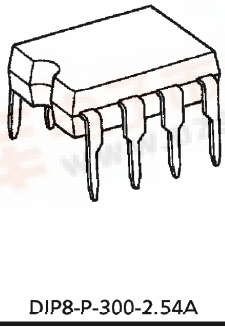
TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

TA75060P

SINGLE OPERATIONAL AMPLIFIER

The TA75060P is a J-FET input low-power operational amplifier with low input bias and offset current, fast slew rate. The TA75060P is pin compatible with the TA7506P. The TA75060P is an excellent choice for active filters, integrators, buffers and sample-and-hold circuits.



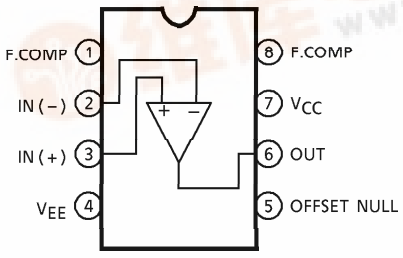
DIP8-P-300-2.54A

Weight : 0.5g (Typ.)

FEATURES

- Low Supply Current : 250μA MAX.
- Low Input Bias Current : 400pA MAX.
- Low Input Offset Current : 200pA MAX.
- High Slew Rate : 3.5V / μs (A_V = 1)
- Wide Supply Voltage Range : ±2~±18V
- Output Short Circuit Protection
- Offset Null Capability

PIN CONNECTION (TOP VIEW)



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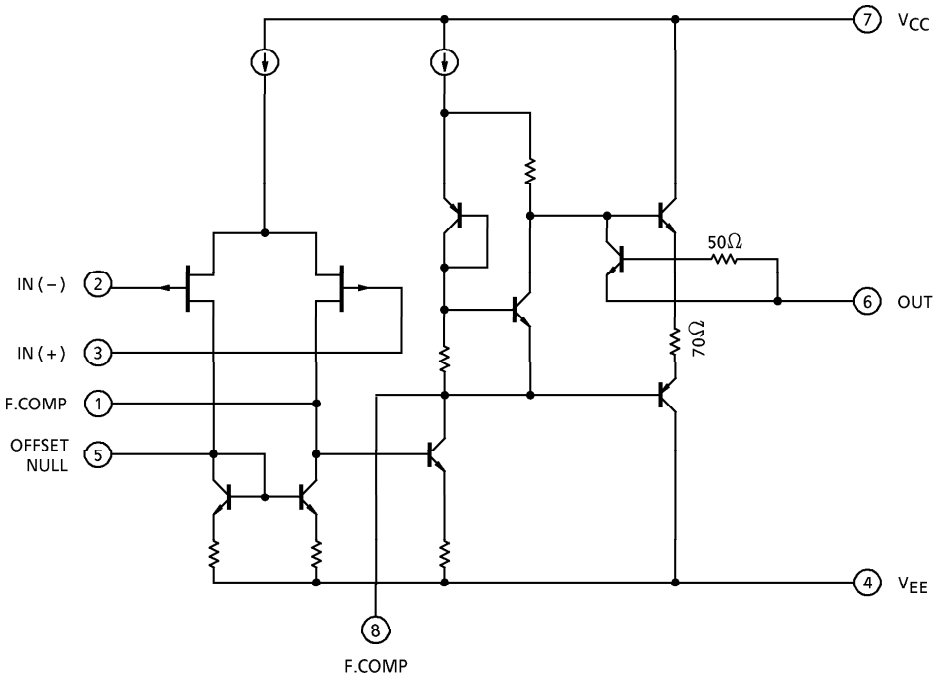
EQUIVALENT CIRCUIT



MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V_{CC}	18	V
	V_{EE}	− 18	V
Differential Input Voltage	DV_{IN}	± 30	V
Input Voltage	V_{IN}	± 15	V
Power Dissipation	P_D	500	mW
Operating Temperature	T_{opr}	− 40~85	°C
Storage Temperature	T_{stg}	− 55~125	°C

ELECTRICAL CHARACTERISTICS (V_{CC} = 15V, V_{EE} = − 15V, Ta = 25°C)

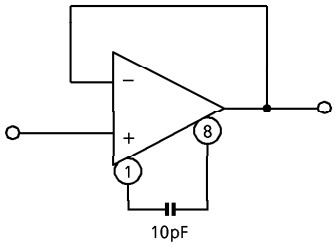
CHARACTERISTIC	SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	V_{IO}	—	$R_g \leqq 10k\Omega$	—	3	15	mV
TC Of Input Offset Voltage	TCV_{IO}	—	—	—	10	—	$\mu V/°C$
Input Offset Current	I_{IO}	—	—	—	5	200	pA
Input Bias Current	I_I	—	—	—	30	400	pA
Common Mode Input Voltage	CMV_{IN}	—	—	± 11.5	± 12	—	V
Maximum Output Voltage	V_{OM}	—	$R_L = 10k\Omega$	20	27	—	V_{p-p}
Voltage Gain (Open Loop)	G_V	—	V_{OUT} = ± 10V, $R_L = 10k\Omega$	3	6	—	V/mV
Unity Gain Cross Frequency	f_T	—	Open Loop, $R_L = 10k\Omega$	—	1	—	MHz
Input Resistance	R_{IN}	—	—	—	10^{12}	—	Ω
Common Mode Input Signal Rejection Ratio	CMRR	—	$R_g \leqq 10k\Omega$	70	76	—	dB
Supply Voltage Rejection Ratio	SVRR	—	$R_g \leqq 10k\Omega$	70	76	—	dB
Supply Current	I_{CC}, I_{EE}	—	Non load	—	200	250	μA

OPERATING CHARACTERISTICS (V_{CC} = 15V, V_{EE} = − 15V, Ta = 25°C)

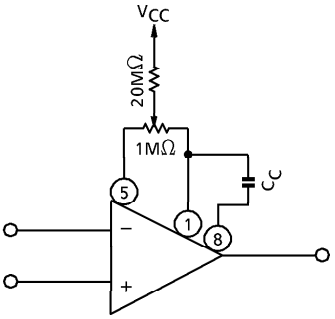
CHARACTERISTIC	SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Slew Rate	SR	—	$V_{IN} = 10V_{p-p}$, $R_L = 10k\Omega$, $C_L = 100pF$, $A_V = 1$	—	3.5	—	V/μs
Equivalent Input Noise Voltage	V_{NI}	—	$R_S = 100\Omega$, f = 1kHz	—	42	—	$nV/\sqrt{Hz}$

TYPICAL APPLICATION

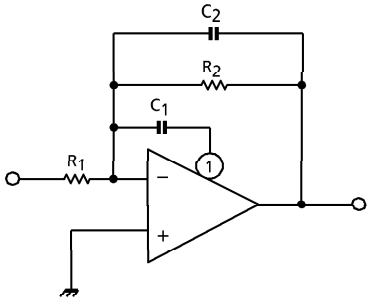
(1) UNITY-GAIN BUFFER



(2) OFFSET NULL CIRCUIT



(3) FEED FORWARD COMPENSATION

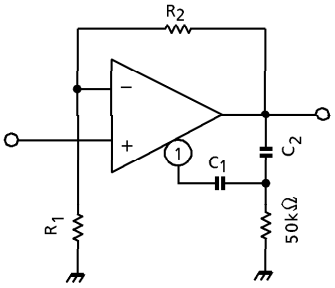


$C_1 = 500pF$

$C_2 = \dfrac{1}{2\pi f_o R_2}$

$f_o \simeq 1MHz$

(4) TOW POLE COMPENSATION



$C_1 > \dfrac{R_1}{R_1 + R_2} C_S$

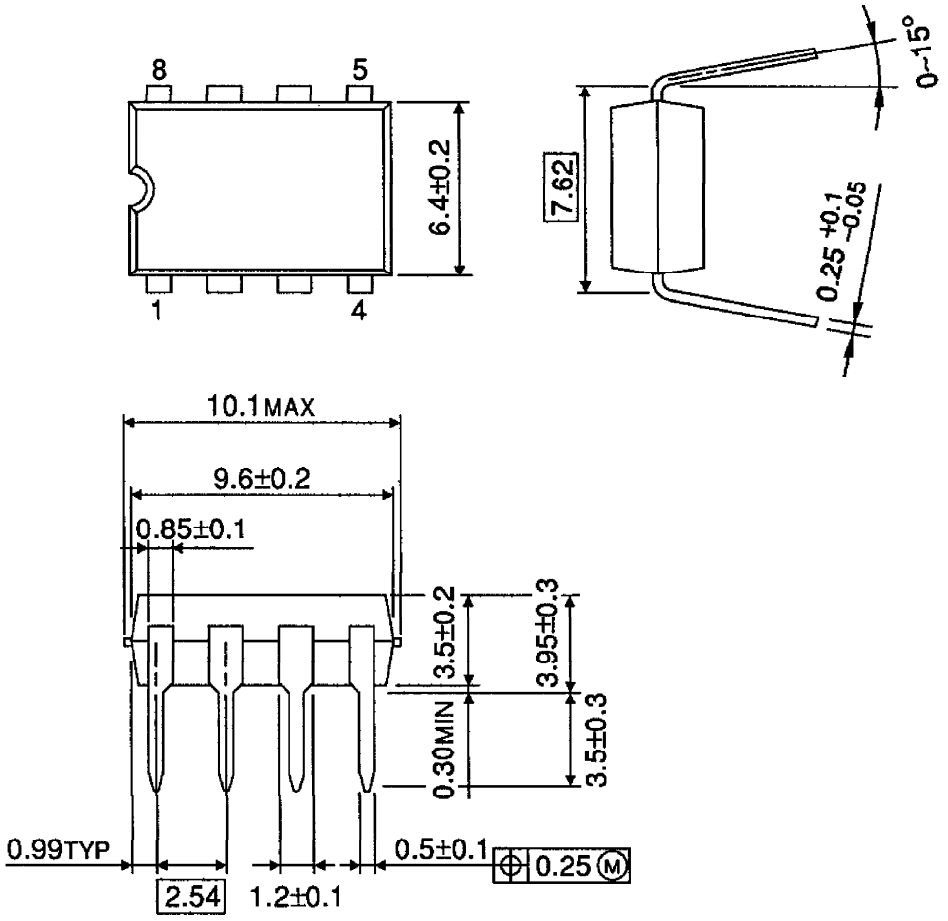
$C_S = 10pF$

$C_2 = 10C_1$

OUTLINE DRAWING

DIP8-P-300-2.54A

Unit : mm



Weight : 0.5g (Typ.)