

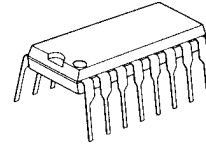
BRUSH LESS DC MOTOR PRE-DRIVER

■GENERAL DESCRIPTION

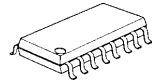
The **NJM2624A** is a 3-phase brushless DC motor pre-driver which requires external power-transistors suited to drive current of the motor.

The Run Enable function is used as PWM control besides of ON/OFF switched function.

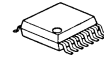
■PACKAGE OUTLINE



NJM2624AD



NJM2624AM

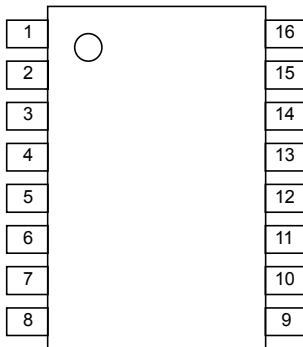


NJM2624AV

■FEATURES

- Operating Voltage (V⁺=4.5V to 18V)
- Low Operating Current (10mA max.)
- Run Enable
- Forward or Reverse Direction
- Output Switch Current (90mA typ.)
- Bipolar Technology
- Package Outline DIP16, DMP16, SSOP16

■PIN CONFIGURATION

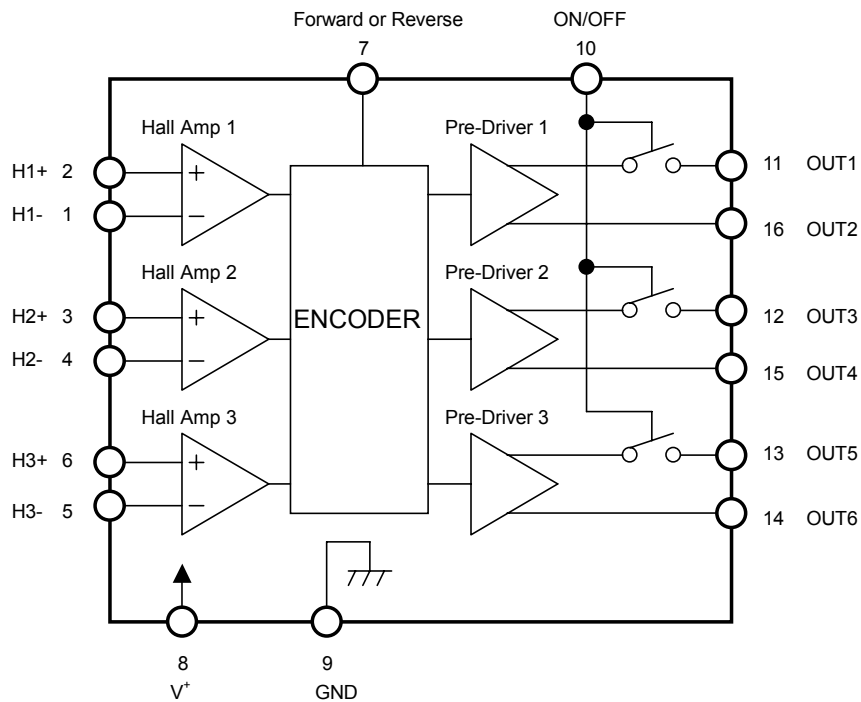


PIN FUNCTION

1.H1-	9.GND
2.H1+	10.ON/OFF
3.H2+	11.OUT1
4.H2-	12.OUT3
5.H3-	13.OUT5
6.H3+	14.OUT6
7.FR	15.OUT4
8.V ⁺	16.OUT2

NJM2624A

■BLOCK DIAGRAM



■ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V ⁺	20	V
Output Current	I _o	100	mA
Power Dissipation	P _D	(DIP16) 700 (DMP16) 350 (SSOP16) 300	mW
Operating Temperature Range	Topr	-25 ~ +85	°C
Storage Temperature Range	Tstg	-40 ~ +150	°C

■ELECTRICAL CHARACTERISTICS (V⁺=12V, Ta=25°C)

Total Device

PARAMETER	SYMBOL	TEST CONDITONS	MIN.	TYP.	MAX.	UNIT
Supply Voltage	V ⁺		4.5	–	18	V
Supply Current	I _{CC}	RL=∞ ON/OFF Terminal=OPEN	–	3.7	10	mA

Hall Sensor Section

Input Offset Voltage	V _{IO}	RL=470Ω	-4.2	–	4.2	mV
Input Common mode Voltage range	V _{ICM}	RL=470Ω	1.5	–	10.5	V
Input Bias Current	I _B		–	–	600	nA

Output Section

Output Voltage 1	V _{OUT1}	RL=470Ω, V ⁺ =12V	8.9	9.5	–	V
Output Voltage 2	V _{OUT2}	RL=470Ω, V ⁺ =5V	–	3.5	–	V
Maximum Output Current 1	I _{OUT1}	RL=100Ω, V ⁺ =12V	50	90	–	mA
Maximum Output Current 2	I _{OUT2}	RL=100Ω, V ⁺ =5V	–	30	–	mA
Output Leak Current	I _{LEAK}		–	–	5	μA

Run Enable Section

Run Enable Voltage	V _{ON}	RL=470Ω	1/2V ⁺ +0.5	–	–	V
Run Disable Voltage	V _{OFF}	RL=470Ω	–	–	1/2V ⁺ -0.5	V
Output Voltage Undefined Area	V _{O-undef}	RL=470Ω	1/2V ⁺ -0.5	1/2V ⁺	1/2V ⁺ +0.5	V
Source Current 1	I _{ON1}	ON/OFF Terminal=GND	–	250	400	μA

Forward or Reverse Direction Section

Forward Direction	V _F	RL=470Ω	1/2V ⁺ +0.5	–	–	V
Reverse Direction	V _R	RL=470Ω	–	–	1/2V ⁺ -0.5	V
F/R Logic Undefined Area	V _{SW-undef}	RL=470Ω	1/2V ⁺ -0.5	1/2V ⁺	1/2V ⁺ +0.5	V
Source Current 2	I _{ON2}	Forward or Reverse Terminal=GND	–	250	400	μA

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■ TERMINAL DESCRIPTION

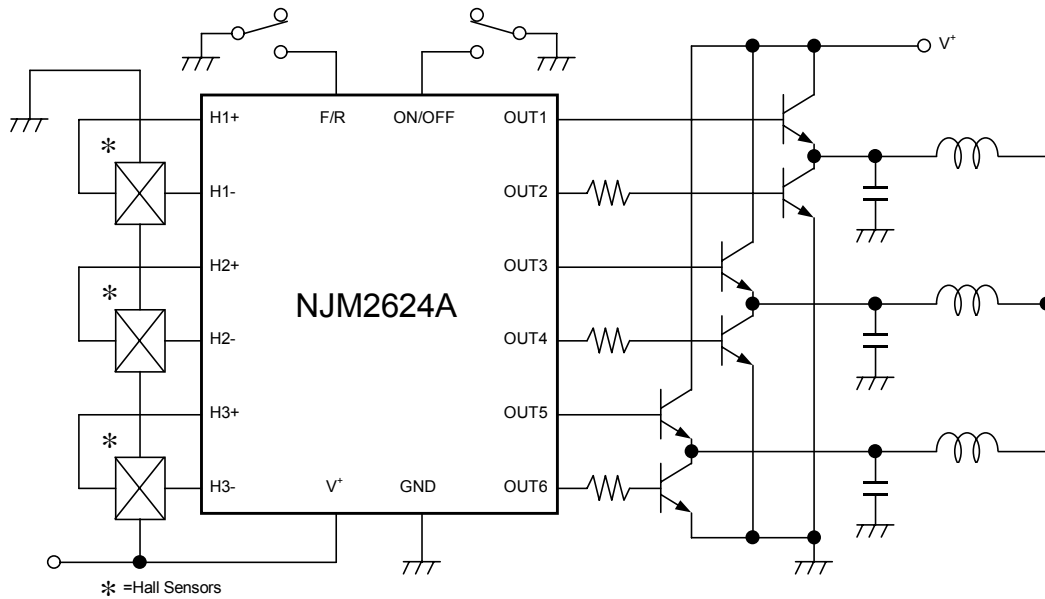
Pin No,	SYMBOL	FUNCTION	INSIDE EQUIVALENT CIRCUIT
2	H1+	Sensor Input 1 Non-Inverting Terminal	
3	H2+	Sensor Input 2 Non-Inverting Terminal	
6	H3+	Sensor Input 3 Non-Inverting Terminal	
1	H1-	Sensor Input 1 Inverting Terminal	
4	H2-	Sensor Input 2 Inverting Terminal	
5	H3-	Sensor Input 3 Inverting Terminal	
7	F/R	Forward or Reverse Direction Terminal	

■ TERMINAL DESCRIPTION

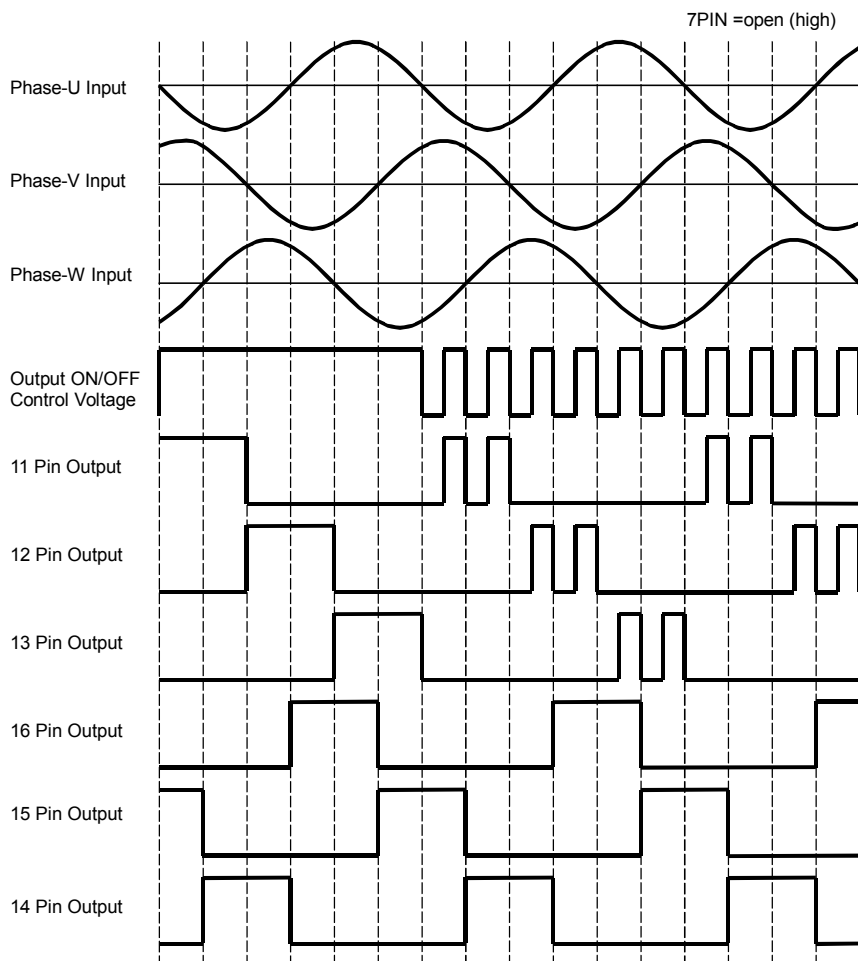
Pin No,	SYMBOL	FUNCTION	INSIDE EQUIVALENT CIRCUIT
8	V ⁺	Power Supply	-
9	GND	Ground	-
10	ON/OFF	Output Run Enable Terminal	
11	OUT1	Internal Switching Transistor Emitter Follower	
16	OUT2		
12	OUT3		
15	OUT4		
13	OUT5		
14	OUT6		

NJM2624A

■TYPICAL APPLICATION

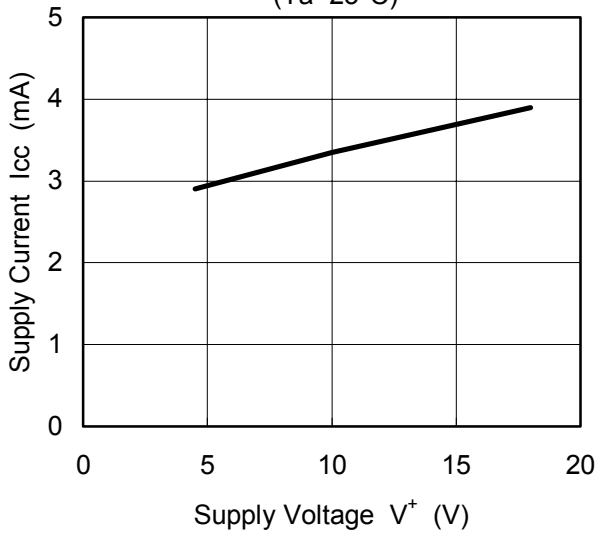


■TIMING CHART

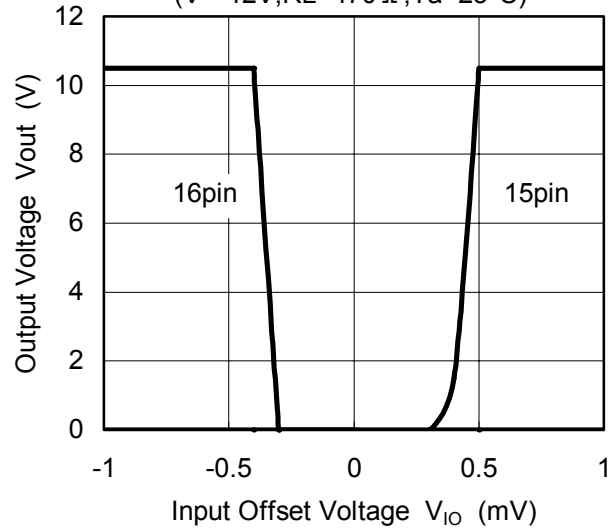


TYPICAL CHARACTERISTICS

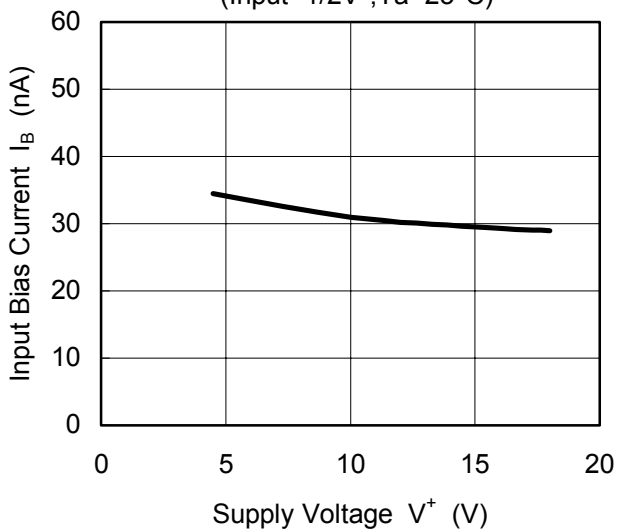
Supply Current vs. Supply Voltage
($T_a=25^\circ\text{C}$)



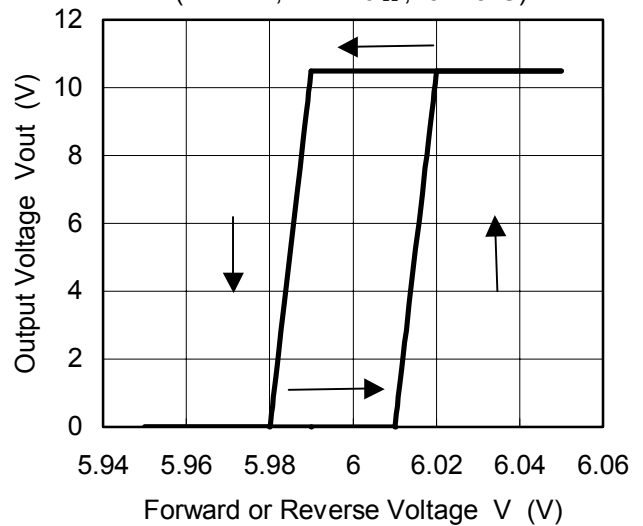
Input vs. Output (Offset)
($V^+=12\text{V}, R_L=470\ \Omega, T_a=25^\circ\text{C}$)



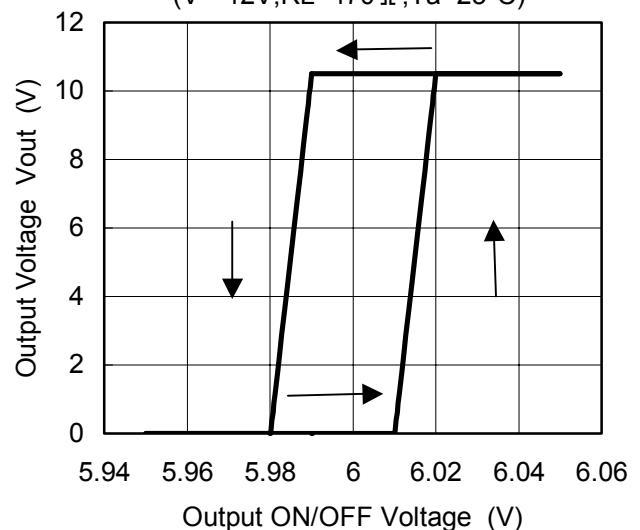
Input Bias Current vs. Supply Voltage
(Input= $1/2V^+, T_a=25^\circ\text{C}$)



Output Voltage vs. Forward or Reverse Voltage
($V^+=12\text{V}, R_L=470\ \Omega, T_a=25^\circ\text{C}$)

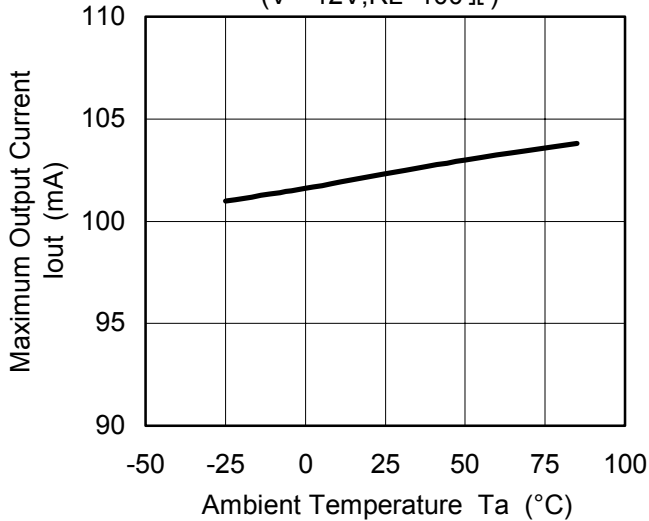


Output Voltage vs. Output ON/OFF Voltage
($V^+=12\text{V}, R_L=470\ \Omega, T_a=25^\circ\text{C}$)

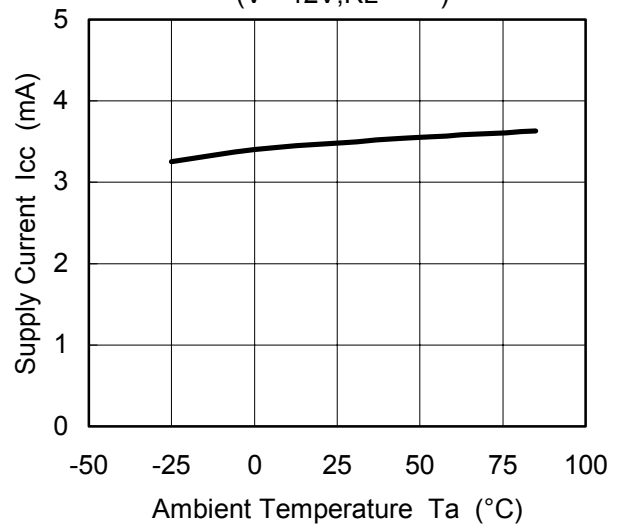


TYPICAL CHARACTERISTICS

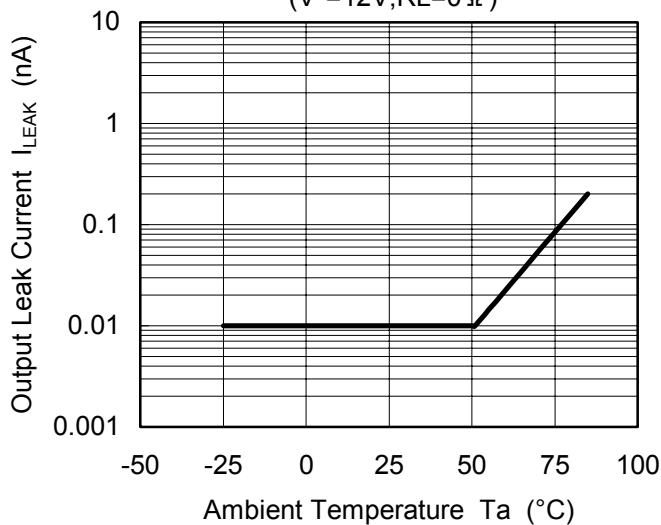
Maximum Output Current vs. Temperature
($V^+=12V, R_L=100\Omega$)



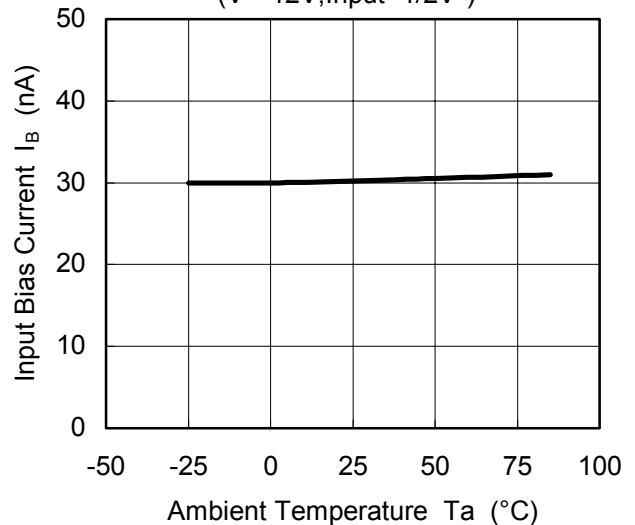
Supply Current vs. Temperature
($V^+=12V, R_L=\infty$)



Output Leak Current vs. Temperature
($V^+=12V, R_L=0\Omega$)



Input Bias Current vs. Temperature
($V^+=12V, Input=1/2V^+$)



[CAUTION]

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