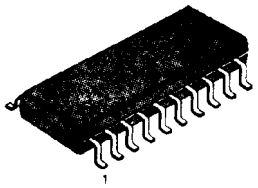
ZOOM & REEL MOTOR DRIVER

The KA7405D is a monolithic integrated circuit, and suitable for the zoom & reel motor driver for camera, tape deck, any other consumer and industrial applications.

22-SOP-300



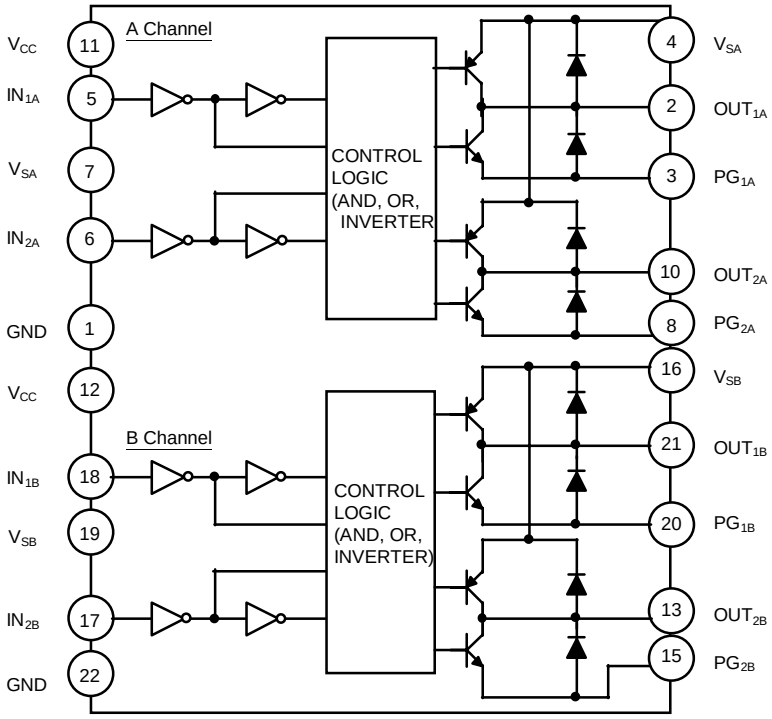
FEATURES

- Output current up to 1.5A(each channel).
- 4 function mode (CW,CCW,STOP and BRAKE) are controlled by 2 logic circuits.
- Operating voltage range : Vcc = 2.5 ~ 7.0V.
- Built-in spike killer diode .
- Low saturation voltage.

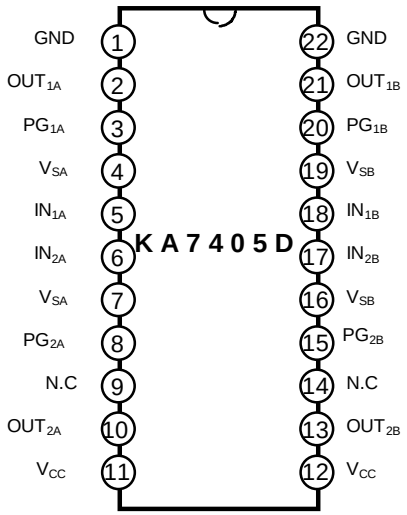
ORDERING INFORMATION

Device	Package	Operating Temperature
KA7405D	22-SOP-300	− 20℃ ~ + 75℃

BLOCK DIAGRAM



PIN CONFIGURATIONS



PIN DESCRIPTIONS

Pin No.	Symbol	I/O	Define	Remark
1	GND	-	Signal Ground	
2	OUT_{1A}	O	Output 1	Channel A
3	PG_{1A}	-	Power Ground 1	Channel A
4	V_{SA}	-	Output Supply Voltage	Channel A
5	IN_{1A}	I	Input 1	Channel A
6	IN_{2A}	I	Input 2	Channel A
7	V_{SA}	-	Output Supply Voltage	Channel A
8	PG_{2A}	-	Power Ground 2	Channel A
9	N.C	-	No Connection	
10	OUT_{2A}	O	Output 2	
11	V_{CC}	-	Supply Voltage	
12	V_{CC}	-	Supply Voltage	
13	OUT_{2B}	O	Output 2	Channel B
14	N.C	-	No Connection	
15	PG_{2B}	-	Power Ground 2	Channel B
16	V_{SB}	-	Output Supply Voltage	Channel B
17	IN_{2B}	I	Input 2	Channel B
18	IN_{1B}	I	Input 1	Channel B
19	V_{SB}	-	Output Supply Voltage	Channel B
20	PG_{1B}	-	Power Ground 1	Channel B
21	OUT_{1B}	O	Output 1	Channel B
22	GND	-	Signal Ground	

ABSOLUTE MAXIMUM RATING (Ta=25℃)

Characteristics	Symbol	Value	Unit
Power Supply Voltage	V_{CC}	10	V
Channel Supply Voltage	V_S	10	V
Power Dissipation	P_D	1000	mW
Operating Temperature	T_{OPR}	-25~+75	℃
Storage Temperature	T_{STG}	-40~+125	℃
Output Current	I_O	1.5	A

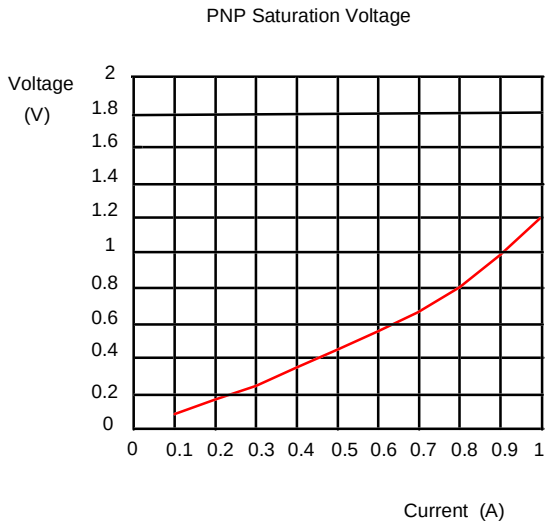
ELECTRICAL CHARACTERISTICS (V_{CC}=5.0V, T_a=25℃, unless otherwise specified)

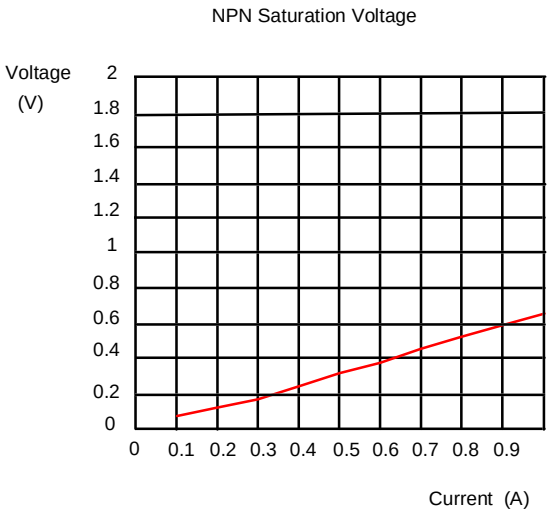
Characteristics	Symbol	Conditions	Min	Typ	Max	Unit
Operating Voltage	V_{CC}		2.5	-	7.0	V
Supply Vurrent (1)	I_{CC1}	V_{IN}(all)=0V	-	0.1	10	μA
Supply Current (2)	I_{CC2}	V_{IN1}=3V	-	15	30	mA
Supply Current (3)	I_{CC3}	V_{IN2}=3V	-	15	30	mA
Supply Current (4)	I_{CC4}	V_{IN}=3V	-	30	50	mA
Input Current	I_{IN}	V_{CC}=6V, V_{IN}=2V	-	45	80	μA
Leakage Current	I_{IK}	V_{CC}=7V	-	0.1	10	μA
Upper Spark Diode Forward Voltage	V_{SF1}	I_O=500mA	-	1.0	1.7	V
Lower Spark Diode Forward Voltage	V_{SF2}	I_O=500mA	-	1.0	1.7	V
Output Saturation Voltage (1A)	V_{O1A}	I_{OA}=300mA	-	0.45	0.70	V
Output Saturation Voltage (1B)	V_{O1B}	I_{OB}=300mA	-	0.45	0.70	V
Output Saturation Voltage (2A)	V_{O2A}	I_{OA}=600mA	-	1.0	1.5	V
Output Saturation Voltage (2B)	V_{O2B}	I_{OB}=600mA	-	1.0	1.5	V
Output Saturation Voltage (3A)	V_{O3A}	I_{OA}=300mA	-	0.45	0.70	V
Output Saturation Voltage (3B)	V_{O3B}	I_{OB}=300mA	-	0.45	0.70	V
Output Saturation Voltage (4A)	V_{O4A}	I_{OA}=600mA	-	1.0	1.5	V
Output Saturation Voltage (4B)	V_{O4B}	I_{OB}=600mA	-	1.0	1.5	V
Output Saturation Voltage (5)	V_{O5}	I_{OB}=600mA	-	0.6	0.8	V
Output Saturation Voltage (6)	V_{O6}	I_O= 600mA	-	0.6	0.8	V
Output Saturation Voltage (7)	V_{O7}	I_O=1200mA	-	1.2	1.6	V
Output Saturation Voltage (8)	V_{O8}	I_O=1200mA	-	1.2	1.6	V
Output Sustain Voltage	V_{SUS}	I_O= 500mA	10	15	-	V

MOTOR OPERATION TRUTH TABLE

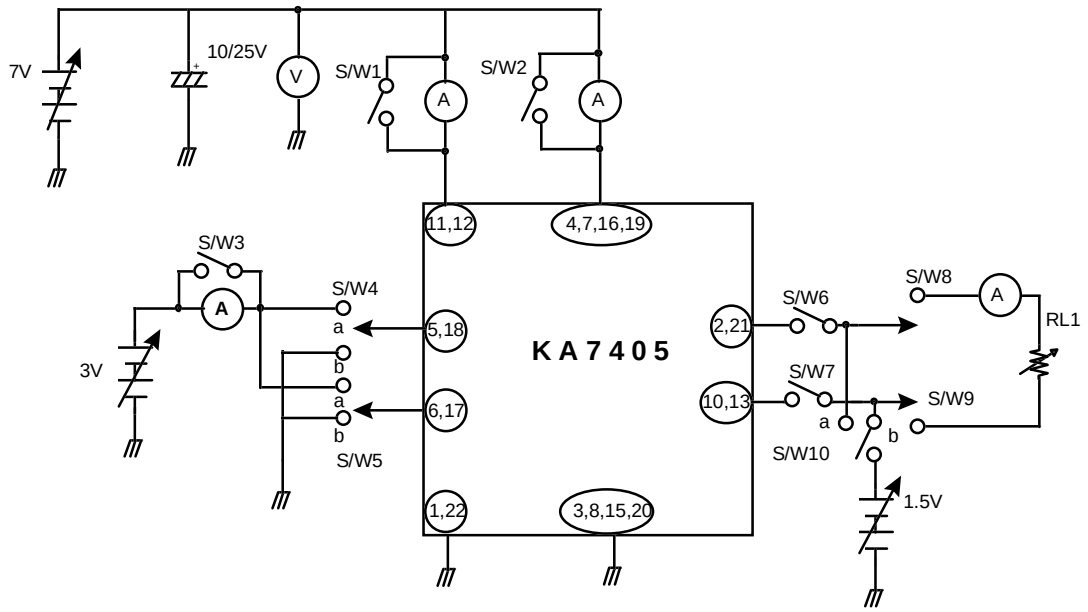
Motor Operation / Input/ Output	Input1	Input2	Output1	Output2	Remark
Stop	LOW	LOW	OFF	OFF	High impedance
Forward Operation	LOW	HIGH	LOW	HIGH	CW/CCW
Backward Operation	HIGH	LOW	HIGH	LOW	CCW/CW
Fast Stop	HIGH	HIGH	LOW	LOW	Brake

CHARACTERISTIC GRAPHS





TEST CIRCUIT



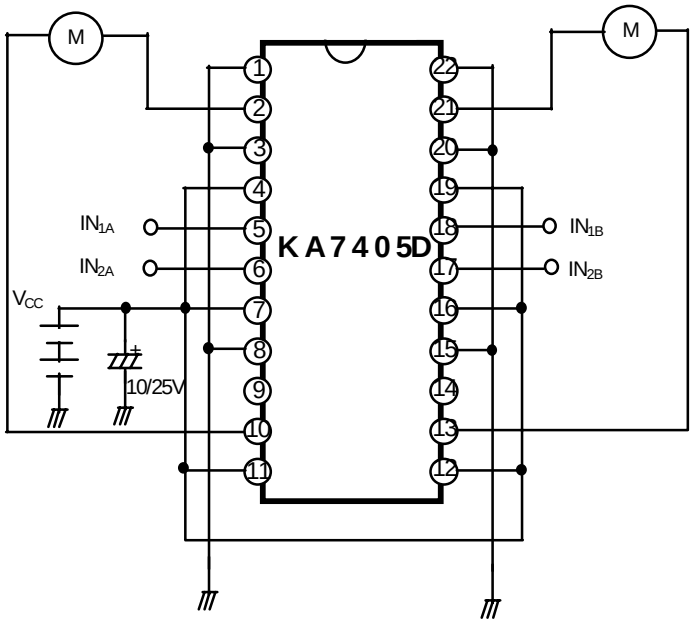
TEST CONDITIONS

Characteristics	SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8	SW9	SW10	Remark
I_{CC1}	off	off	x	b	b	off	off	x	x	off	Supply Current
I_{CC2}	off	off	on	a	b	off	off	x	x	off	Supply Current
I_{CC3}	off	off	on	b	a	off	off	x	x	off	Supply Current
I_{CC4}	off	off	on	a	a	off	off	x	x	off	Supply Current
I_{IN}	on	on	on	a	a	off	off	x	x	off	Input Current
I_{IK}	off	off	off	b	b	off	off	x	x	off	Leakage Current
V_{SF1}	on	on	on	a	b	on	on	off	off	a	Spark Diode
V_{SF2}	on	on	on	b	a	on	on	off	off	b	Spark Diode
V_{O1A}	on	on	on	a	b	on	on	on	on	off	Single Mode
V_{O2A}	on	on	on	b	a	on	on	on	on	off	Single Mode
V_{O3A}	on	on	on	a	b	on	on	on	on	off	Single Mode
V_{O4A}	on	on	on	b	a	on	on	on	on	off	Single Mode
V_{O5}	on	on	on	a	b	on	on	on	on	off	Parallel Mode
V_{O6}	on	on	on	b	a	on	on	on	on	off	Parallel Mode
V_{O7}	on	on	on	a	b	on	on	on	on	off	Parallel Mode
V_{O8}	on	on	on	b	a	on	on	on	on	off	Parallel Mode
V_{SUS}	off	off	x	b	b	on	on	on	on	off	Sustain Voltage

* x : Don't care

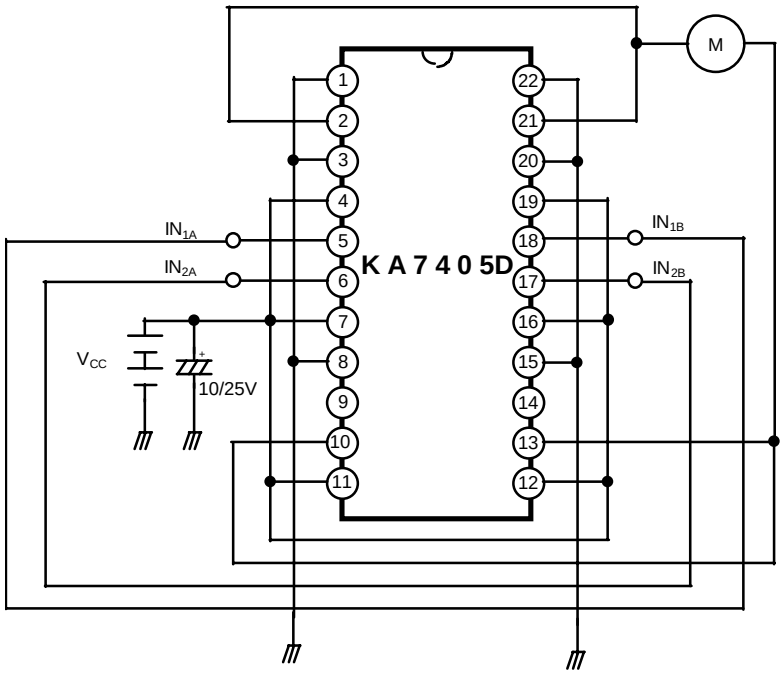
APPLICATION CIRCUIT 1

(SINGLE DRIVE MODE)



APPLICATION CIRCUIT 2

(PARALLEL DRIVE MODE)



PACKAGE DIMENSIONS (Unit : mm)