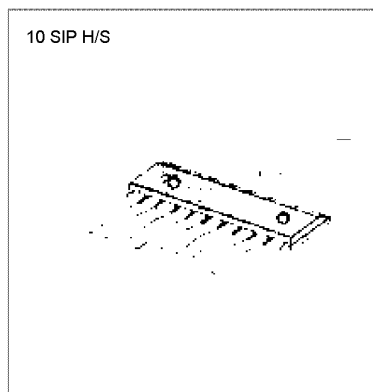


### DUAL BRIDGE DRIVER

KA8306 is dual bridge driver designed for the cassette and tape loading motor drives in a VCR system.

### FEATURES

- 4 modes available (CW/CCW/STOP/BRAKE)
- Output current up to 1.0A (AVE) and 1.5A (PEAK)
- Wide range of operating voltage
  - $V_{CC\text{ opr}} = 4.5 \sim 18V$
  - $V_S\text{ opr} = 0 \sim 18V$
  - $V_{REF\text{ opr}} = 0 \sim 18V$
- Build in thermal shutdown, over current protector and punch through current restriction circuit.
- Hysteresis for all inputs.



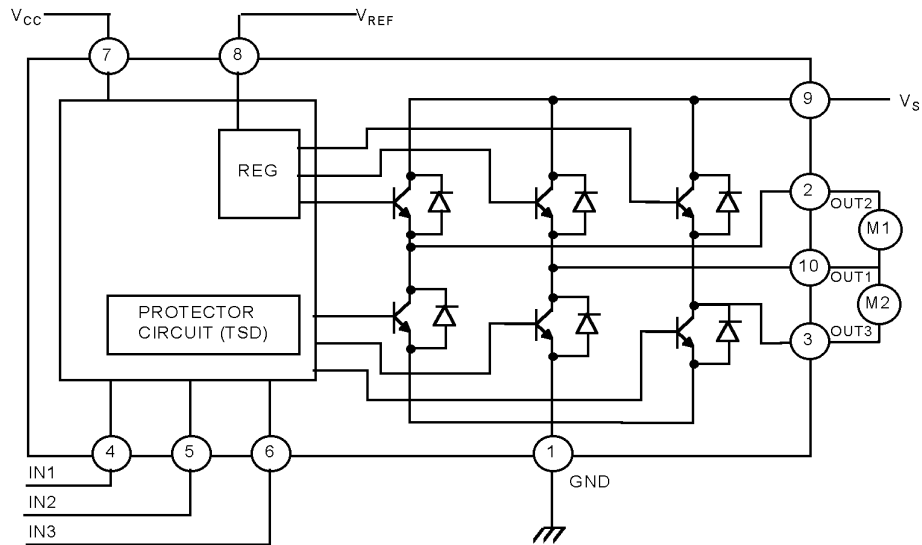
### ORDERING INFORMATION

Device	Package	Operating Temperature
KA8306	10 SIP H/S	-30 ~ +75°C

### ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub> = 25°C)

Characteristic	Symbol	Value	Unit
Supply Voltage	$V_{CC}$	25	V
Motor Drive Voltage	$V_S$	25	V
Reference Voltage	$V_{REF}$	25	V
Output Current	$I_O$ (peak)	1.5	A
	$I_O$ (AVE)	1.0	A
Power Dissipation	$P_D$	7.0	W
Operating Temperature	$T_{OPR}$	-30 ~ +75	°C
Storage Temperature	$T_{STG}$	-55 ~ +150	°C

**BLOCK DIAGRAM**



INPUT*			OUTPUT			MODE	
IN1	IN2	IN3	OUT1	OUT2	OUT3	M1	M2
0	0	1/0	L	L	L	BRAKE	BRAKE
1	0	0	H	L	**	CW/CCW	STOP
1	0	1	L	H	**	CCW/CW	STOP
0	1	0	H	**	L	STOP	CW/CCW
0	1	1	L	**	H	STOP	CCW/CW
1	1	1/0	L	L	L	BRAKE	BRAKE

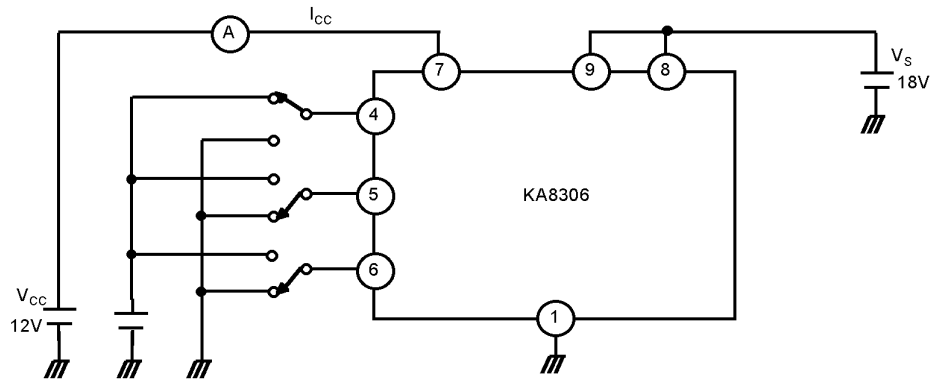
\*: Inputs are all high active type

\*\* High impedance

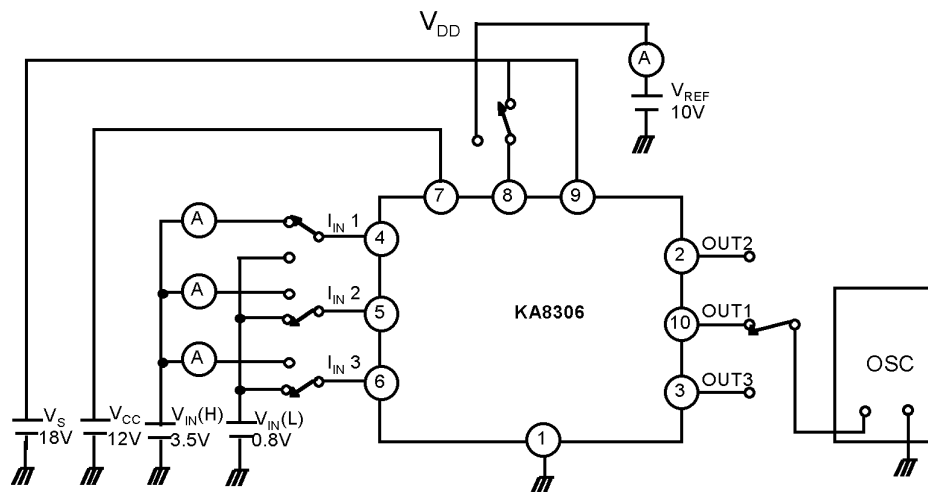
**ELECTRICAL CHARACTERISTICS** ( $T_A=25^\circ\text{C}$ ,  $V_{CC}=18\text{V}$ ,  $V_S=18\text{V}$ )

Characteristic		Symbol	Test Circuit	Test Conditions	Min	Typ	Max	Unit
Supply Current		$I_{CC1}$	1	Output Off CW/CCW Mode	—	17	30	mA
		$I_{CC2}$	1	Output Off, Stop Mode	—	13	25	mA
Input Operating Voltage	H	$V_{IN-H}$	2	$T_J=25^\circ\text{C}$	3.5	—	5.5	V
	L	$V_{IN-L}$	2	$T_J=25^\circ\text{C}$	0	—	0.8	V
Input Current		$I_{IN}$	2	$V_{IN}=3.5\text{V}$ , Sink Mode	—	5	20	$\mu\text{A}$
Input Hysteresis Voltage		$V_{HYS}$	2		—	0.7	—	V
Saturation Voltage	Upper	$V_{SAT-1U}$	3	$V_{REF}=V_S$ , $I_O=0.2\text{A}$	—	1.2	1.5	V
	Lower	$V_{SAT-1L}$	3	$V_{REF}=V_S$ , $I_O=0.2\text{A}$	—	1.1	1.4	V
	Upper	$V_{SAT-2U}$	3	$V_{REF}=V_S$ , $I_O=1.0\text{A}$	—	2.7	3.1	V
	Lower	$V_{SAT-2L}$	3	$V_{REF}=V_S$ , $I_O=1.0\text{A}$	—	2.5	3.0	V
Output Voltage		$V_O-1$	3	$V_{REF}=10\text{V}$ , $I_O=0.5\text{A}$ Output Measure	10.3	10.7	11.5	V
		$V_O-2$	3	$V_{REF}=10\text{V}$ , $I_O=0.5\text{A}$ Output Measure	10.1	10.5	11.3	V
Leakage Current	Upper	$I_{L-U}$		$V_S=25\text{V}$	—	0	50	$\mu\text{A}$
	Lower	$I_{L-L}$		$V_S=25\text{V}$	—	0	50	$\mu\text{A}$
Diode Forward Voltage	Upper	$V_F-U$	4	$I_F=1.0\text{A}$	—	2.2	—	V
	Lower	$V_F-L$	4	$I_F=1.0\text{A}$	—	1.4	—	V
Reference Current		$I_{REF}$	2	$V_{REF}=10\text{V}$ , Source Mode	—	20	30	$\mu\text{A}$

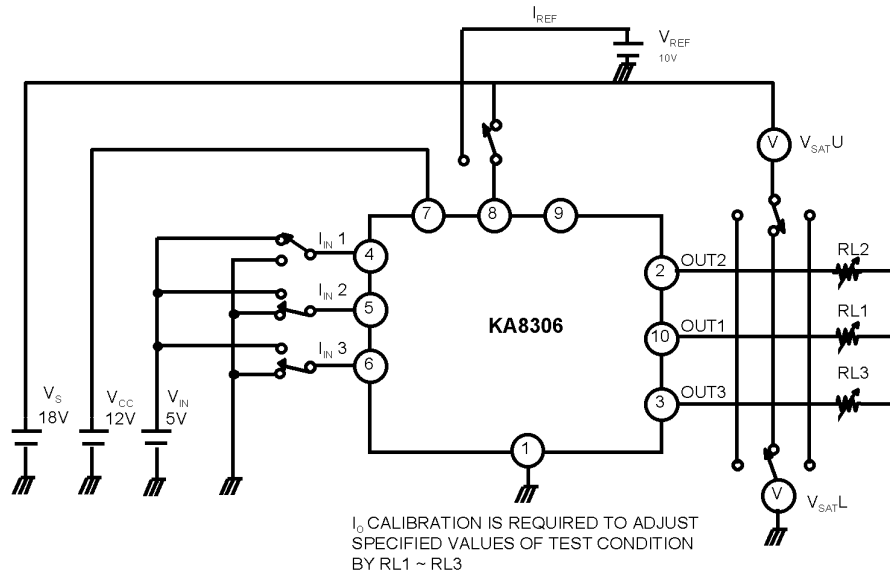
TEST CIRCUIT 1



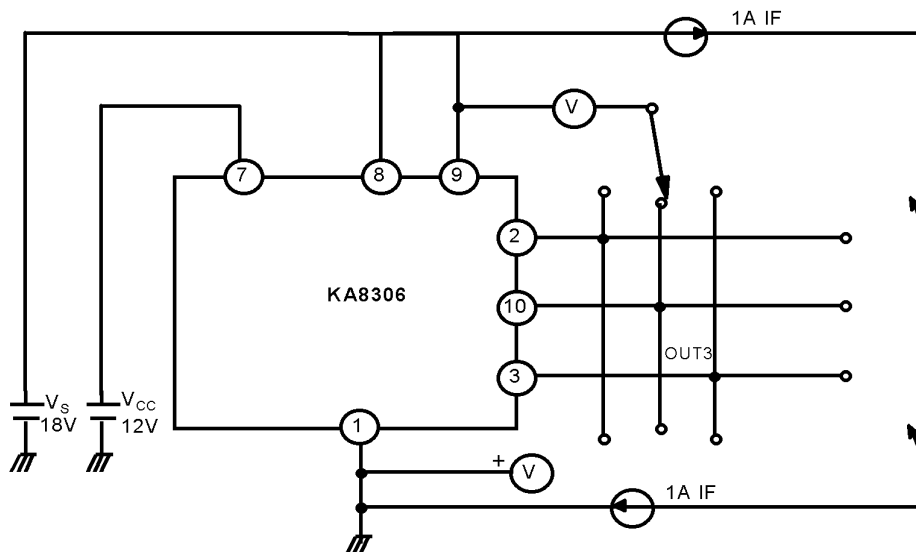
TEST CIRCUIT 2



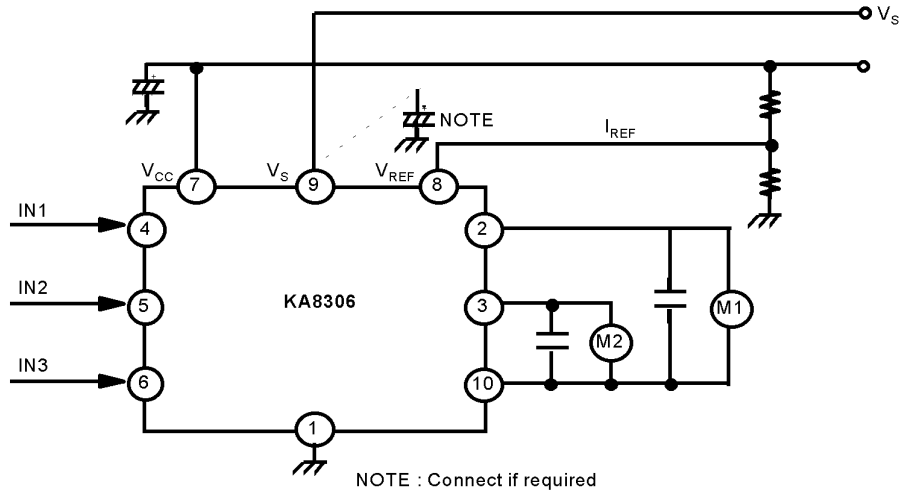
TEST CIRCUIT 3



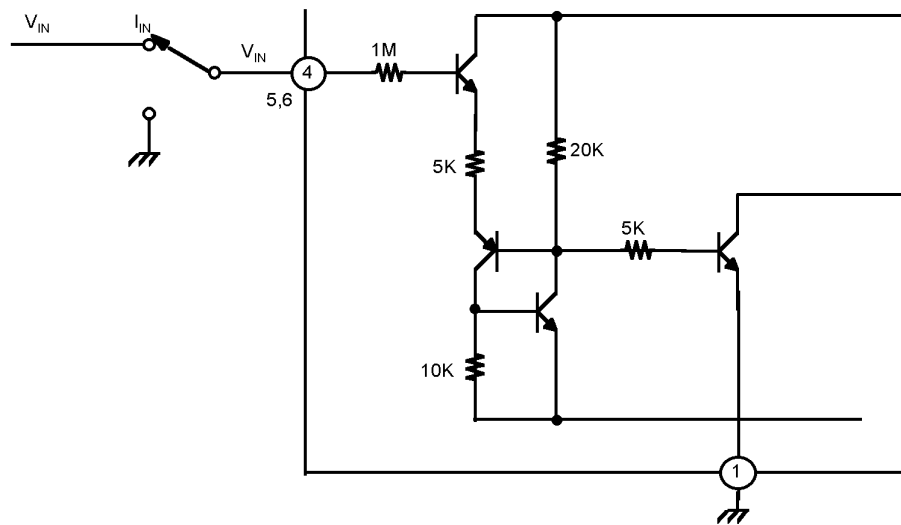
TEST CIRCUIT 4



APPLICATION CIRCUIT

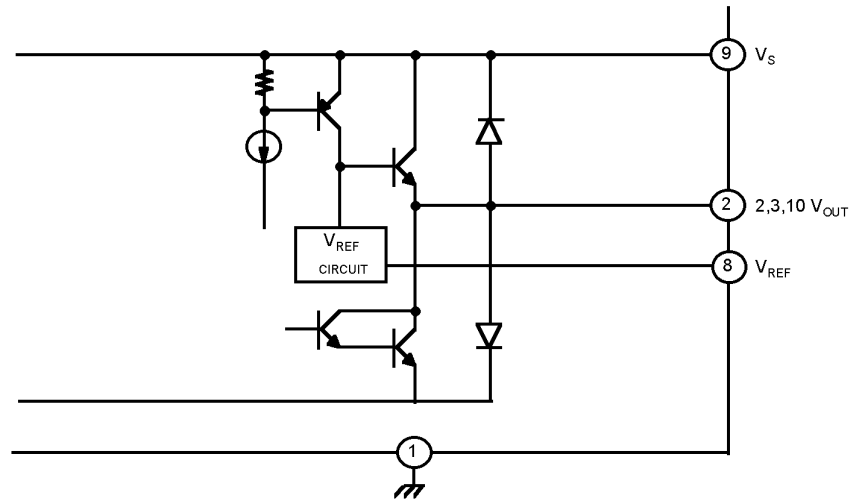


INPUT CIRCUIT



INPUT TERMINALS OF PINS 4,5 AND 6 ARE ALL HIGH ACTIVE TYPE AND HAVE A HYSTERESIS OF 0.7V TYPE  $5\mu A$  TYPE OF SOURCE MODE INPUT CURRENT IS REQUIRED.

OUTPUT CIRCUIT



OUTPUT VOLTAGE IS CONTROLLED BY  $V_{REF}$  VOLTAGE RELATIONSHIP BETWEEN  $V_{OUT}$  AND  $V_{REF}$  IS  $V_{OUT} = V_{BE}(=0.7) + V_{REF}$   
 $V_{REF}$  TERMINAL REQUIRED TO CONNECT TO  $V_S$  TERMINAL FOR STABLE OPERATION IN CASE OF NO REQUIREMENT OF  $V_{OUT}$  CONTROL

Dimensions in Millimeters

