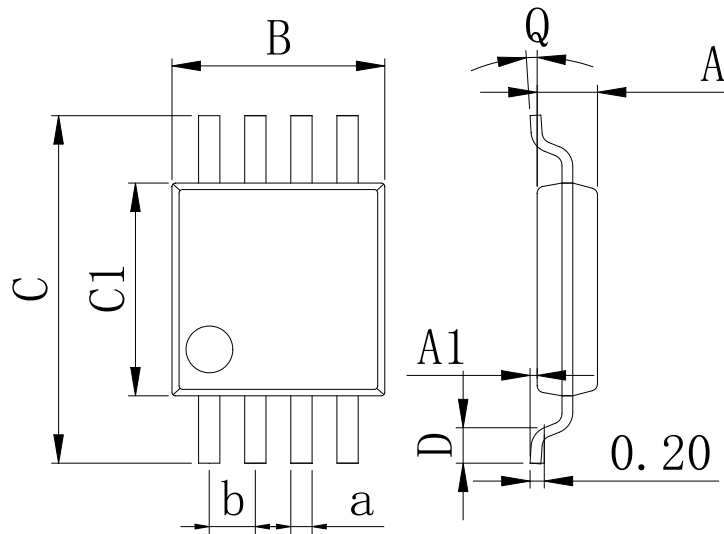


Dimensions In Millimeters(DIP8)

Symbol:	A	B	D	D1	E	L	L1	a	b	c	d
Min:	6.10	9.00	8.40	7.42	3.10	0.50	3.00	1.50	0.85	0.40	2.54 BSC
Max:	6.68	9.50	9.00	7.82	3.55	0.70	3.60	1.55	0.90	0.50	

PHYSICAL DIMENSIONS

MSOP8



Dimensions In Millimeters(MSOP8)

Symbol:	A	A1	B	C	C1	D	Q	a	b
Min:	0.80	0.05	2.90	4.75	2.90	0.35	0°	0.25	0.65 BSC
Max:	0.90	0.20	3.10	5.05	3.10	0.75	8°	0.35	

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