

Two-phase Unipolar DC Brushless Motor Pre-Driver IC

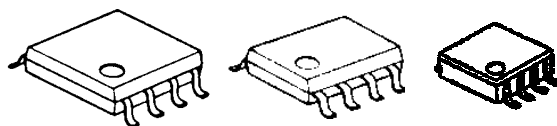
■ GENERAL DESCRIPTION

The NJM2641 is a 2-phase DC brushless motor pre-driver IC.

It incorporates Lock Detect and Auto Protection Circuit. The turn ON / turn OFF ratio at Auto Protection Release was set in 1:10 easy-to-use.

Moreover, the pin is compatible with 48V pre-driver NJM2640.

■ PACKAGE OUTLINE



NJM2641M

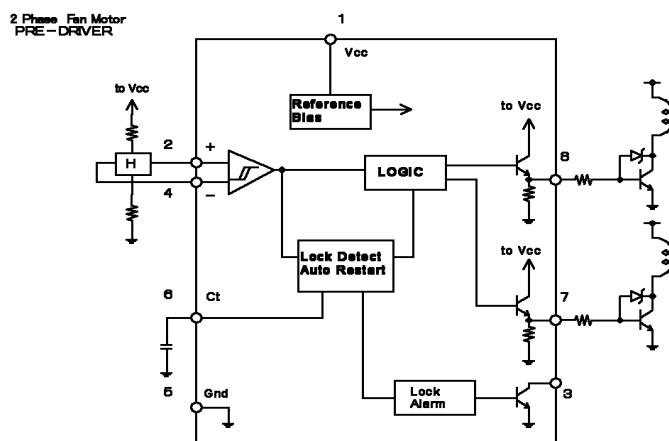
NJM2641E

NJM2641RB1

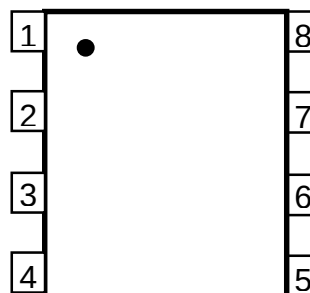
■ FEATURES

- Operating Voltage $V_{DD}=4$ to 14V
- Absolute Maximum Voltage 15V
- Internal Lock Detect / Auto Protection Release Circuit
- Lock Alarm Output Terminal
- Package Outline DMP8 / EMP8 / TVSP8

■ BLOCK DIAGRAM



■ PIN FUNCTION



- 1: Vcc
- 2: H1
- 3: LA
- 4: H2
- 5: GND
- 6: Ct
- 7: OUT1
- 8: OUT2

NJM2641

Preliminary

■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT	NOTE
Supply Voltage	V_{CC}	15	V	-
Hall Input Voltage Range	V_{IH}	-0.3 ~ V_{CC}	V	-
Output Current (Peak)	I_{OUT}	70	mA	-
Lock Alarm Output Voltage	V_{OLA}	15	V	-
Hall Input Differential Voltage	V_{IHD}	2	V	-
Lock Alarm Output Current	I_{OLA}	20	mA	-
Operating Temperature Range	T_{opr}	-40 ~ 85	°C	-
Operating Junction Temperature Range	T_{oj}	-40 ~ 150	°C	-
Storage Temperature Range	T_{stg}	-55 ~ 150	°C	-
Power Dissipation	P_D	300(DMP8) / 375(EMP8) / 400(TVSP8)	mW	Device itself

■ RECOMMENDED OPERATING CONDITIONS

(Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT (unit)	NOTE
Supply Voltage	V_{CC}	4 ~ 14	V	-
Hall Input Voltage Common Mode Voltage	V_{ICM}	1.5 ~ $V_{CC}-2$	V	-
Junction Temperature	T_j	-40 ~ 125	°C	-

■ ELECTRICAL CHARACTERISTICS

($V_{DD}=12V$, $T_a=25^{\circ}C$)

PARAMETER	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Current	I_{CC}	$V_{CC}=12V$	-	3.0	4.0	mA
		$V_{CC}=5V$	-	2.8	3.75	
Hall Input Hysteresis Range	V_{HYS}	-	8	20	32	mV
Hall Amplifier Input Bias Current	I_B	-	-	1.0	-	μA
Output Voltage	V_{OUT}	$I_{OUT}=20mA$	-	$V_{CC}-1.5$	-	V
Output Leak Current	I_{LEAK}	$V_{CC}=14V$	-	1	10	μA
Lock Alarm Output Voltage	V_{LA}	Lock Alarm ON, $I_{LA}=5mA$	-	-	0.5	V
Lock Alarm Leak Current	$I_{LA-LEAK}$	$V_{LA}=14V$	-	1	5	μA
Ct Charge Current	I_{CHG}	$V_{CT}=1.5V$	-	4.0	-	μA
Ct Discharge Current	I_{DCHG}	$V_{CT}=1.5V$	-	0.4	-	μA
Charge / Discharge Current Ratio	I_{CHG} / I_{DCHG}	-	-	10	-	
Ct H-level Cense Voltage	V_{CTH}	-	2.5	2.8	3.1	V
Ct L-level Cense Voltage	V_{CTL}	-	0.6	0.7	0.8	V
Auto Protection Release ON Time	T_{ON}	$Ct=0.47\mu F$	-	0.25	-	s
Auto Protection Release ON Time	T_{OFF}	$Ct=0.47\mu F$	-	2.5	-	s

The specifications on this data book are only given for information, without any guarantee as regards either mistakes or omissions. The application circuit in this data book are described only to show representative usages of the product and not intended for the guarantee or permission of any right including the industrial rights.