

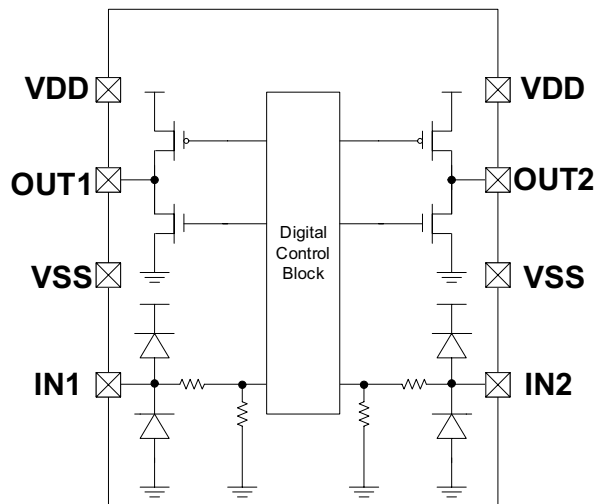
1 General Description

BPM4506 is a bi-directional motor driver IC for low-voltage applications. It provides Forward / Reverse / Brake / Stop function for motor driver applications. It is designed with LSI high technology with a low-power and low-cost process.

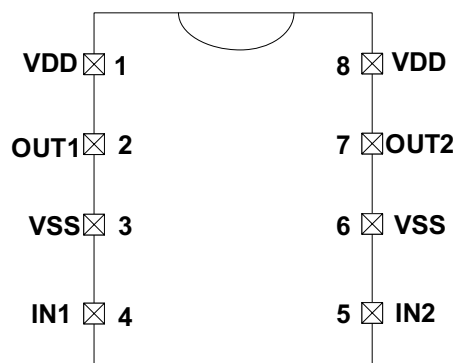
2 Features

- Low voltage operation
- Provide input with built-in pull-down resistor
- 4 function modes of Forward / Reverse / Brake / Stop

3 Block Diagram



4 Pin Assignment And Mark



MARK: BP4506 & BPM4506

5 Pin Description

Name	ATTR.	Function
V _{DD}	-	Power supply
V _{SS}	-	Ground
IN1	I	Input pin 1
IN2	I	Input pin 2
OUT1	O	Motor Driver Output 1
OUT2	O	Motor Driver Output 2

6 Electrical Characteristics

Unit

(Operating Temperature=25 °C)

Symbol	Description	Condition	Min.	Typ.	Max.	Unit
V _{DD}	Operating Voltage Range		2.0	3.0	5.5	V
I _{Sb}	Standby Current	V _{DD} =3V, IN1=IN2=V _{SS}		<1		μA
		V _{DD} =4.5V, IN1=IN2=V _{SS}		<1		
I _{OP}	Operation Current	V _{DD} =3V, No load		3.5	50	μA
		V _{DD} =4.5V, No load		7.8	50	
I _{IN}	Input Current	V _{DD} =3V, IN1=IN2=V _{DD}		3.2	6	μA
		V _{DD} =4.5V, IN1=IN2=V _{DD}		7.3	15	
I _O	OUT1-OUT2 Load Current	V _{DD} =3V			400	mA
		V _{DD} =4.5V			500	
V _{IH}	Input High Voltage	V _{DD} =3V	1.5		V _{DD}	V
		V _{DD} =4.5V	2.4		V _{DD}	
V _{IL}	Input Low Voltage	V _{DD} =3V	V _{SS}		0.5	V
		V _{DD} =4.5V	V _{SS}		0.55	
V _{OH}	Output High Voltage	V _{DD} =3V, I _{OH} =100mA	V _{DD} -0.3	2.85		V
		V _{DD} =4.5V, I _{OH} =100mA	V _{DD} -0.3	4.33		
V _{OL}	Output Low Voltage	V _{DD} =3V, I _{OL} =100mA		0.12	0.24	V
		V _{DD} =4.5V, I _{OL} =100mA		0.1	0.2	
T _{RS}	Output Rise Time	V _{DD} =3V		13.8	50	nS
		V _{DD} =4.5V		18.0	50	
T _{FL}	Output Fall Time	V _{DD} =3V		45.6	100	nS
		V _{DD} =4.5V		88.8	150	
T _{RP}	Input to Output Response Time	V _{DD} =3V		67.0	150	nS
		V _{DD} =4.5V		70.9	150	

7 Absolute Maximum Rating

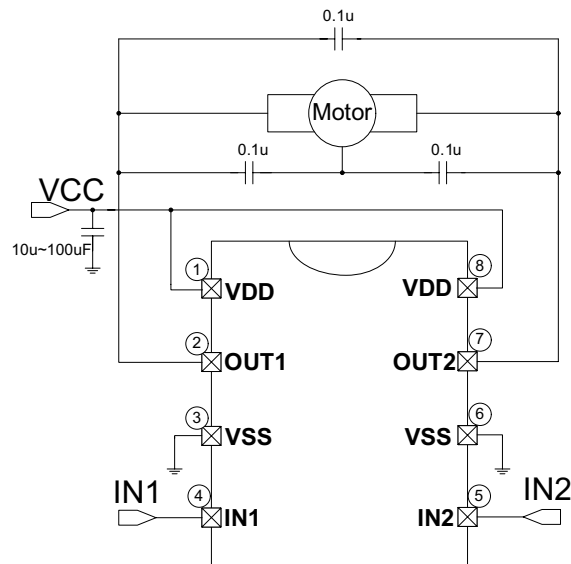
Symbol	Rating	Unit
VDD-VSS	-0.5 ~ +8.5	V
V _{in}	V _{SS} -0.3 < V _{in} < V _{DD} +0.3	V
V _{out}	GND < V _{out} < V _{DD}	V
T _{op} (operating)	-20 ~ +70	°C
T _{st} (storage)	-55 ~ +125	°C

8 Operating Mode

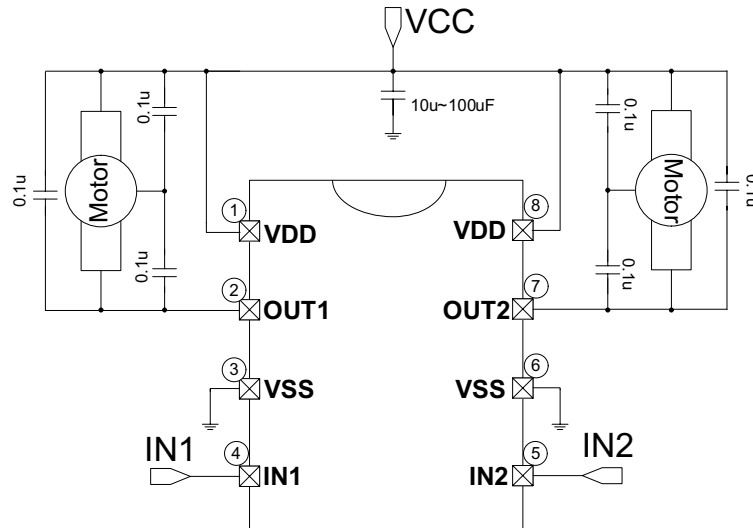
IN1	IN2	OUT1	OUT2	Mode
0	0	0	0	Stop
1	0	1	0	Forward
0	1	0	1	Reverse
1	1	1	1	Brake

9 Application Circuit

9.1 Drive One Motor for Bi-directional Control

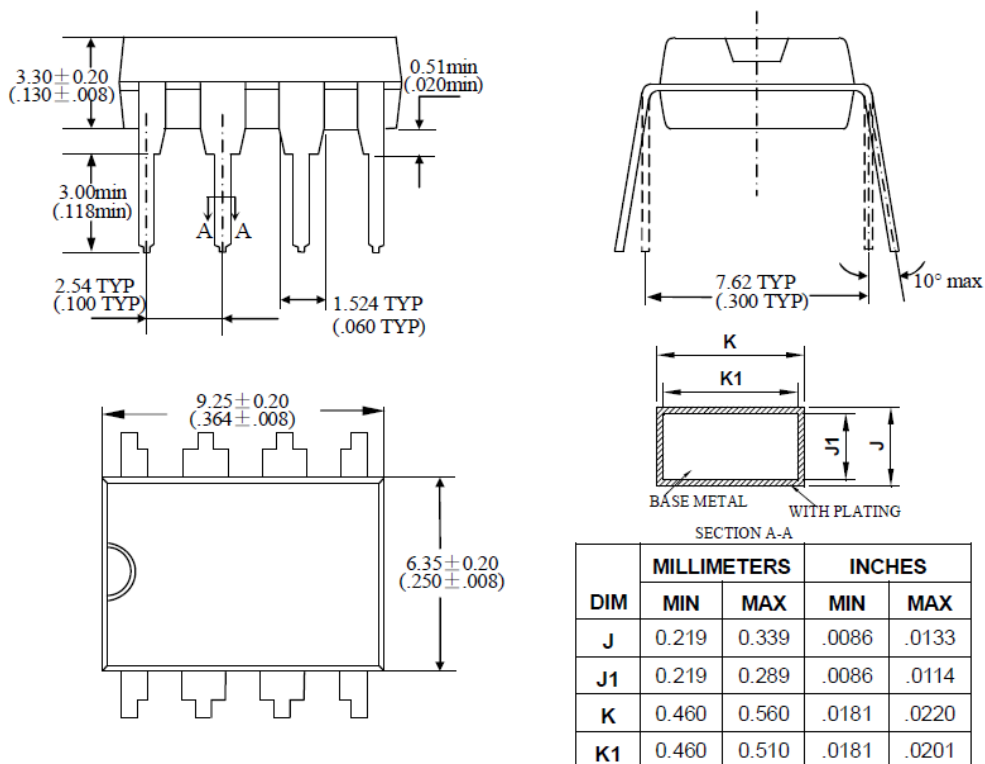


9.2 Drive Two Motors for Directional Control

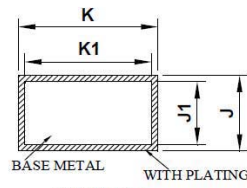
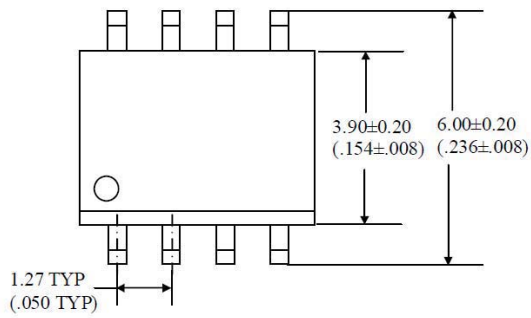
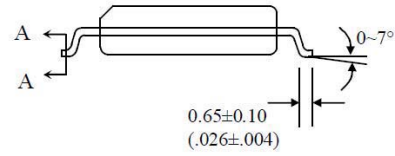
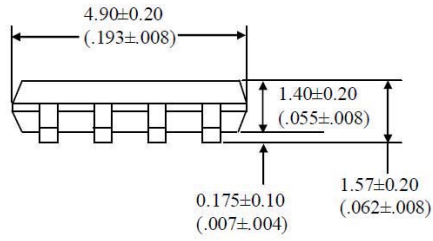


10 Package Dimension

10.1 8-Pin DIP



10.2 8-Pin SOP



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
J	0.178	0.278	.0070	.0109
J1	0.178	0.228	.0070	.0090
K	0.406	0.496	.0160	.0195
K1	0.406	0.456	.0160	.0180