

TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

**TA75071P, TA75071S****SINGLE OPERATIONAL AMPLIFIER**

The TA75071P and TA75071S are J-FET input low-noise operational amplifiers with low input bias and offset current, fast slew rate and wide bandwidth.

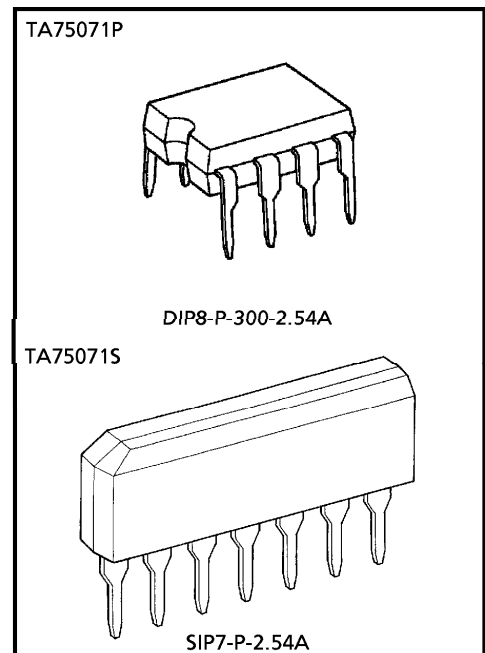
The TA75071P is pin compatible with the TA7504P and 741.

The TA75071S is single-in-line package.

The TA75071P series are excellent choice for active filters, integrators, buffers and sample-and-hold circuits.

**FEATURES**

- Low Input Bias Current : 200pA MAX.
- Low Input Offset Current : 50pA MAX.
- High Slew Rate : 13V /  $\mu$ s
- Low Noise : 18nV /  $\sqrt{\text{Hz}}$
- Wide Bandwidth : 3MHz
- Wide Supply Voltage Range :  $\pm 4 \sim \pm 18$ V
- Internal Frequency Compensation
- Output Short Circuit Protection
- Offset Null Capability



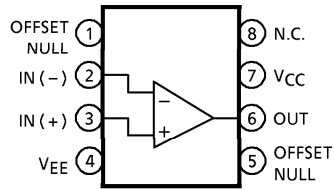
Weight  
 DIP8-P-300-2.54A : 0.5g (Typ.)  
 SIP7-P-2.54A : 0.7g (Typ.)

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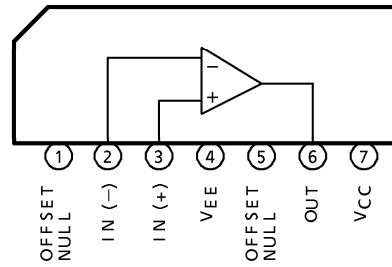
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**PIN CONNECTION (TOP VIEW)**

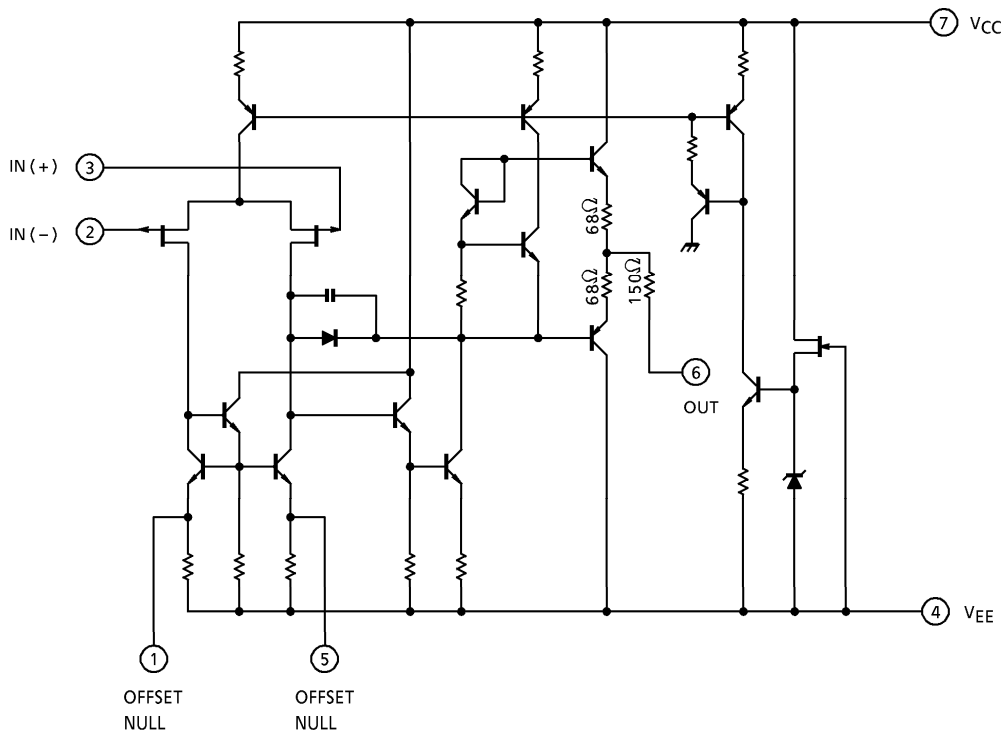
**TA75071P**



**TA75071S**



**EQUIVALENT CIRCUIT**



## MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V <sub>CC</sub>	+ 18	V
	V <sub>EE</sub>	- 18	
Supply Voltage Surge)	DV <sub>IN</sub>	± 30	V
Input Voltage	V <sub>IN</sub>	± 15	V
Power Dissipation	P <sub>D</sub>	500	mW
Operating Temperature	T <sub>opr</sub>	- 40~85	°C
Storage Temperature	T <sub>stg</sub>	- 50~125	°C

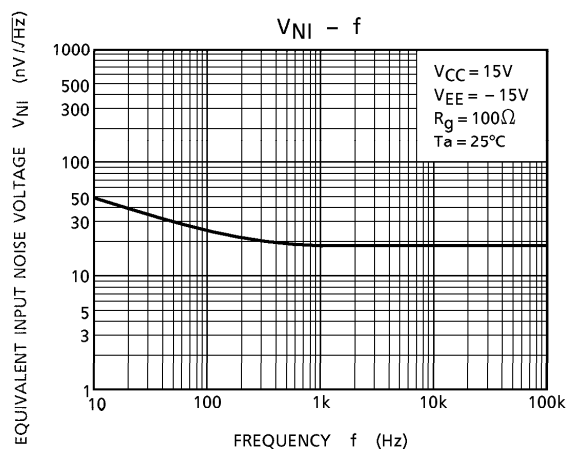
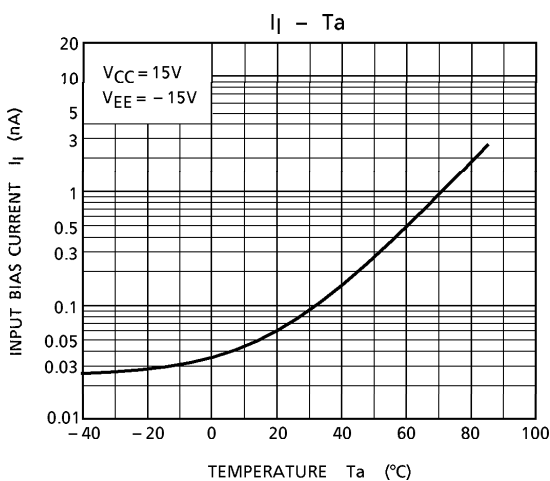
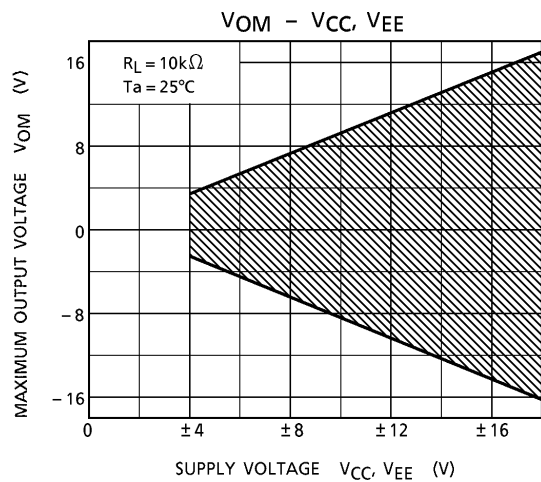
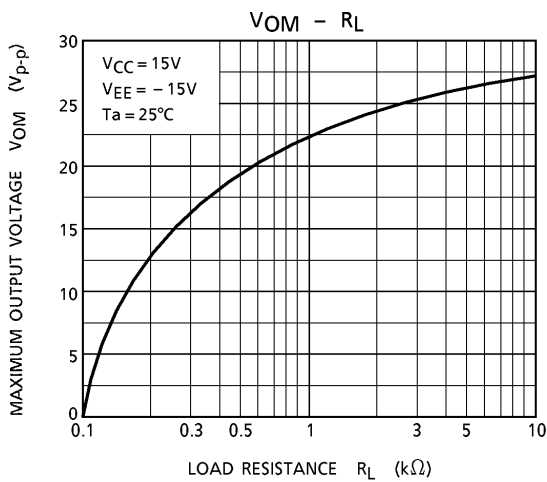
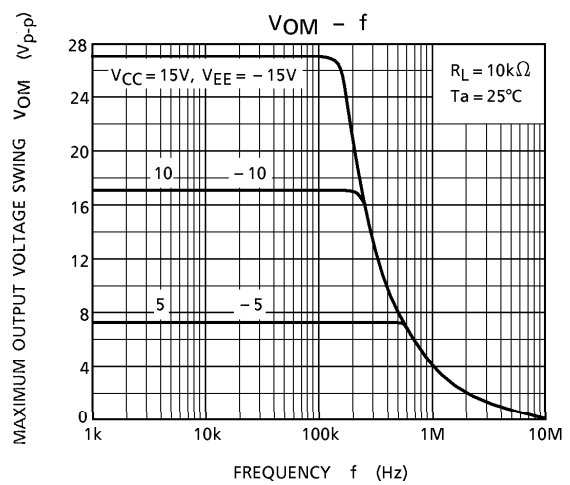
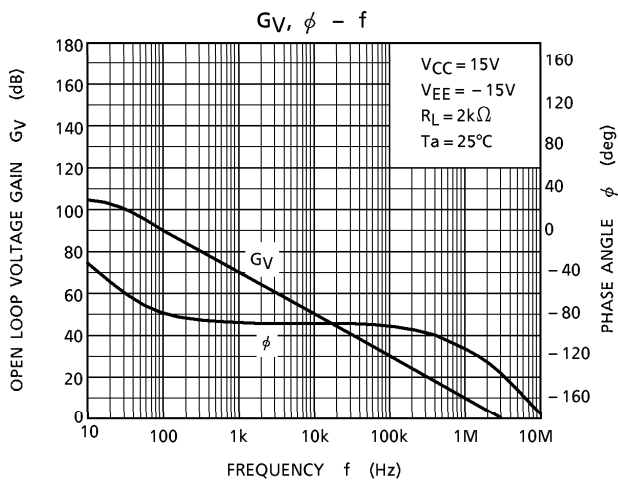
ELECTRICAL CHARACTERISTICS (V<sub>CC</sub> = 15V, V<sub>EE</sub> = - 15V, Ta = 25°C)

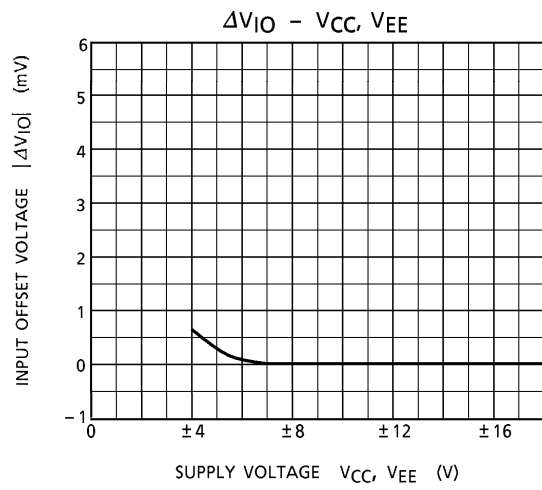
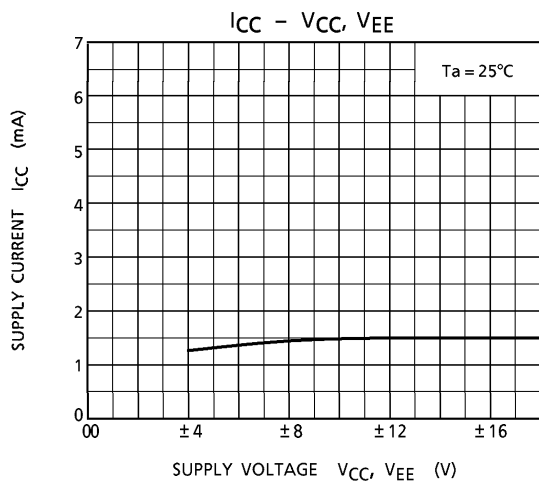
CHARACTERISTIC	SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	V <sub>IO</sub>	—	R <sub>g</sub> ≤ 10kΩ	—	3	10	mV
TC Of Input Offset Voltage	TCV <sub>IO</sub>	—	—	—	10	—	μV/°C
Input Offset Current	I <sub>IO</sub>	—	—	—	10	50	pA
Input Bias Current	I <sub>I</sub>	—	—	—	30	200	pA
Common Mode Input Voltage	CMV <sub>IN</sub>	—	—	± 11	± 12	—	V
Maximum Output Voltage	V <sub>OM</sub>	—	R <sub>L</sub> = 10kΩ	24	—	—	V <sub>p-p</sub>
	V <sub>OMR</sub>	—	R <sub>L</sub> = 2kΩ	20	24	—	
Voltage Gain (Open Loop)	G <sub>V</sub>	—	V <sub>OUT</sub> = ± 10V, R <sub>L</sub> = 2kΩ	25	200	—	V / mV
Unity Gain Cross Frequency	f <sub>T</sub>	—	Open Loop, R <sub>L</sub> = 10kΩ	—	3	—	MHz
Input Resistance	R <sub>IN</sub>	—	—	—	10 <sup>12</sup>	—	Ω
Common Mode Input Signal Rejection Ratio	CMRR	—	R <sub>g</sub> ≤ 10kΩ	70	76	—	dB
Supply Voltage Rejection Ratio	SVRR	—	R <sub>g</sub> ≤ 10kΩ	70	76	—	dB
Supply Current	I <sub>CC</sub> , I <sub>EE</sub>	—	Non Load	—	1.4	2.5	mA

OPERATING CHARACTERISTICS (V<sub>CC</sub> = 15V, V<sub>EE</sub> = - 15V, Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Slew Rate	SR	—	V <sub>IN</sub> = 10V <sub>p-p</sub> , R <sub>L</sub> = 2kΩ C <sub>L</sub> = 100pF	—	13	—	V / μs
Equivalent Input Noise Voltage	V <sub>NI</sub>	—	R <sub>S</sub> = 100Ω	f = 1kHz	—	18	nV / √Hz
				f = 10Hz~10kHz	—	4	μV <sub>rms</sub>
Equivalent Input Noise Current	I <sub>NI</sub>	—	R <sub>S</sub> = 100Ω, f = 1kHz	—	0.01	—	pA / √Hz
Total Harmonic Distortion	THD	—	V <sub>OUT</sub> = 10V <sub>rms</sub> , R <sub>S</sub> ≤ 1kΩ R <sub>L</sub> ≥ 2kΩ, f = 1kHz	—	0.01	—	%

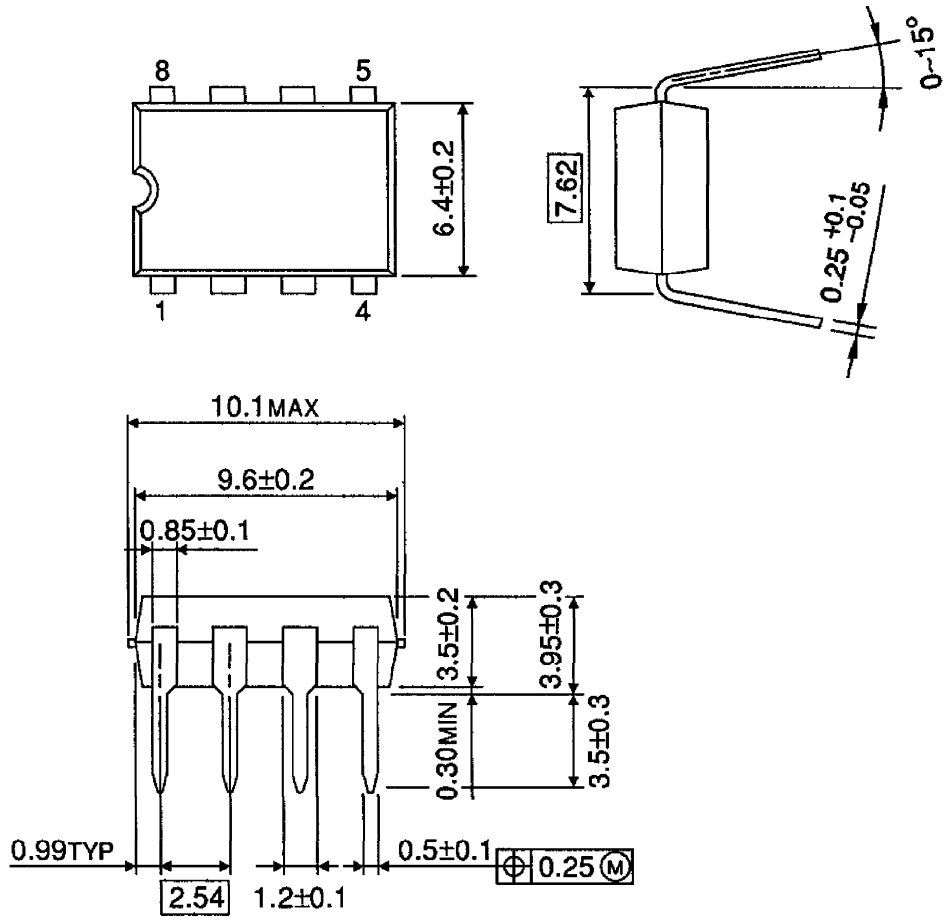
CHARACTERISTICS





OUTLINE DRAWING  
DIP8-P-300-2.54A

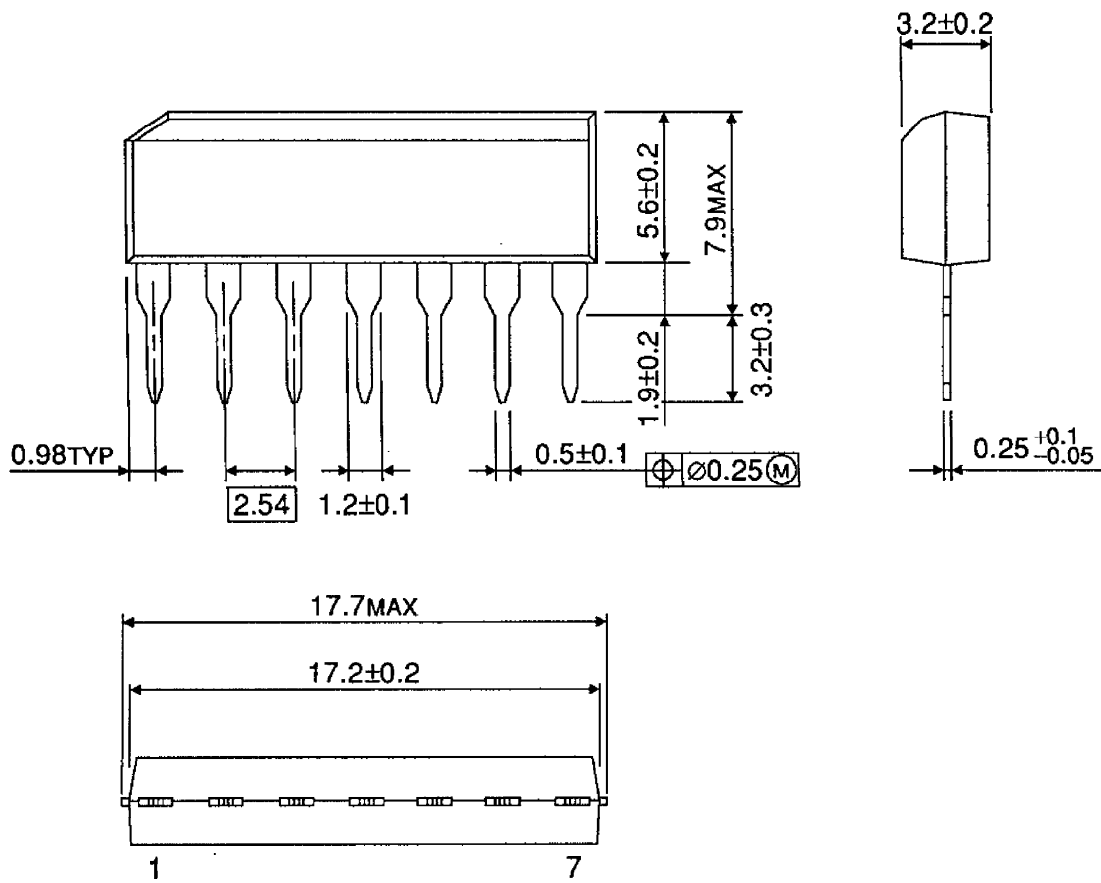
Unit : mm



Weight : 0.5g (Typ.)

OUTLINE DRAWING  
SIP7-P-2.54A

Unit : mm



Weight : 0.7g (Typ.)