

TOSHIBA

TA8406P/F

TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

TA8406P, TA8406F

DUAL POWER OPERATIONAL AMPLIFIER

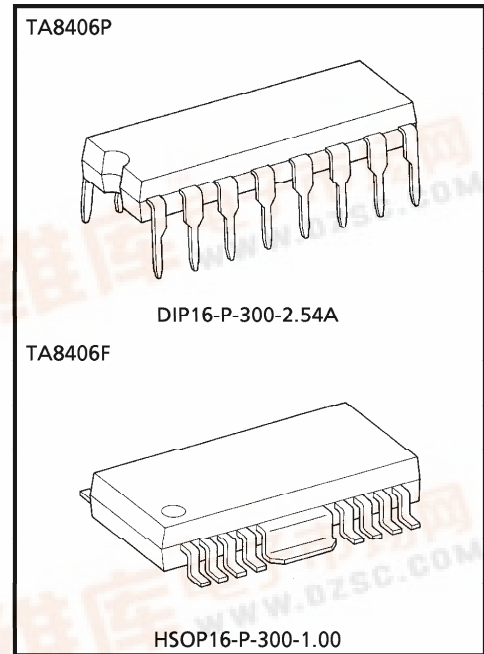
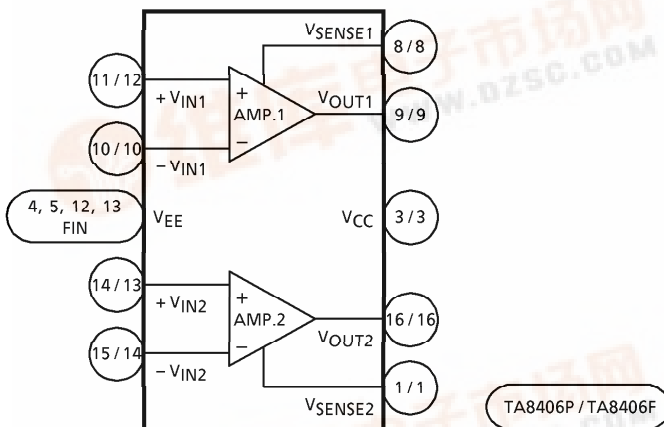
The TA8406P, TA8406F are dual power operational amplifier.

It is intended for use especially DC MOTOR positioning system applications such as Arm Driver (for Audiodisk Players), head or voice coil motor drivers (for Floppy and Winchester Disk Drivers) and any other power driver applications.

FEATURES

- Built-in over current protector
- Few external parts are required.
- Output current up to 500mA (AVE.) and 1.0A (PEAK)
- Excellent crosstalk characteristics

BLOCK DIAGRAM



Weight
 DIP16-P-300-2.54A : 1.11g (Typ.)
 HSOP16-P-300-1.00 : 0.50g (Typ.)

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PIN FUNCTION
TA8406P

PIN No.	SYMBOL	FUNCTION DESCRIPTION
1	VSENSE2	AMP.2 output current detection terminal
2	NC	No connection
3	VCC	Positive side voltage terminal
4	VEE	Negative side voltage terminal
5	VEE	Negative side voltage terminal
6	NC	No connection
7	NC	No connection
8	VSENSE1	AMP.1 output current detection terminal
9	VOUT1	AMP.1 output terminal
10	-VIN1	AMP.1 negative input terminal
11	+VIN1	AMP.1 positive input terminal
12	VEE	Negative side voltage terminal
13	VEE	Negative side voltage terminal
14	+VIN2	AMP.2 positive input terminal
15	-VIN2	AMP.2 negative input terminal
16	VOUT2	AMP.2 output terminal

TA8406F

PIN No.	SYMBOL	FUNCTION DESCRIPTION
1	VSENSE2	AMP.2 output current detection terminal
2	NC	No connection
3	VCC	Positive-side voltage terminal
4	NC	No connection
5	NC	No connection
6	NC	No connection
7	NC	No connection
8	VSENSE1	AMP.1 output current detection
9	VOUT1	AMP.1 output terminal
10	-VIN1	AMP.1 negative input terminal
11	NC	No connection
12	+VIN1	AMP.1 positive input terminal
13	+VIN2	AMP.2 positive input terminal
14	-VIN2	AMP.2 negative input terminal
15	NC	No connection
16	VOUT2	AMP.2 output terminal
FIN	VEE	Negative side voltage terminal

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Supply Voltage		V_{CC}, V_{EE}	± 18	V
Output Current		I_O (AVE.)	0.5	A
Power Dissipation	TA8406P	P_D	(Note 1) 1.4	W
			(Note 2) 2.7	
	TA8406P		(Note 3) 1.4	
Operating Temperature		T_{opr}	- 30~75	°C
Storage Temperature		T_{stg}	- 55~150	°C

(Note 1) No heat sink

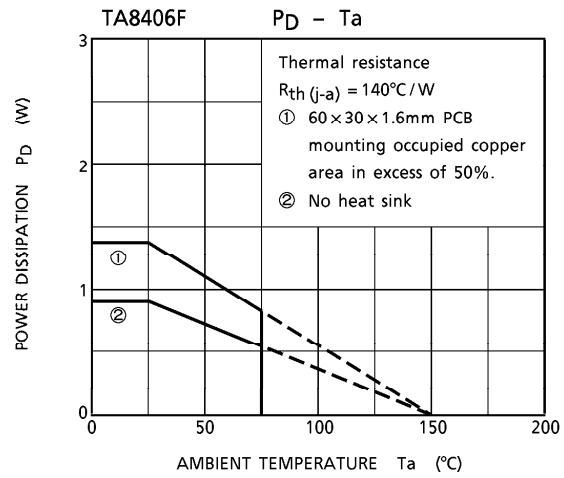
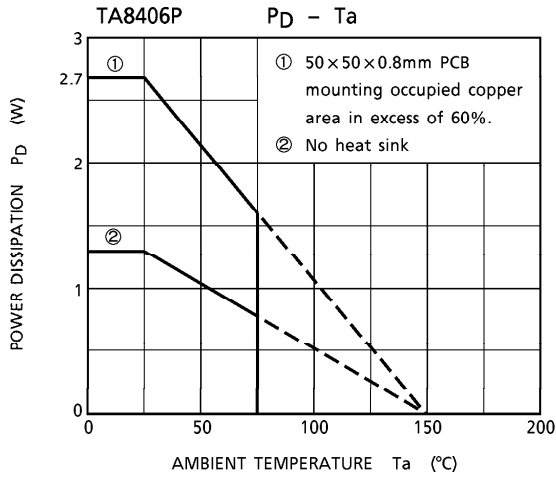
(Note 2) This value is obtained by 50×50×0.8mm PCB mounting occupied in excess of 60% of copper area.

(Note 3) This value is obtained by 60×30×1.6mm PCB mounting occupied in excess of 50% of copper area.

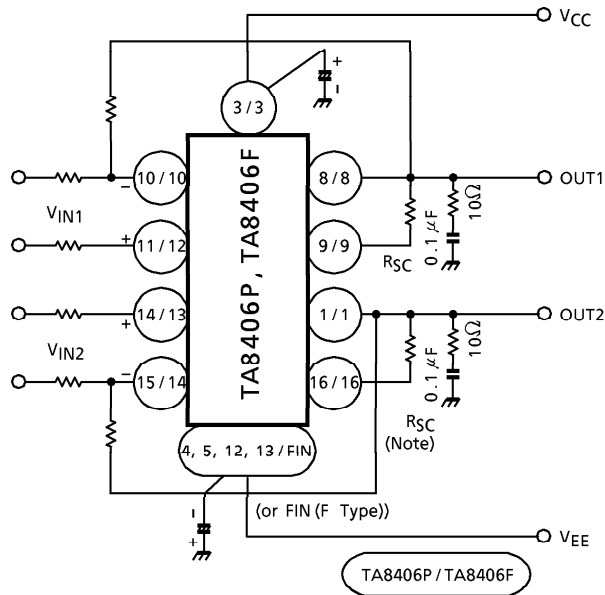
ELECTRICAL CHARACTERISTICS

(Unless otherwise specified, $V_{CC} = 15V, V_{EE} = -15V, T_a = 25^\circ C$)

CHARACTERISTIC	SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Quiescent Current	I_{CC}	—	—	—	10	20	mA
Input Off Set Current	I_{IO}	—	—	—	10	200	nA
Input Bias Current	I_I	—	—	—	100	700	nA
Input Off Set Voltage	V_{IO}	—	—	—	2	6	mV
Output Voltage Swing	Upper	—	$R_L = 33\Omega$	12	13.0	—	V
	Lower			V_{OH}	V_{OL}	- 12	
Open Loop Gain	G_{VO}	—	—	—	100	—	dB
Input Common Mode Voltage Range	CMR	—	—	± 12	± 14	—	
Common Mode Rejection Ratio	CMRR	—	—	70	90	—	dB
Supply Voltage Rejection Ratio	SVRR	—	—	—	50	150	$\mu V/V$
Band Width	f_T	—	Open loop	—	1.0	—	MHz
Slew Rate	SR	—	$G_V = 0, R_L = 33\Omega, R = 10\Omega, C = 0.1\mu F$	—	0.15	—	V / μs
Short Circuit Current	I_{SC}	—	$R_{SC} = 2.2\Omega$	—	0.35	—	A
Cross Talk	CT	—	$R_L = 33\Omega, V_{OUT} = 1V_{p-p}$	—	60	—	dB

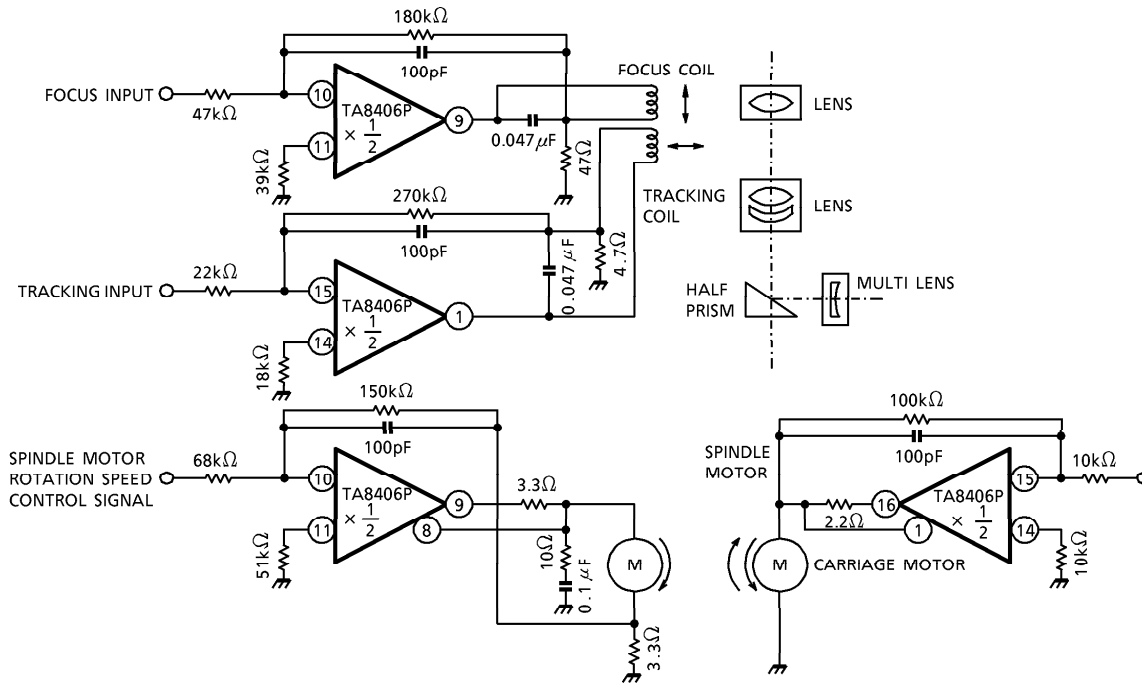


APPLICATION CIRCUIT 1



(Note) $I_{SC} \doteq \frac{0.77(V)}{R_{SC}(\Omega)} (A)$

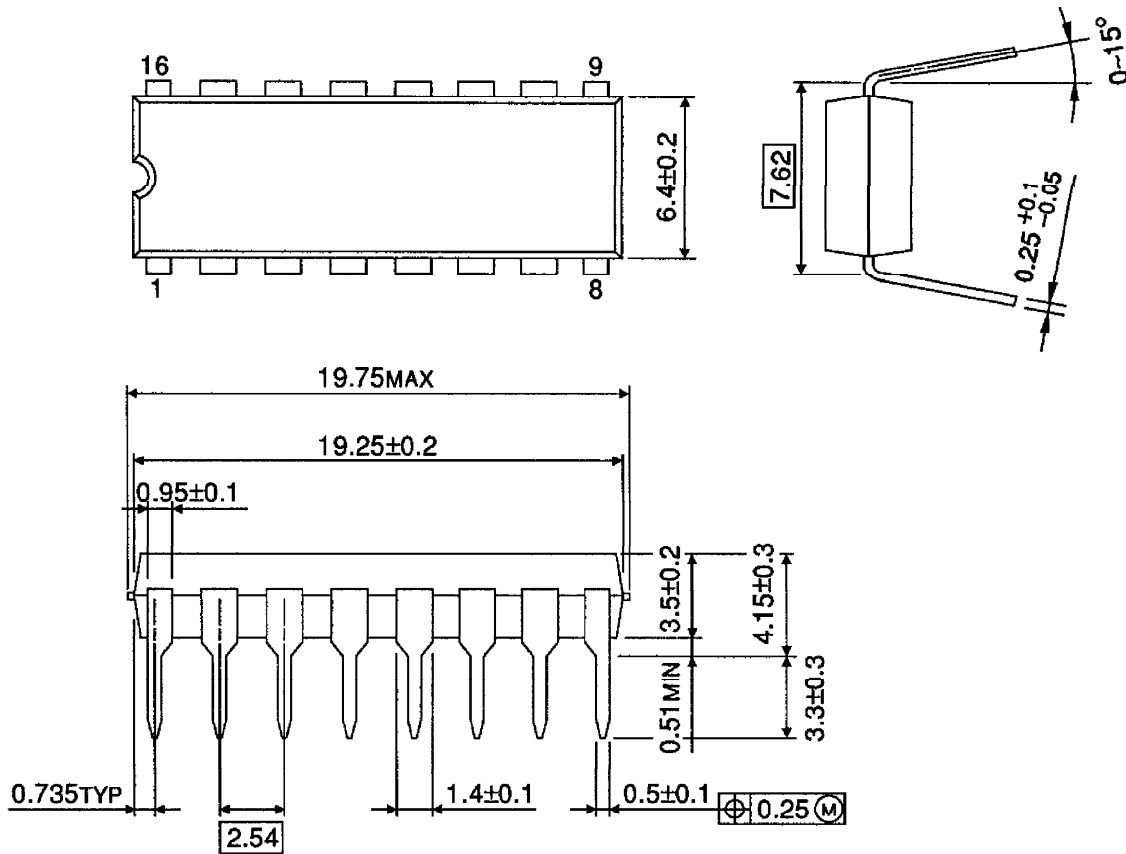
APPLICATION CIRCUIT 2 (Compact disk player motor system)



(Note) Utmost care is necessary in the design of the output line, V_{CC}, V_{EE} and GND line since IC may be destroyed due to short-circuit between outputs, air contamination fault, or fault by improper grounding.

OUTLINE DRAWING
DIP16-P-300-2.54A

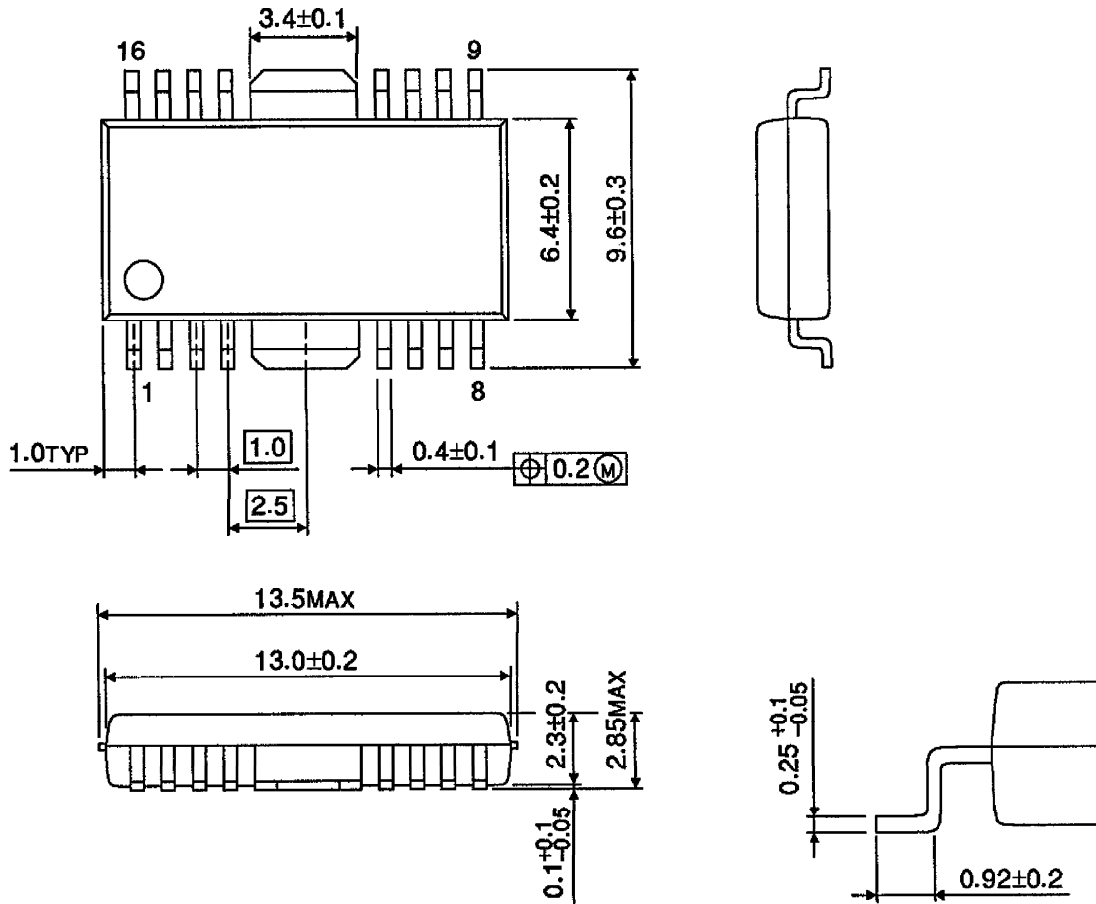
Unit : mm



Weight : 1.11g (Typ.)

OUTLINE DRAWING
HSOP16-P-300-1.00

Unit : mm



Weight : 0.50g (Typ.)