

Low Offset Single Operational Amplifier

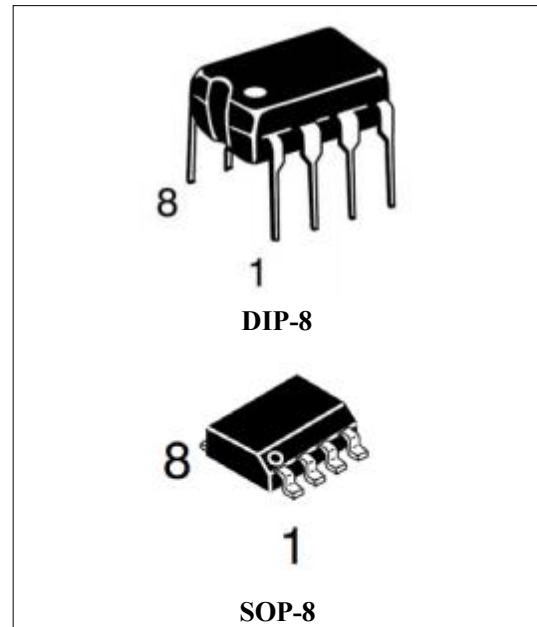
Overview

OP07C is a high precision operational amplifier, its maximum offset voltage is controlled at 150uV. Gain up to 200V/mV. Therefore, OP07C is especially suitable for use in instruments and so on.

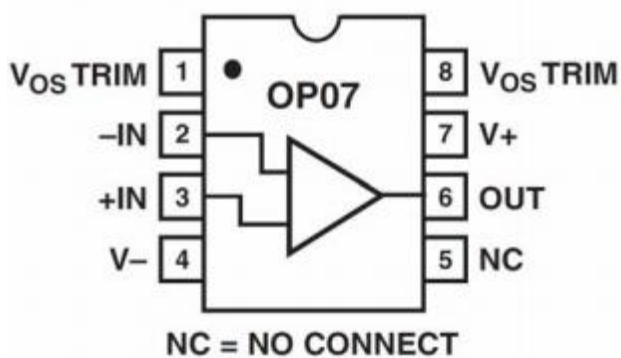
The OP07C has a wide input voltage range ($\pm 13V$), and a common mode rejection ratio (CMRR) of more than 100DB, which also maintains excellent linearity and gain accuracy in high closed-loop gain circuits.

Main feature

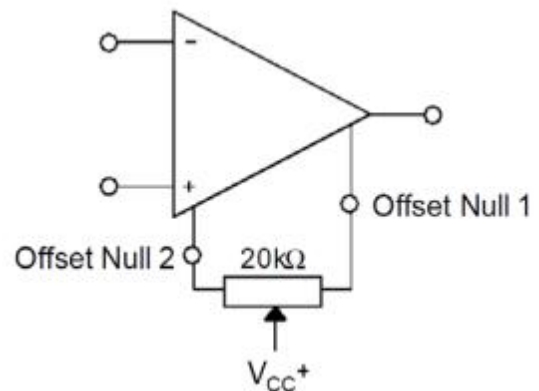
- Maximum offset voltage. 150uV MAX
- Low offset current $I_{io}=1.3nA$ typ
- Wide operating voltage range 3V to 20V



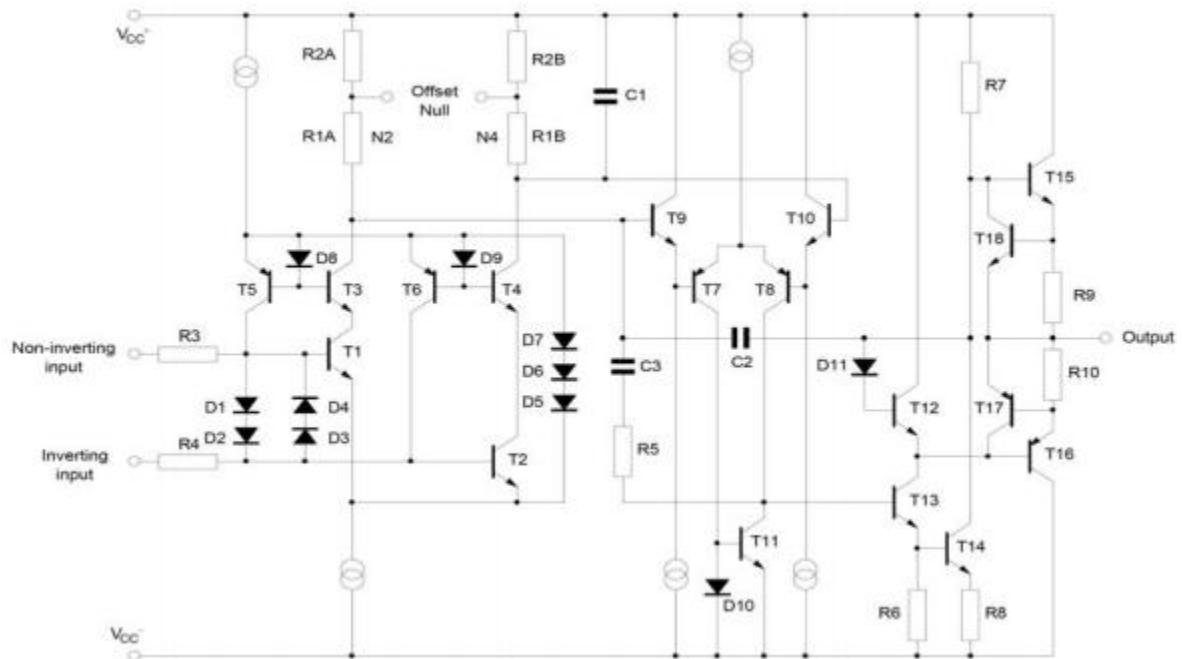
Pin information



Input offset nulling circuit



Block diagram



Limiting Parameters (Absolute Maximum Ratings, if not otherwise specified, Tamb=25°C)

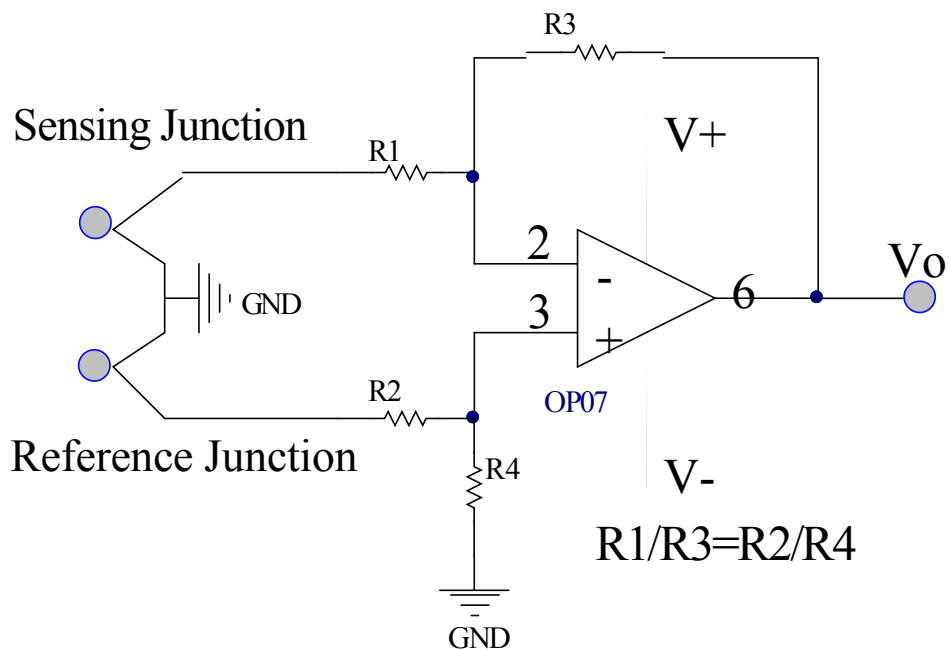
Parameter	Symbol	Value	Unit
voltage	V _{cc}	±20	V
Input voltage	V _i	±18	V
Input differential voltage	V _{id}	±30	V
Operating temperature	T _{OPR}	-10~+85	°C
Storage temperature	T _{STG}	-40~+150	°C

Electrical Characteristics (V_{cc}= ±15V, T_{amp}=25°C, special cases are specified separately)

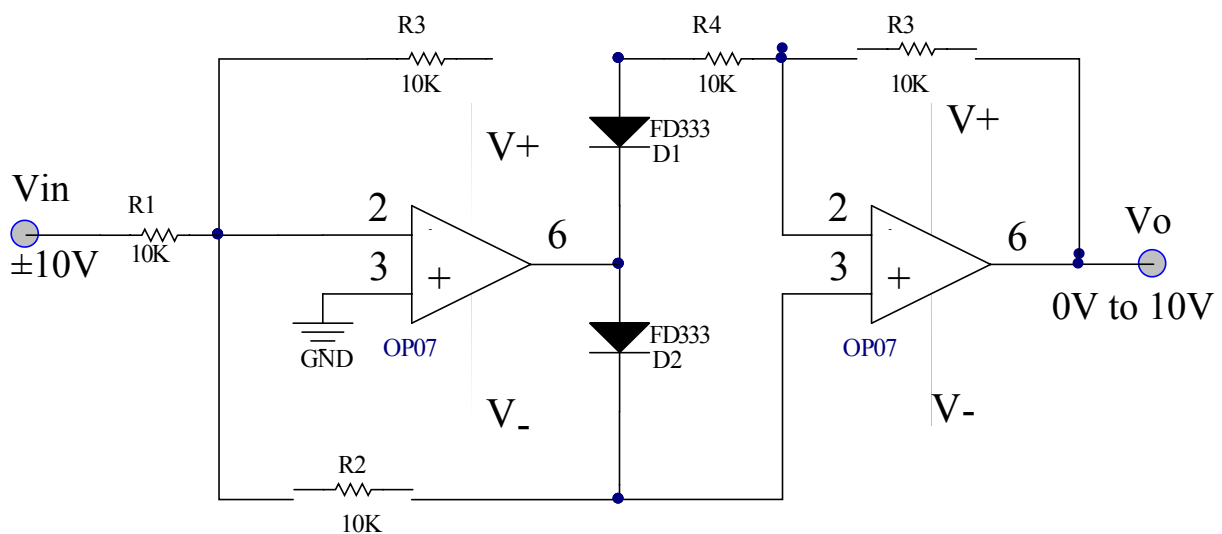
Symbol	Description	Value			Unit
		Min Value	Typical value	Max Value	
V _{io}	Offset voltage			150	uV
				250	uV
DV _{io}	0°C < T _{amb} < 70°C			1.8	uV/°C
I _{io}	Offset Temperature Drift			8	nA
I _{ib}	Input offset current			28	nA
V _{icm}	Input bias current	±13	±13.5		V
		±13			
CMR	Input common mode voltage	100			dB
SVR	0°C < T _{amb} < 70°C	90			dB
Avd	Common Mode Rejection Ratio	100			V/mV

V _{opp}	Output peak R _L = 10kΩ R _L = 2kΩ	±12 ±11.5			V
GBP	Gain bandwidth R _L = 2kΩ, C _L = 100pF, f = 100KHz)		0.5		MHz
ICC	Supply current (no load) 0°C < T _{amb} < 70°C V _{CC} = ±3V		3.8 1	6 3	mA

Typical application diagram

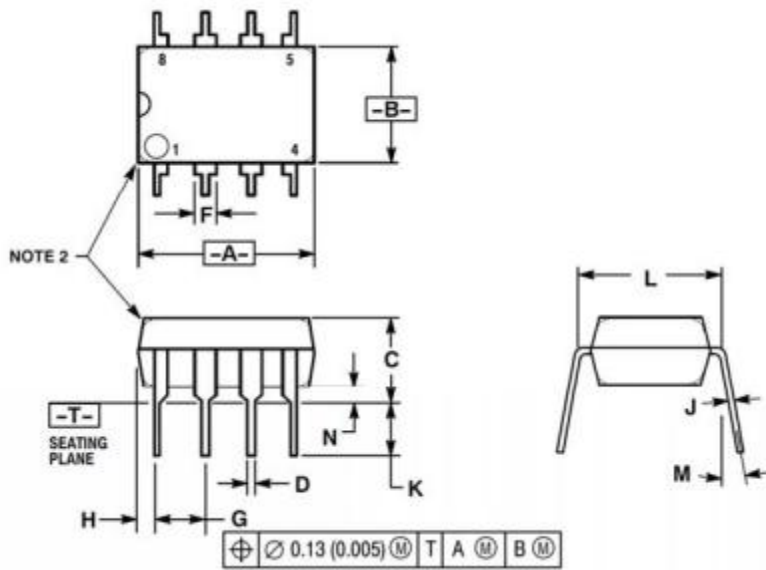


High Stability Thermo couple Amplification



Precision absolute value circuit

Package information

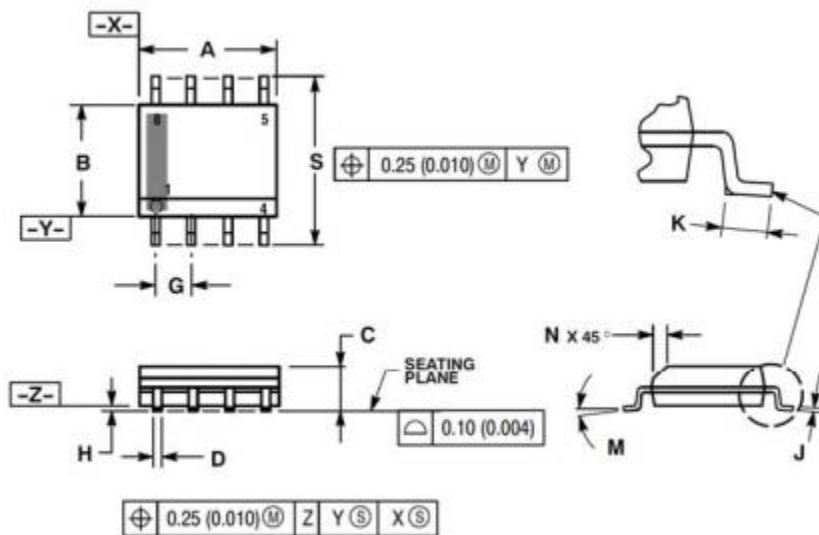


DIP8

NOTES:

1. DIMENSION L TO CENTER OF LEAD WHEN FORMED PARALLEL.
2. PACKAGE CONTOUR OPTIONAL (ROUND OR SQUARE CORNERS).
3. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	9.40	10.16	0.370	0.400
B	6.10	6.60	0.240	0.260
C	3.94	4.45	0.155	0.175
D	0.38	0.51	0.015	0.020
F	1.02	1.78	0.040	0.070
G	2.54 BSC		0.100 BSC	
H	0.76	1.27	0.030	0.050
J	0.20	0.30	0.008	0.012
K	2.92	3.43	0.115	0.135
L	7.62 BSC		0.300 BSC	
M	--- 10°		--- 10°	
N	0.76	1.01	0.030	0.040



SOP8

NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETER.
3. DIMENSION A AND B DO NOT INCLUDE MOLD PROTRUSION.
4. MAXIMUM MOLD PROTRUSION 0.15 (0.006) PER SIDE.
5. DIMENSION D DOES NOT INCLUDE DAMBAR PROTRUSION. ALLOWABLE DAMBAR PROTRUSION SHALL BE 0.127 (0.005) TOTAL IN EXCESS OF THE D DIMENSION AT MAXIMUM MATERIAL CONDITION.
6. 751-01 THRU 751-06 ARE OBSOLETE. NEW STANDARD IS 751-07.

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	4.80	5.00	0.189	0.197
B	3.80	4.00	0.150	0.157
C	1.95	1.75	0.050	0.069
D	0.33	0.51	0.013	0.020
G	1.27 BSC		0.050 BSC	
H	0.10	0.25	0.004	0.010
J	0.19	0.25	0.007	0.010
K	0.40	1.27	0.016	0.050
M	0° 8°		0° 8°	
N	0.25	0.50	0.010	0.020
S	5.80	6.20	0.228	0.244