BRUSH LESS DC MOTOR PRE-DRIVER

■ GENERAL DESCRIPTION

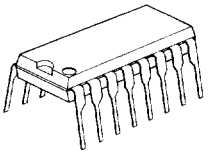
The NJM2624 is a 3-phase brushless DC motor pre-driver which requies external power-transistors suited to drive current of the motor.

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

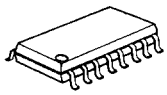
■ FEATURES

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

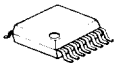
■ PACKAGE OUTLINE



NJM2624D

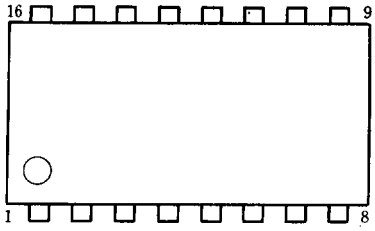


NJM2624M



NJM2624V

■ PIN CONFIGURATION

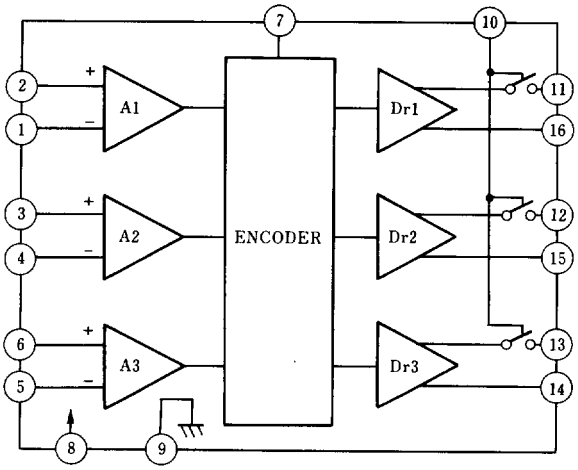


NJM2624D
NJM2624M
NJM2624V

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 : F/R	15 : OUT4
8 : V^+	16 : OUT2

■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATINGS

(Ta=25℃)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V^+	20	V
Output Current	Io	100	mA
Power Dissipation	P_D	(DMP-16) 700 (DMP-16) 300 (SSOP-16) 300	mW
Operating Temperature Range	T_{opr}	−40～+85	℃
Storage Temperature Range	T_{stg}	(D, M type-16) −40～+150	℃
		(V type) −40～+125	℃

■ ELECTRICAL CHARACTERISTICS

(V^+=12V, Ta=25℃)

Total Device

PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Supply Voltage	V^+		4.5	–	18	V
Supply Current	Iq	RL=∞, 7Pin=OPEN, 10Pin=OPEN	–	3.7	10	mA

Hole Sensor Section

PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Input Offset Voltage	Vio		−4.2	–	4.2	mV
Input Common mode Voltage range	Vicm		1.5	–	10.5	V
Input Bias Current	Ib		–	–	600	nA

Output Section

PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Output Voltage 1	Vout 1	RL=470Ω, V^+=12V	8.9	9.5	–	V
Output Voltage 2	Vout 2	RL=470Ω, V^+=5V	–	3.5	–	V
Maximum Output Current 1	I out 1	RL=100Ω, V^+=12V	50	90	–	mA
Maximum Output Current 2	I out 1	RL=100Ω, V^+=5V	–	30	–	mA
Output Leak Current	I leak		–	–	5	μA

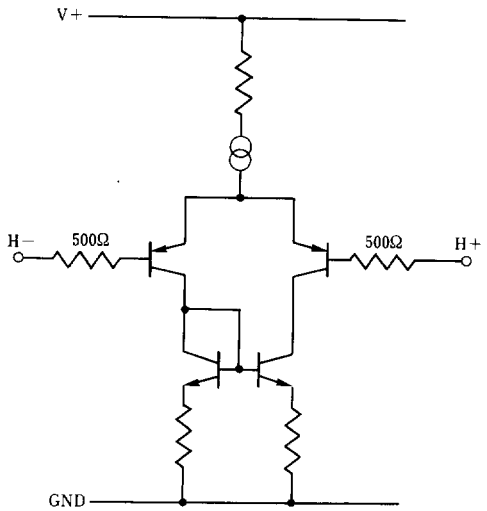
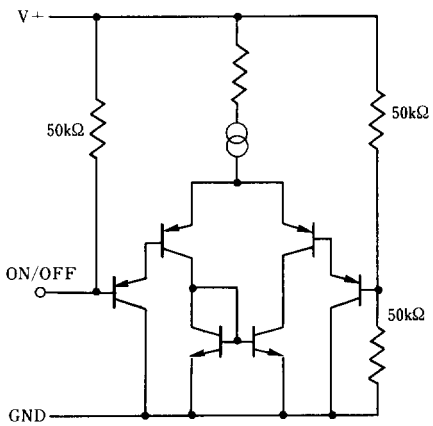
Run Enable Section

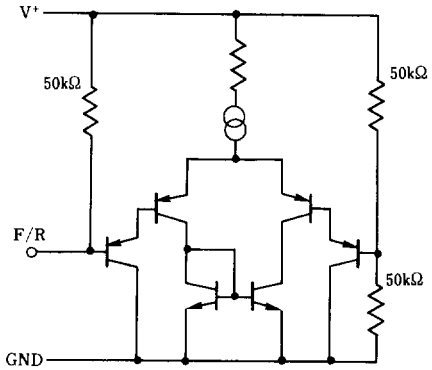
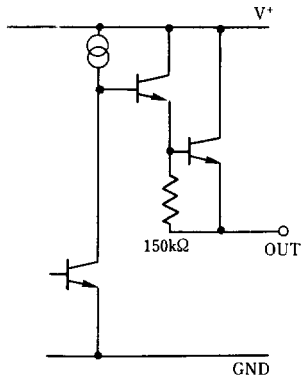
PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Run Enable Voltage	Von	RL=470Ω	1/2V^+ −0.5v	–	–	V
Run Disable Voltage	Voff	RL=470Ω	–	–	1/2V^+ +0.5v	V
Source Current 1	I on 1	Run Enable Terminal=GND	–	250	400	μA

Forward or Reverse Direction Section

PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Forward Direction	VF	RL=470Ω	1/2V^+ −0.5v	–	–	V
Reverse Direction	VR	RL=470Ω	–	–	1/2V^+ +0.5v	V
Source Current 1	I on 2	Forward or Reverse Direction Terminal=GND	–	250	400	μA

■ TERMINAL DESCRIPTION

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

PIN NO.	SYMBOL	FUNCTION	INSIDE EQUIVALENT CIRCUIT
8	V+	Power Supply	–
9	GND	Ground	–
10	Run Enable	Output Run Enable Terminal	
11 12 13 14 15 16	Out1 Out3 Out5 Out6 Out4 Out2	Internal Switching Transistor : Emitter Follower	

■ TYPICAL APPLICATION