DS04-29102-2E

## ASSP

# **BIDIRECTIONAL MOTOR DRIVER**

## MB3763H

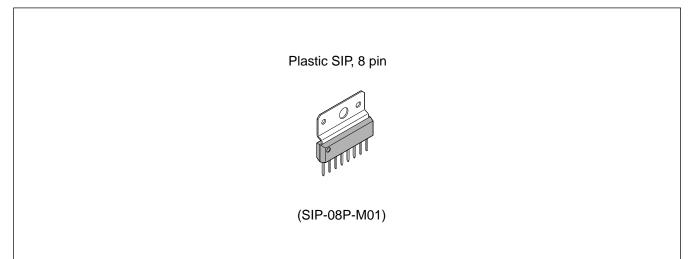
### DESCRIPTION

Fujitsu's MB3763H Motor Driver with forward/reverse control capability, is used in applications such as the frontloading mechanism in video cassette recorder or the auto-reverse tape deck, driven by a TTL signal. The MB3763H has 300 mA drive units and braking capability with TTL control. The MB3736H has wider power supply voltage range comparison with MB3763H. Suitable for 24V monitors for office automation equipments.

#### FEATURES

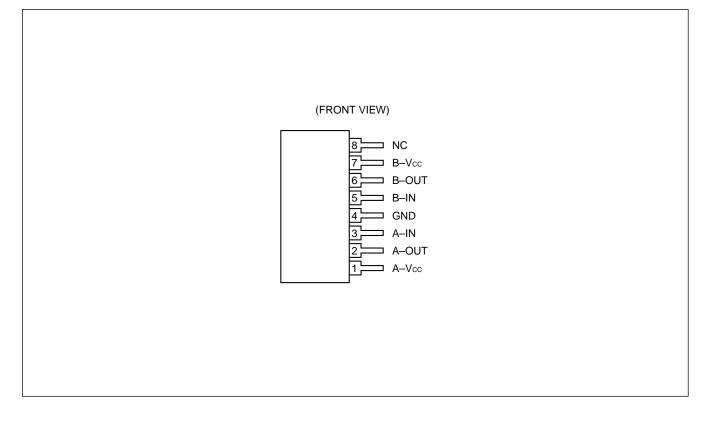
- Motor Drive current: 300 mA maximum
- Wide Power Supply Voltage Range: 4V to 28V
- TTL-control capability
- Standby capability when input is off.
- Brake capability at motor stop mode.
- Built-in diode for surge absorption.
- Package: 8-pin plastic SIP package (Suffix: -PS)

#### PACKAGE

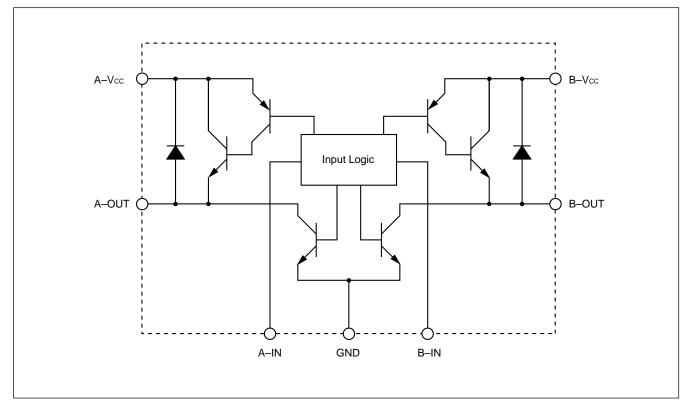


## **MB3763H**

#### ■ PIN ASSIGNMENT



#### BLOCK DIAGRAM



#### ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Value	Unit	
Power Supply Voltage	Vcc	28	V	
Oonput Current	lo	550*1	mA	
Maximum Output Current	Іомах*з	1.2	А	
Power Dissipation	PD	2*2	W	
Operating Temperature	Тс	-20 to +75	°C	
Strage Temperature	Тѕтс	-55 to +125	°C	

Notes: \*1 ton  $\leq$  1 sec, Duty = 50%

\*2 Ta  $\leq$  30°C

\*3 t  $\leq$  5 ms

Permanent device damage may occur if the above Absolute Maximum Ratings are exceeded. Functional operation should be restricted to the conditions as detailed in the operational sections of this data sheet. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

#### ■ RECOMMENDED OPERATING CONDITIONS

Parameter	Symbol Value		Unit
Power Supply Voltage	Vcc 4 to 28		V
Output Current	lo	0 to 300 (500*1)	mA
Input High Voltage	VIH*2	2.4 to Vcc +0.3	V
Input Low Voltage	Vı∟	0 to 0.4	V

Notes: \*1 ton  $\leq$  1 sec, Duty = 50%

\*2 When  $V_{H} \ge V_{CC}$ ,  $I_{H} \le V_{CC} \ge 0.2 \text{ mA}$ 

mΑ

mΑ

mΑ

mΑ

V

V

V

μΑ

μs

#### (Vcc = 24V, lo = 300 mA, Ta = 25°C) Value Symbol Condition Parameter Unit Min Тур Max $V_{CC} = 24V$ , $V_{IA} = V_{IB} = 0V$ Standby Supply Current Icco \_\_\_\_ 0.1 \_\_\_\_ ICC1 lo = 0mA12 27 \_\_\_\_ **Power Supply Current** lo = 300mA \_ ICC2 15 \_\_\_\_ IO = 0mA, VIA = VIB = 2.4VІссз 18 — — Output High Voltage Vон 22.8 23.1 \_\_\_\_ Output Low Voltage Vol 0.2 0.5 \_\_\_\_ \_ **Output Saturation Voltage** VSAT \_\_\_\_ 1.1 1.7 Input Current Ιн VIN = 2.4V250 400 — Input Switching Prohibition Time TOFF 10 \_\_\_\_ \_\_\_\_ \_

#### ■ ELECTRICAL CHARACTERISTICS

#### ■ FUNCTIONAL DESCRIPTIONS

#### FORWARD/REVERSE MODE (MODE B & C)

In this mode, the transistor pairs Q2-Q3 and Q1-Q4 work alternatively, changing the output current direction.

When the mode B is selected, Q2 and Q3 are active and Q1 and Q4 are inactive. Therefore A-OUT is at low level and B-OUT is at high level, with the current flowing from B-OUT to A-OUT through the motor. On the other hand, when the mode C is selected, the current flows in the reverse direction.

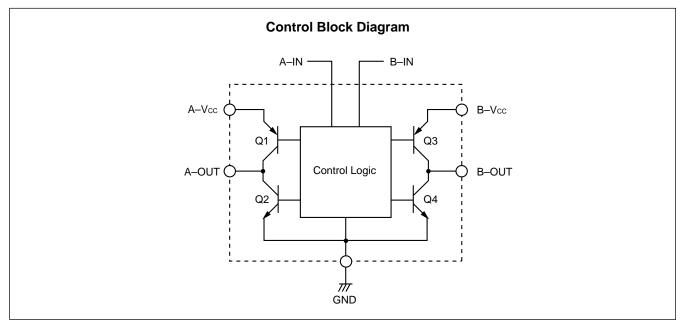
#### **BRAKE/STOP MODE (MODE A)**

When the mode A is selected, Q1 and Q3 are inactive and Q2 and Q4 are active. A-OUT and B-OUT are stuck at low-level; terminal of motor are shorted and the motor is forced to stop.

#### STANDBY MODE (MODE D)

In this mode, all transistors are inactive and the current through the motor does not flow. When the power supply voltage is applied to A-Vcc and B-Vcc, the supply current is still less than or equal to 0.1 mA.

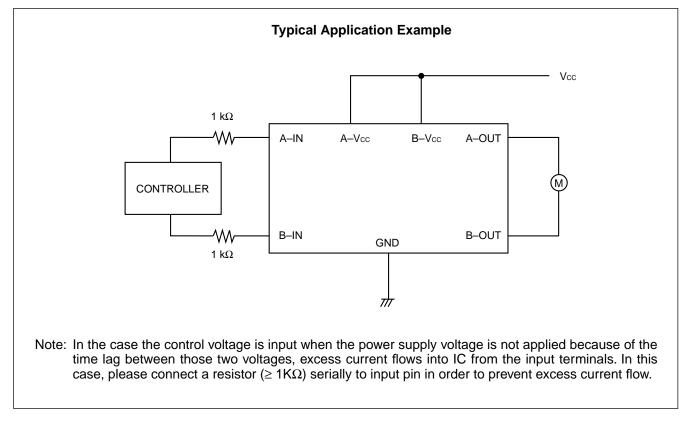
#### CONTROL MODE



Mode –	Input mode		Output mode		Operation
wode	A-IN	B-IN	A-OUT	B-OUT	Operation
A	1	1	L	L	Short (Brake)
В	1	0	L	Н	Forward
С	0	1	Н	L	Reverse
D	0	0			Open (Standby)

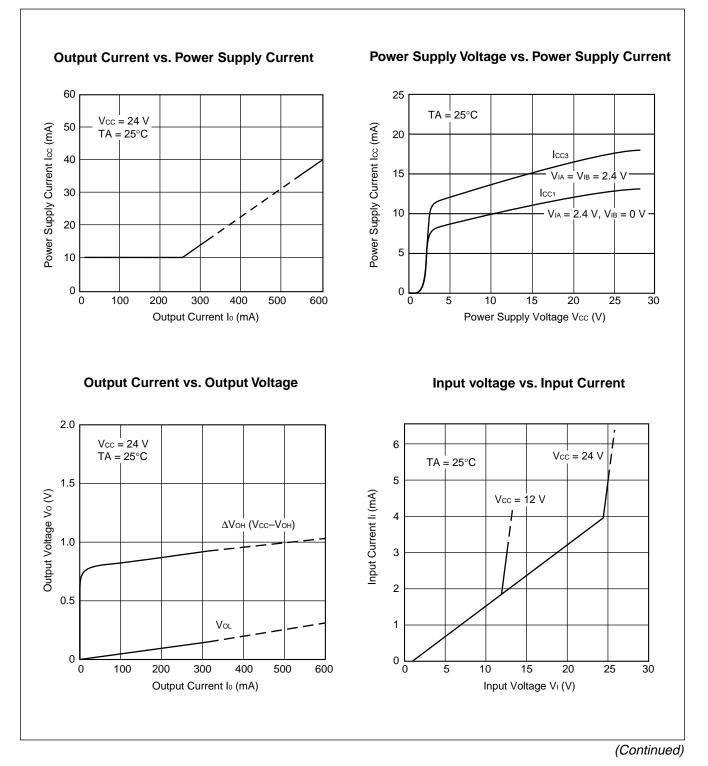
Notes:  $1: \ge 2.4V$  $0: \le 0.4V$ 





## **MB3763H**

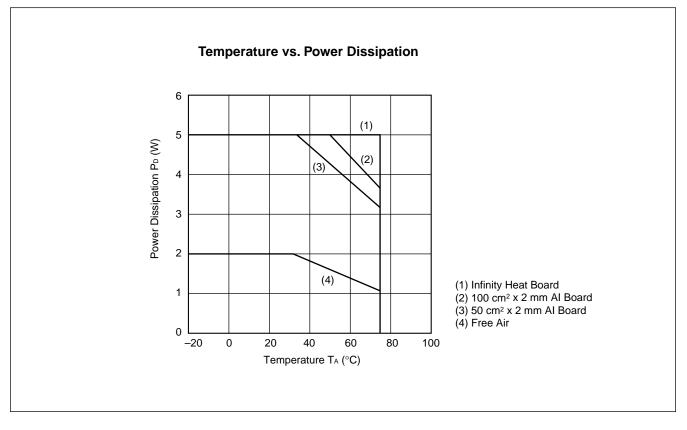
#### ■ TYPICAL PERFORMANCE CHARACTERISTICS



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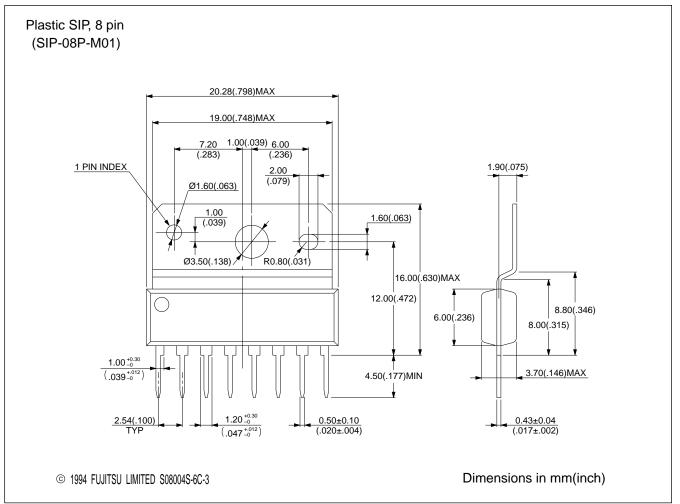
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#### (Continued)



## **MB3763H**

#### PACKAGE DIMENSIONS



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