

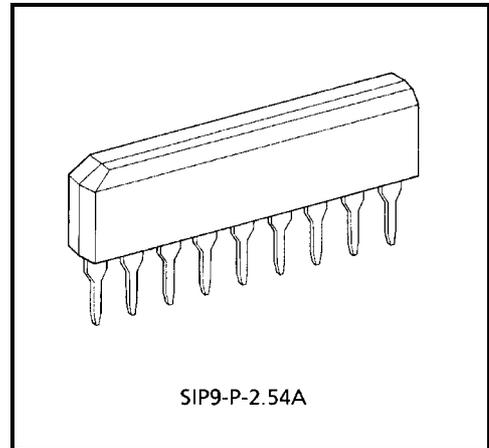
# TA8405S

## DUAL BRIDGE DRIVER

TA8405S is Dual Bridge Driver designed especially for VCR cassette and tape loading motor drives.

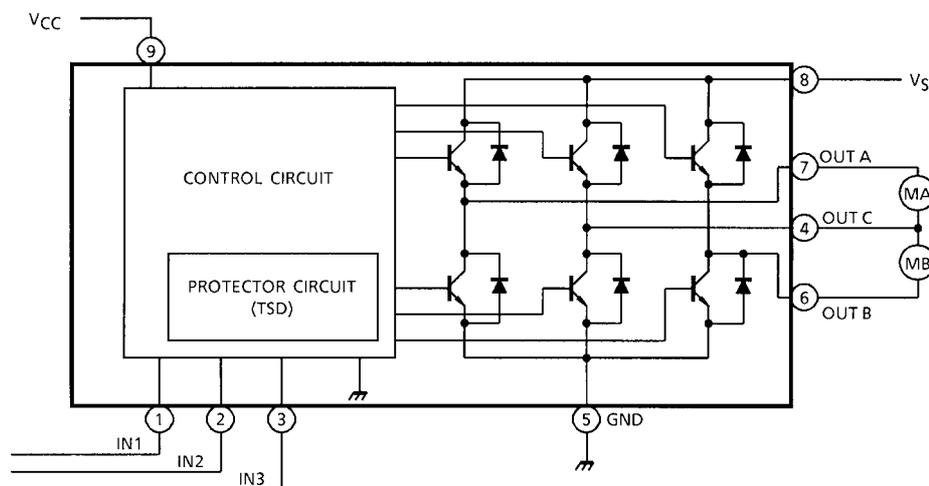
### FEATURES

- 4 modes available (CW / CCW / STOP / BRAKE)
- Output current up to 0.4 A (AVE.) and 1.0 A (PEAK)
- Wide range of operating voltage:  $V_{CC (opr)} = 4.5 \sim 22 \text{ V}$   
 $V_S (opr) = 0 \sim 22 \text{ V}$
- Built-in thermal shutdown, over current protector and Punch-through current restriction circuit.
- Hysteresis for all inputs.



Weight: 0.92 g (Typ.)

### BLOCK DIAGRAM





## MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Supply Voltage		V <sub>CC</sub>	25	V
Motor Drive Voltage		V <sub>S</sub>	25	V
Output Current	PEAK	I <sub>O</sub> (PEAK)	1.0 (Note 1)	A
	AVE.	I <sub>O</sub> (AVE.)	0.4	
Power Dissipation		P <sub>D</sub>	0.75 (Note 2)	W
Operating Temperature		T <sub>opr</sub>	-30~75	°C
Storage Temperature		T <sub>stg</sub>	-55~150	°C

Note 1: Duty 1 / 10, 100 ms

Note 2: No heat sink

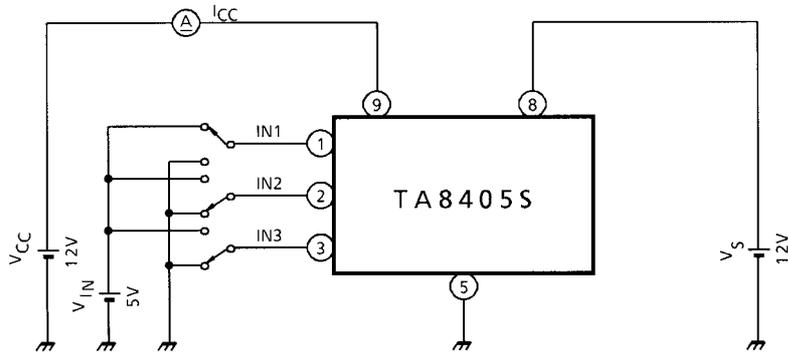
## ELECTRICAL CHARACTERISTICS

(Unless otherwise specified, Ta = 25°C, V<sub>CC</sub> = 12 V, V<sub>S</sub> = 12 V)

CHARACTERISTIC		SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN	TYP.	MAX	UNIT
Supply Current		I <sub>CC1</sub>	1	Output open, CW / CCW mode	—	7	15	mA
		I <sub>CC2</sub>	1	Output open, BRAKE mode	—	15	38	
		I <sub>CC3</sub>	1	Output open, STOP mode	—	7	15	
Input Operating Voltage	1 (High)	V <sub>IN1</sub>	2	—	3.5	—	5.5	V
	2 (Low)	V <sub>IN2</sub>	2	—	GND	—	1.2	
Input Current		I <sub>IN</sub>	2	V <sub>IN</sub> = GND, source mode	—	4	60	μA
Input Hysteresis Voltage		ΔV <sub>T</sub>	2	—	—	1.5	—	V
Output Saturation Voltage	Upper	V <sub>SAT U-1</sub>	3	I <sub>O</sub> = 0.4 A, V <sub>OUT</sub> -V <sub>S</sub> measure	—	1.0	1.4	V
	Lower	V <sub>SAT L-1</sub>	3	I <sub>O</sub> = 0.4 A V <sub>OUT</sub> -GND measure	—	0.8	1.2	
	Upper	V <sub>SAT U-2</sub>	3	V <sub>OUT</sub> -V <sub>S</sub> measure I <sub>O</sub> = 1.0 A, ON LOAD : 20 ms	—	1.3	2.3	
	Lower	V <sub>SAT L-2</sub>	3	V <sub>OUT</sub> -GND measure I <sub>O</sub> = 1.0 A, ON LOAD : 20 ms	—	1.0	1.5	
Output Transistor Leakage Current	Upper	I <sub>LU</sub>	5	V <sub>S</sub> = 25 V	—	—	50	μA
	Lower	I <sub>LL</sub>	5	V <sub>S</sub> = 25 V	—	—	50	
Diode Forward Voltage	Upper	V <sub>FU</sub>	4	I <sub>F</sub> = 1.0 A	—	2.1	—	V
	Lower	V <sub>FL</sub>	4	I <sub>F</sub> = 1.0 A	—	1.6	—	
Thermal Shut Down Operating Temperature		T <sub>SD</sub>	—	T <sub>j</sub>	—	130	—	°C

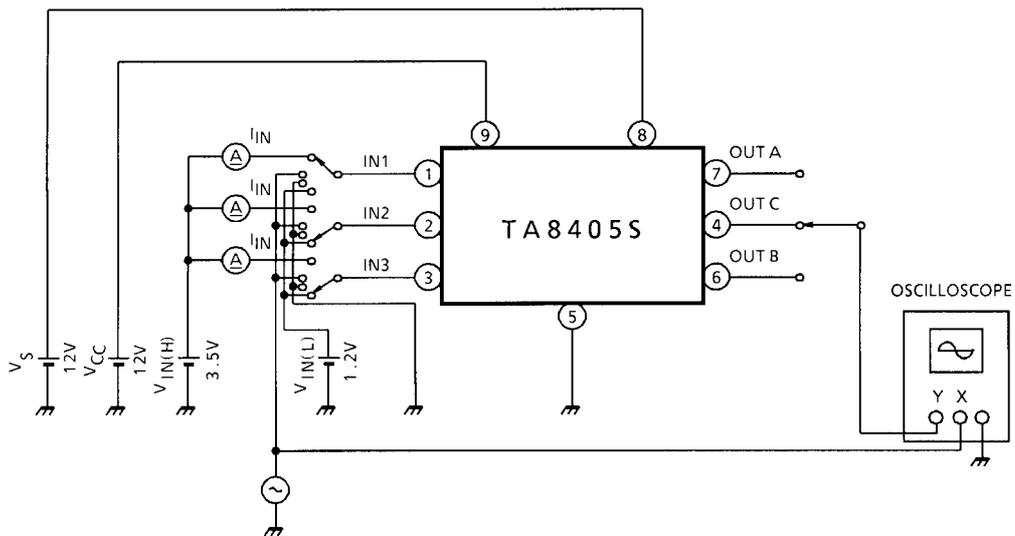
## TEST CIRCUIT 1

$I_{CC1, 2, 3}$



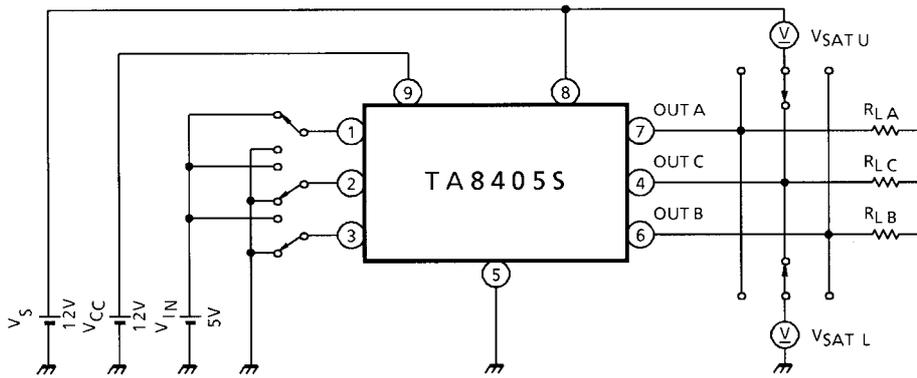
## TEST CIRCUIT 2

$V_{IN1, 2}, I_{IN}, \Delta V_T$



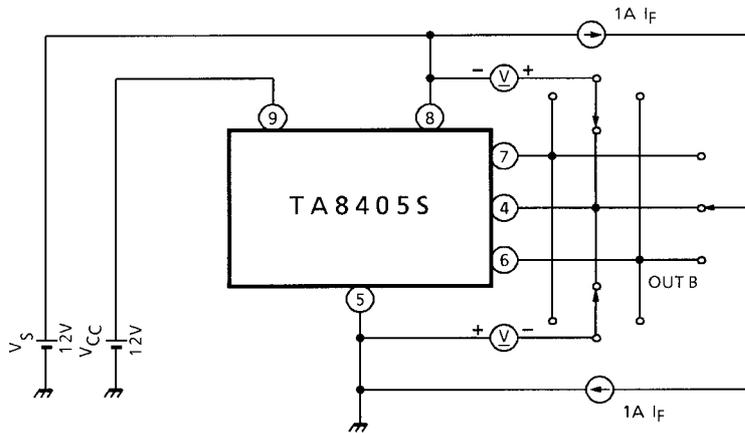
## TEST CIRCUIT 3

$V_{SAT U-1, L-1, U-2, L-2}$



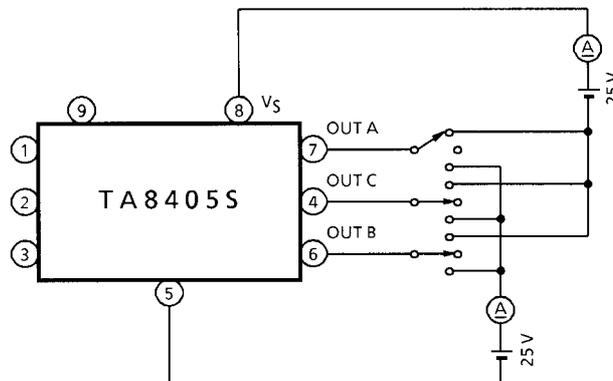
## TEST CIRCUIT 4

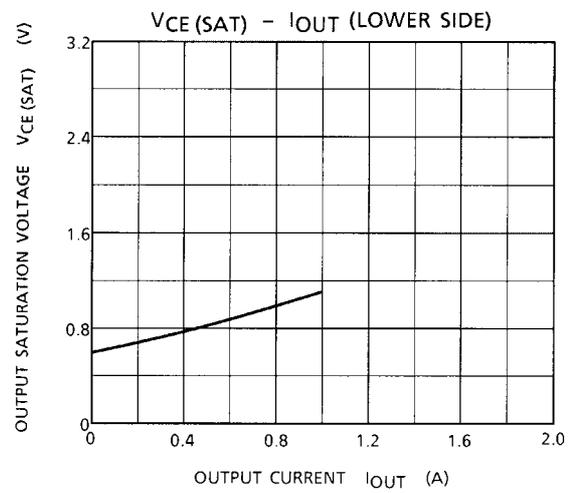
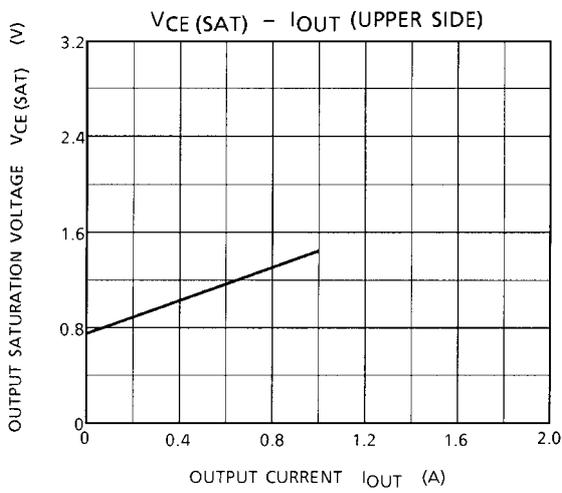
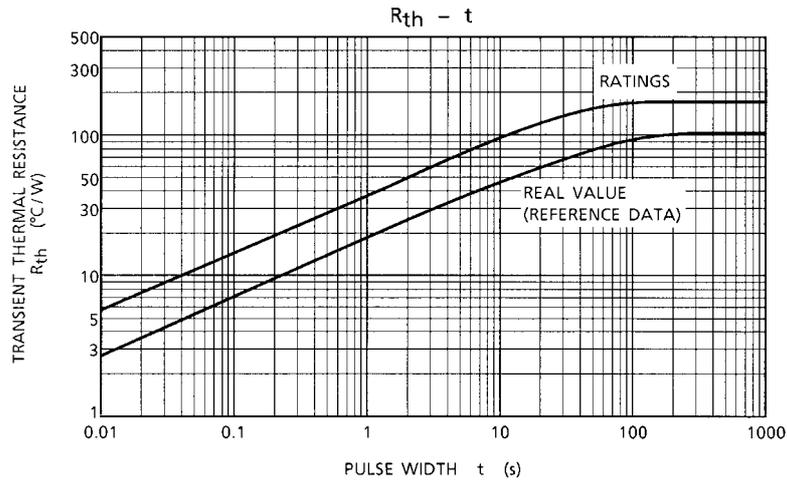
$V_{FU, L}$



## TEST CIRCUIT 5

$I_{LU, L}$

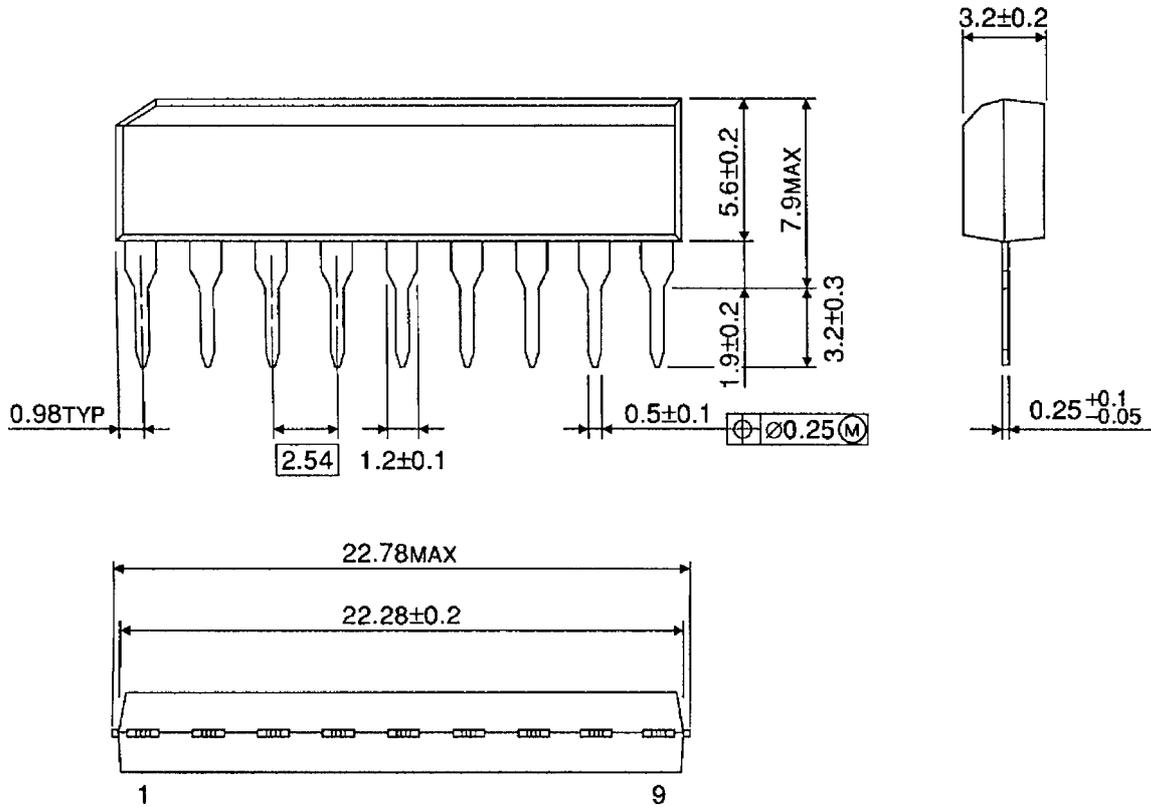




## PACKAGE DIMENSIONS

SIP9-P-2.54A

Unit: mm



Weight: 0.92 g (Typ.)

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