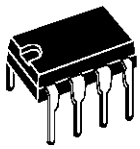
SGS-THOMSON MICROELECTRONICS

OP07C

VERY LOW OFFSET SINGLE BIPOLAR OPERATIONAL AMPLIFIERS

- EXTREMELY LOW OFFSET : 150µV MAX
- LOW INPUT BIAS CURRENT : 1.8nA
- LOW V_{io} DRIFT : 0.5µV/°C
- ULTRA STABLE WITH TIME : 2µV/month max.
- WIDE SUPPLY VOLTAGE RANGE : ± 3V to ± 22V



N
DIP8
(Plastic Package)

DESCRIPTION

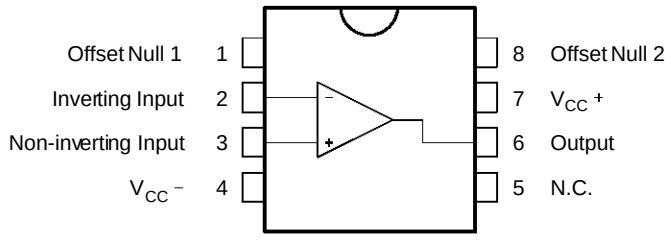
The OP07C is a very high precision op amp with an offset voltage maximum of 150µV.

Offering also low input current (1.8nA) and high gain (400V/mV), the OP07C is particularly suitable for instrumentation applications.

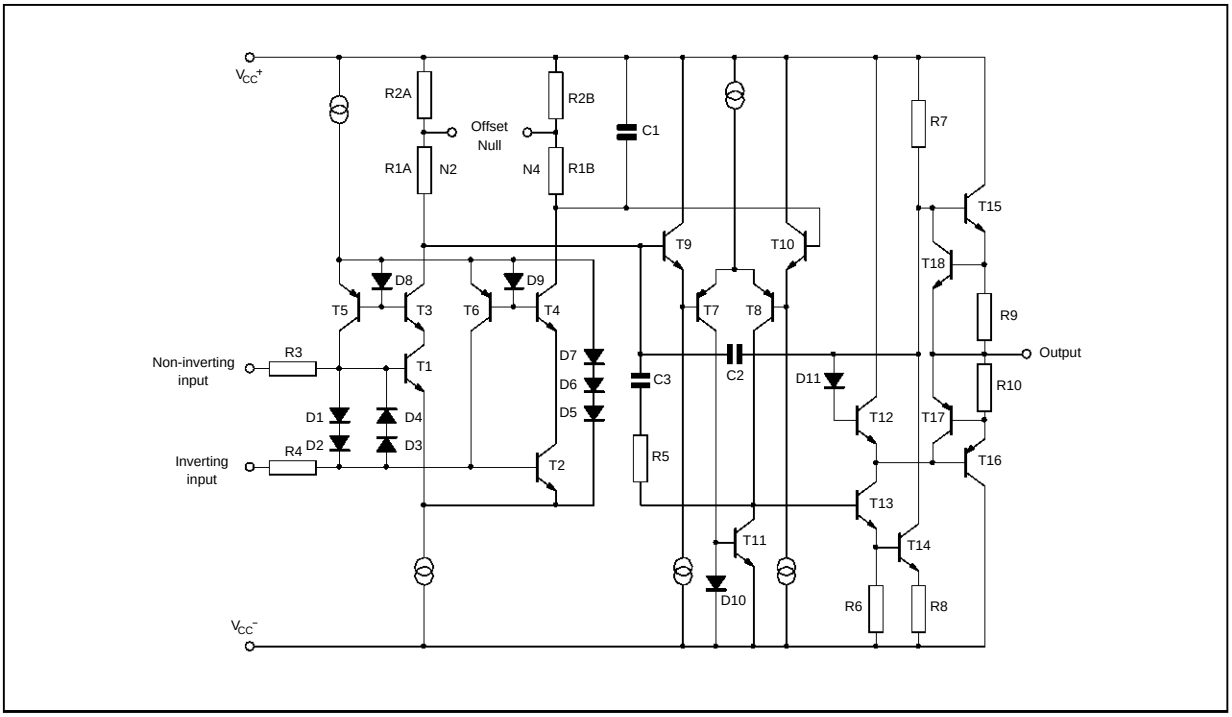
ORDER CODES

Part Number	Temperature Range	Package
		N
OP07C	-40°C, +105°C	•

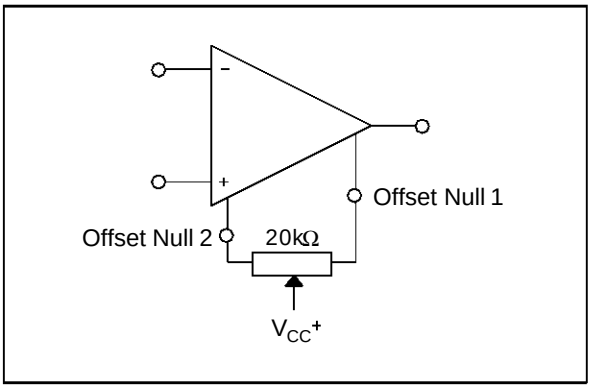
PIN CONNECTIONS (top view)



SCHEMATIC DIAGRAM



INPUT OFFSET VOLTAGE NULLING CIRCUIT



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CC}	Supply Voltage	±22	V
V_{id}	Differential Input Voltage	±30	V
V_i	Input Voltage	±22	V
T_{oper}	Operating Temperature	-40 to +105	^oC
T_{stg}	Storage Temperature	-65 to +150	^oC

ELECTRICAL CHARACTERISTICS

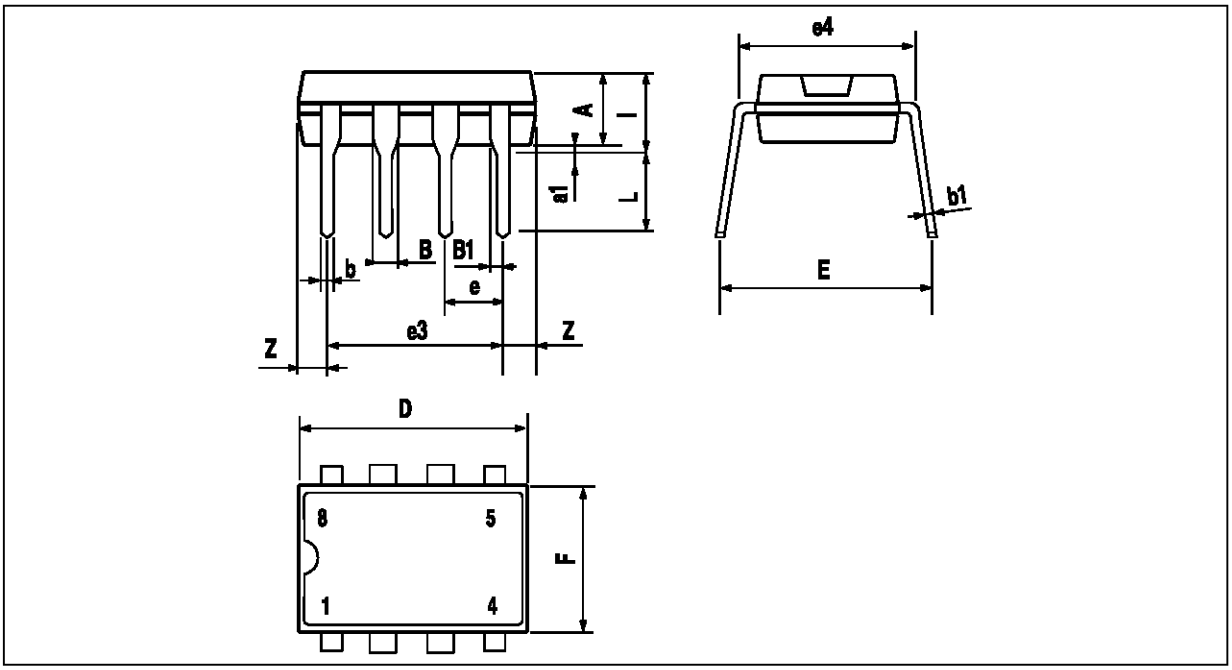
V_{CC} = ±15V, T_{amb} = +25°C (unless otherwise specified)

Symbol	Parameter	Min.	Typ.	Max.	Unit
V_{io}	Input Offset Voltage 0°C ≤ T_{amb} ≤ +70°C		60	150 250	µV
	Long Term Input Offset Voltage Stability - (note 1)		0.4	2	µV/Mo
DV_{io}	Input Offset Voltage Drift		0.5	1.8	µV/°C
I_{io}	Input Offset Current 0°C ≤ T_{amb} ≤ +70°C		0.8	6 8	nA
DI_{io}	Input Offset Current Drift		15	50	pA/°C
I_{ib}	Input Bias Current 0°C ≤ T_{amb} ≤ +70°C		1.8	7 9	nA
DI_{ib}	Input Bias Current Drift		15	50	pA/°C
R_o	Open Loop Output Resistance		60		Ω
R_{id}	Differential Input Resistance		33		MΩ
R_{ic}	Common Mode Input Resistance		120		GΩ
V_{icm}	Input Common Mode Voltage Range 0°C ≤ T_{amb} ≤ +70°C	±13 ±13	±13.5		V
CMR	Common Mode Rejection Ratio (V_i = V_{icm} min) 0°C ≤ T_{amb} ≤ +70°C	100 97	120		dB
SVR	Supply Voltage Rejection Ratio (V_{CC} = ±3 to ±18V) 0°C ≤ T_{amb} ≤ +70°C	90 86	104		dB
A_{vd}	Large Signal Voltage Gain V_{CC} = ±15, R_L = 2kΩ, V_O = ±10V, 0°C ≤ T_{amb} ≤ +105°C V_{CC} = ±3V, R_L = 500Ω, V_O = ±0.5V	120 100 100	400 400		V/mV
V_{opp}	Output Voltage Swing R_L = 10kΩ R_L = 2kΩ R_L = 1kΩ 0°C ≤ T_{amb} ≤ +70°C R_L = 2kΩ	 ±12 ±11.5 ±11	 ±13 ±12.8 ±12 		V
SR	Slew Rate (R_L = 2kΩ, C_L = 100pF)		0.17		V/µS
GBP	Gain Bandwidth Product (R_L = 2kΩ, C_L = 100pF, f = 100kHz)		0.5		MHz
I_{CC}	Supply Current - (no load) 0°C ≤ T_{amb} ≤ +70°C V_{CC} = ±3V		2.7 0.67	5 6 1.3	mA
e_n	Equivalent Input Noise Voltage f = 10Hz f = 100Hz f = 1kHz		 11 10.5 10	 20 13.5 11.5	$\frac{nV}{\sqrt{Hz}}$
i_n	Equivalent Input Noise Current f = 10Hz f = 100Hz f = 1kHz		 0.3 0.2 0.1	 0.9 0.3 0.2	$\frac{pA}{\sqrt{Hz}}$

Note 1 : 1. Long Term Input Offset Voltage Stability refers to the average trend line of V_{io} vs time over extended periods after the first 30 days of operation.

PACKAGE MECHANICAL DATA

8 PINS - PLASTIC DIP



PM-DIP8.EPS

Dimensions	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A		3.32			0.131	
a1	0.51			0.020		
B	1.15		1.65	0.045		0.065
b	0.356		0.55	0.014		0.022
b1	0.204		0.304	0.008		0.012
D			10.92			0.430
E	7.95		9.75	0.313		0.384
e		2.54			0.100	
e3		7.62			0.300	
e4		7.62			0.300	
F			6.6			0260
i			5.08			0.200
L	3.18		3.81	0.125		0.150
Z			1.52			0.060

DIP8.TBL

ORDER CODE :