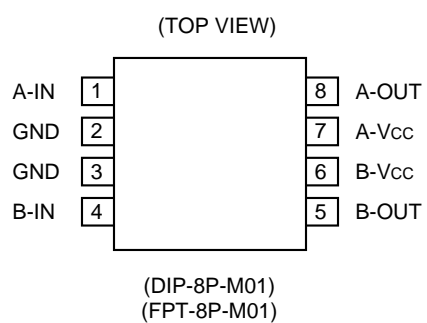
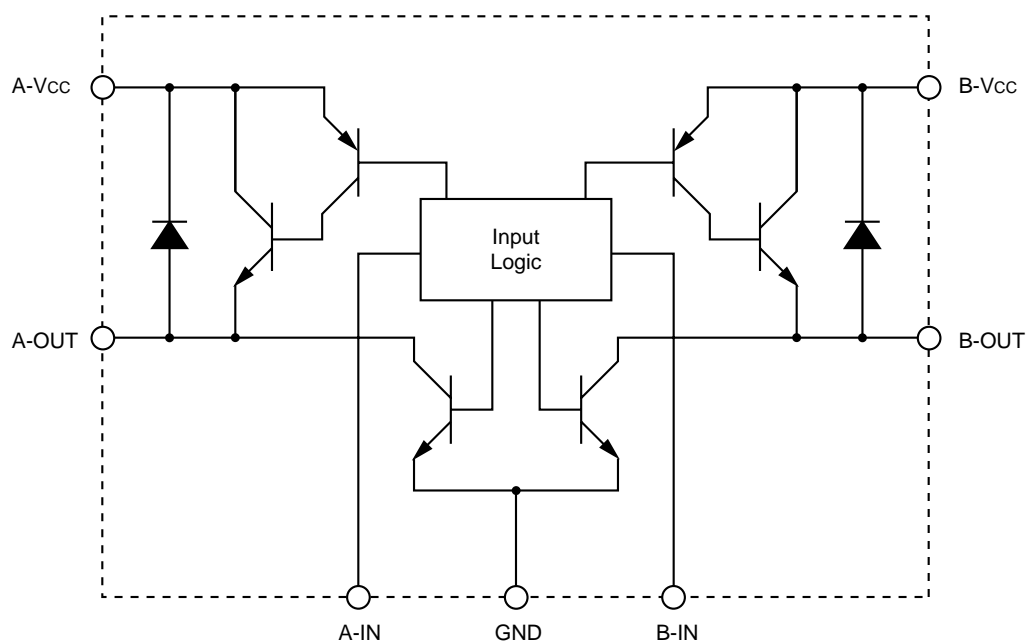


■ PIN ASSIGNMENT



■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATINGS

(Ta = +25°C)

Parameter	Symbol	Rating		Unit
		Min.	Max.	
Power supply voltage	V _{CC}	—	20	V
Output current	I _O	—	180 (330* ¹)	mA
Maximum output current	I _{OMAX} * ³	—	1.2	A
Power Dissipation	P _D	—	560* ²	mW
Operating temperature	T _C	−20	+75	°C
Storage temperature	T _{stg}	−55	+125	°C

*1: t_{ON} ≤ 1 s, Duty = 50%

*2: Ta ≤ 60°C

*3: t ≤ 5 ms

WARNING: Semiconductor devices can be permanently damaged by application of stress (voltage, current, temperature, etc.) in excess of absolute maximum ratings. Do not exceed these ratings.

■ RECOMMENDED OPERATING CONDITIONS

Parameter	Symbol	Value		Unit
		Min.	Max.	
Power supply voltage	V _{CC}	4	18	V
Output current	I _O	0	150 (300* ¹)	mA
Input high voltage	V _{IH} * ²	2.4	V _{CC} + 0.3	V
Input low voltage	V _{IL}	0	0.4	V

*1: t_{ON} ≤ 1 s, Duty = 50%

*2: When V_{IH} ≥ V_{CC}, I_{IH} ≤ V_{CC} × 0.2 mA

WARNING: The recommended operating conditions are required in order to ensure the normal operation of the semiconductor device. All of the device's electrical characteristics are warranted when the device is operated within these ranges.

Always use semiconductor devices within their recommended operating condition ranges. Operation outside these ranges may adversely affect reliability and could result in device failure.

No warranty is made with respect to uses, operating conditions, or combinations not represented on the data sheet. Users considering application outside the listed conditions are advised to contact their representatives beforehand.

■ ELECTRICAL CHARACTERISTICS

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

Parameter	Symbol	Condition	Value			Unit
			Min.	Typ.	Max.	
Standby supply current	I_{CC0}	$V_{CC} = 18\text{ V}$, $V_{IA} = V_{IB} = 0\text{ V}$	—	—	1.0	mA
Power supply current	I_{CC1}	$I_o = 0\text{ mA}$	—	10	20	mA
	I_{CC2}	$I_o = 150\text{ mA}$	—	10	—	mA
		$I_o = 300\text{ mA}$	—	15	—	mA
	I_{CC3}	$I_o = 0\text{ mA}$, $V_{IA} = V_{IB} = 2.4\text{ V}$	—	15	—	mA
Output high voltage	V_{OH}	$I_o = 150\text{ mA}$	11.0	11.2	—	V
		$I_o = 300\text{ mA}$	10.8	11.1	—	V
Output low voltage	V_{OL}	$I_o = 150\text{ mA}$	—	0.1	0.2	V
		$I_o = 300\text{ mA}$	—	0.2	0.5	V
Output saturation voltage	V_{SAT}	$I_o = 150\text{ mA}$	—	0.9	1.2	V
		$I_o = 300\text{ mA}$	—	1.1	1.7	V
Input current	I_{IH}	$V_{IN} = 2.4\text{ V}$	—	250	400	μA
Input switching prohibition time	T_{OFF}	—	10	—	—	μs

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.

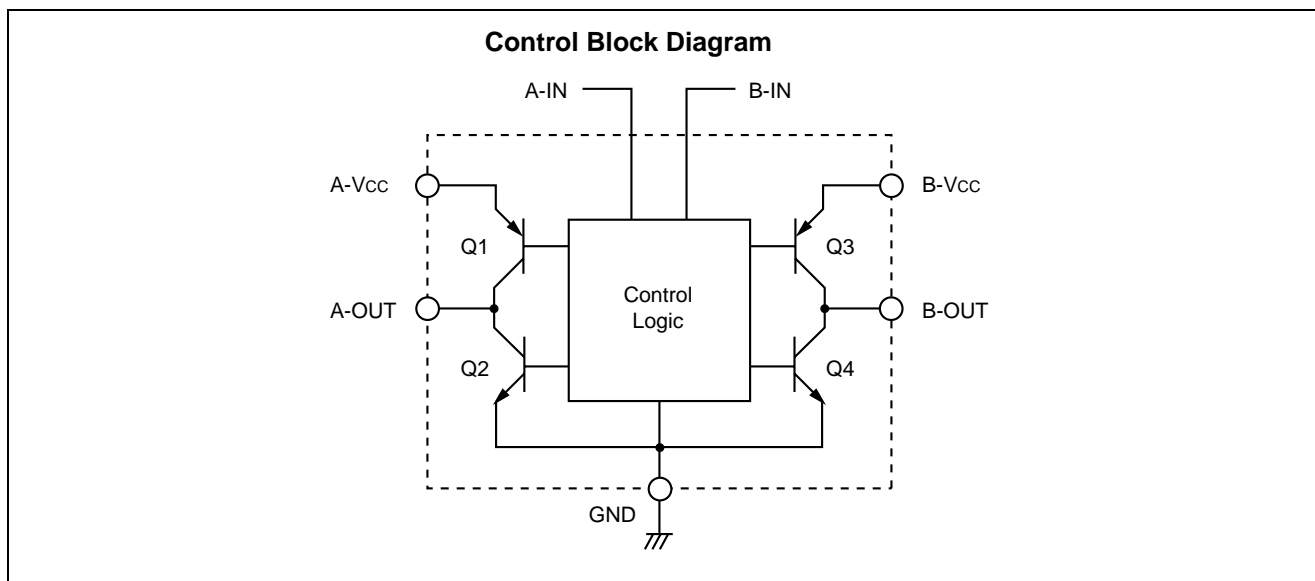
BRAKE/STOP MODE (MODE A)

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; terminals 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 1 mA.

CONTROL MODE

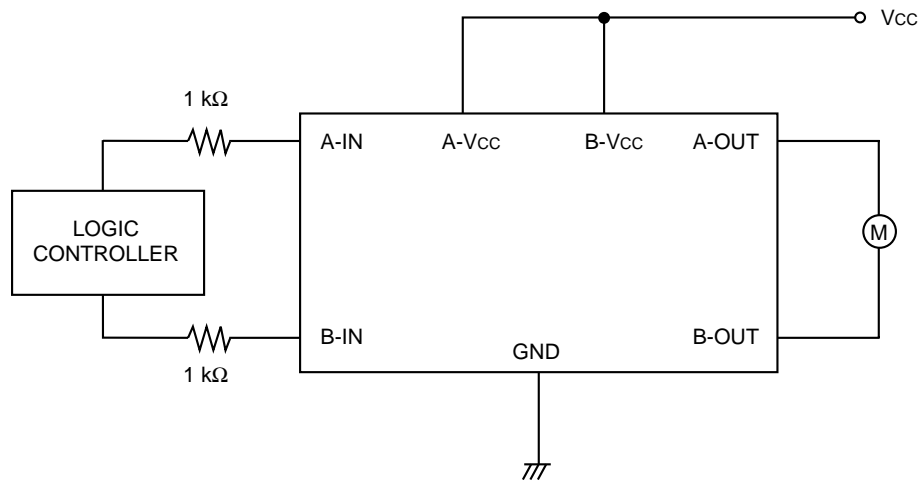


Mode	Input mode		Output mode		Operation
	A-IN	B-IN	A-OUT	B-OUT	
A	1	1	L	L	short (Brake)
B	1	0	L	H	Forward
C	0	1	H	L	Reverse
D	0	0	—	—	Open (Standby)

Notes: 1: $\geq 2.4V$
0: $\leq 0.4V$

■ TYPICAL APPLICATION

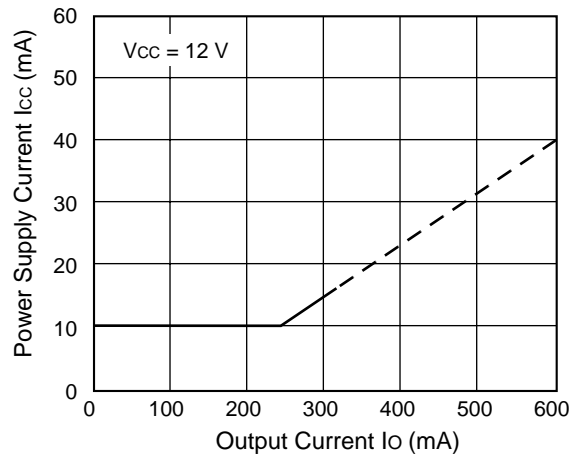
Typical Application Example



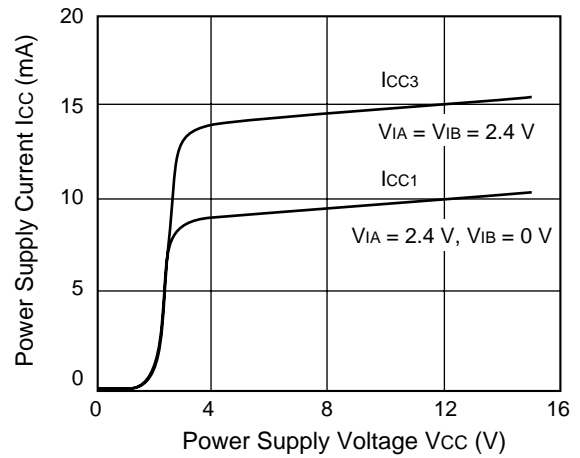
Note: In the case the control voltage is input when the power supply voltage is not applied because of the time lag between those two voltages, excess current flows into IC from the input terminals. In this case, please connect a resistor ($\geq 1 \text{ k}\Omega$) serially to input pin in order to prevent excess current flow.

■ TYPICAL PERFORMANCE CHARACTERISTICS

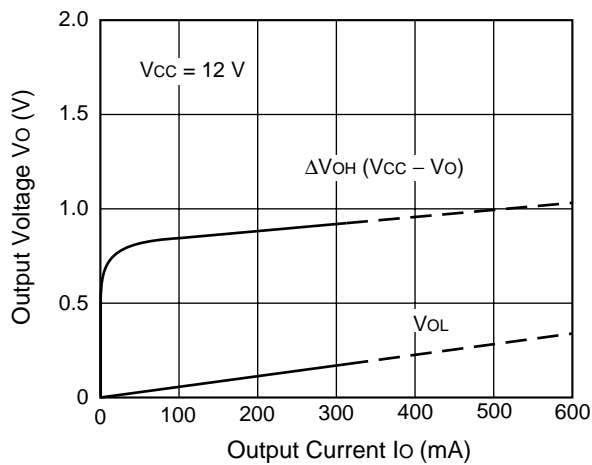
**Output Current vs.
Power Supply Current**



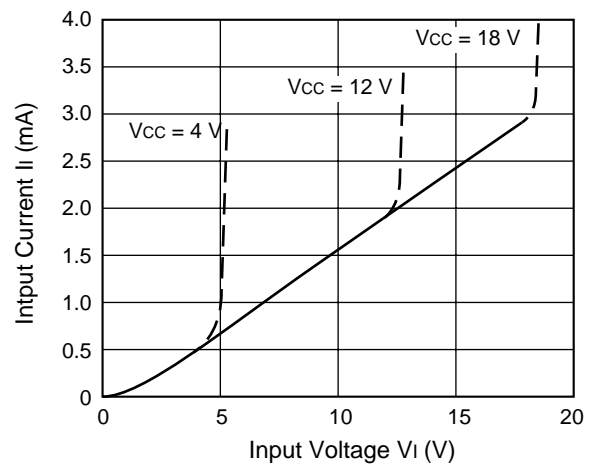
**Power Supply Voltage vs.
Power Supply Current**



**Output Current vs.
Output Voltage**



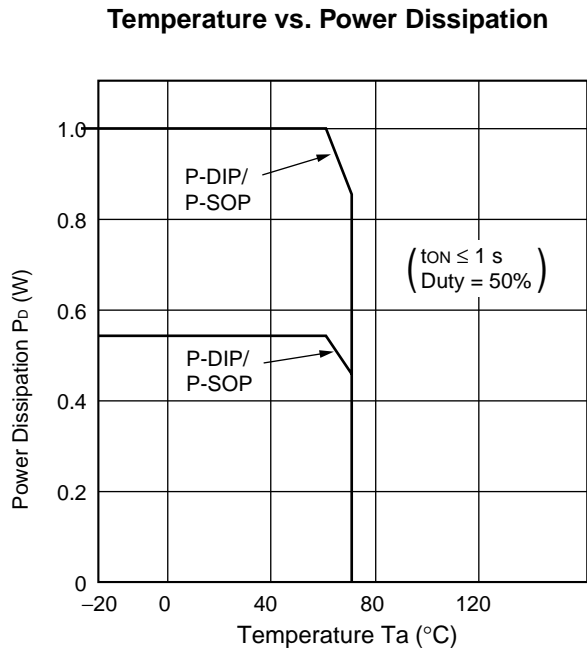
**Input Voltage vs.
Input Current**



(Continued)

MB3763

(Continued)



P-SOP's value is measured on the ceramic board
(3.0 cm x 3.0 cm x 0.05 cm)

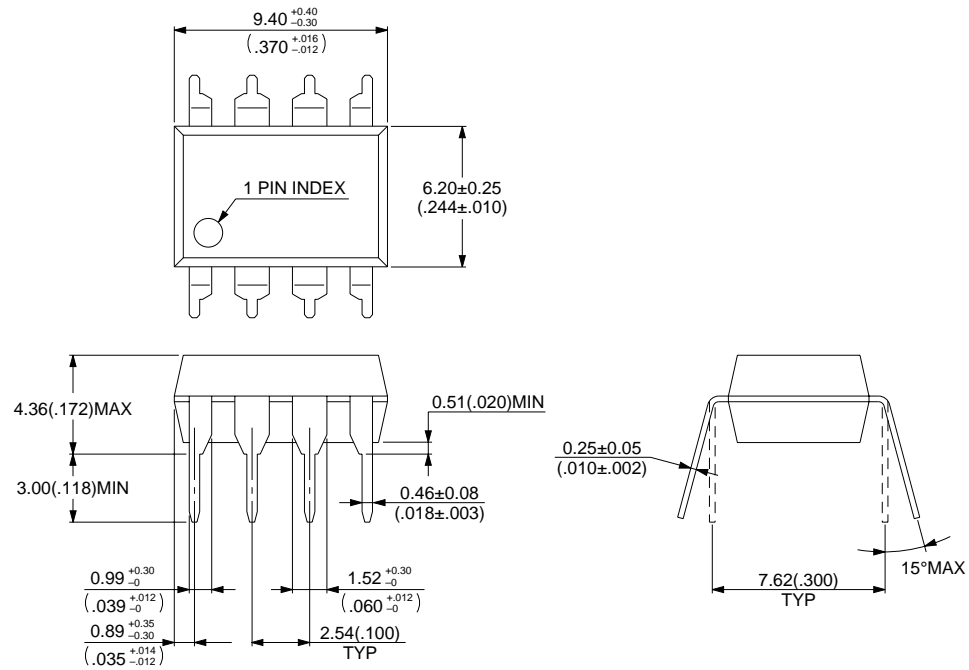
Maximum power dissipation must be kept.

■ ORDERING INFORMATION

Part number	Package	Remarks
MB3763	8-pin plastic DIP (DIP-8P-M01)	
MB3763PF	8-pin plastic SOP (FPT-8P-M01)	

■ PACKAGE DIMENSIONS

8-pin plastic DIP
(DIP-8P-M01)



Dimensions in mm (inches)

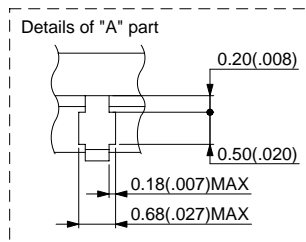
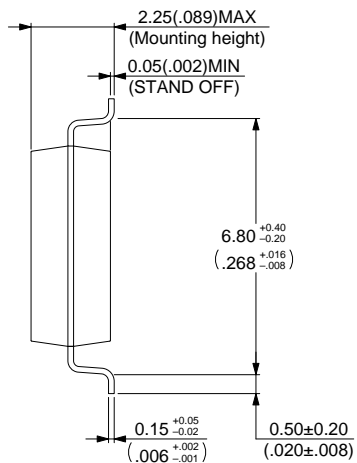
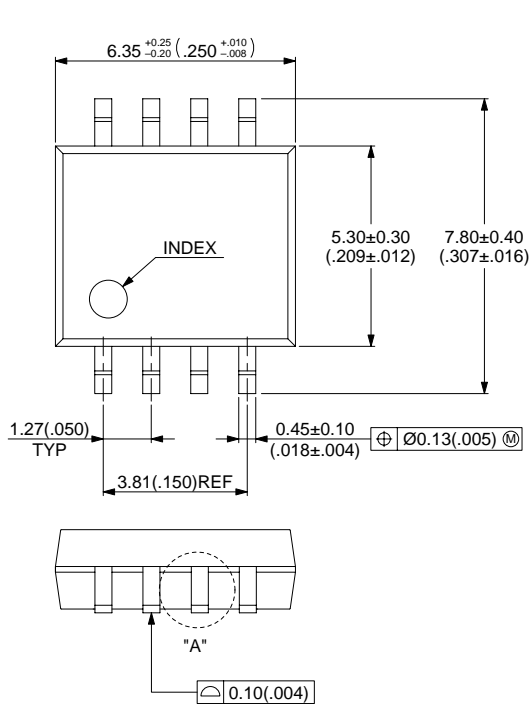
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(Continued)

MB3763

(Continued)

8-pin plastic SOP
(FPT-8P-M01)



Dimensions in mm (inches)

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MEMO

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