



# LB8620M

## Low-voltage/Low-saturation Bidirectional Motor Driver

### Overview

The LB8620M is a low-voltage, low-saturation, two motor driver with a bidirectional braking function that provides constant-voltage regulated output for bidirectional operation.

The design of the LB8620M is ideal for video equipment, cameras, and other portable equipment.

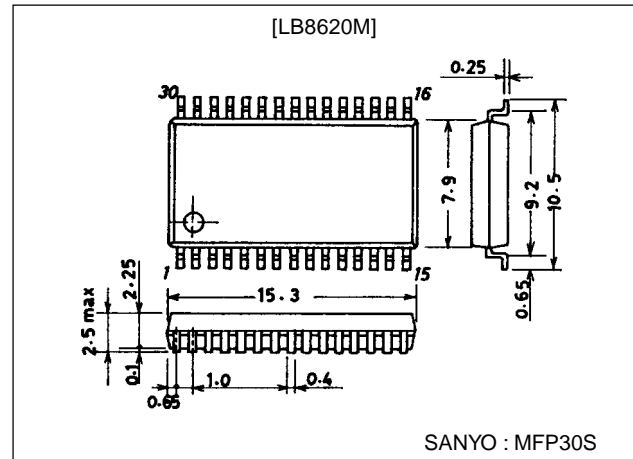
### Features

- Wide operating voltage range : 4.5V to 7V.  
: 3.0V to 7V (unregulated).
- Low saturation voltage.  
 $V_{sat}=1V$  at  $I_O=1A$  (typ).
- Consumes almost no current in standby mode.  
(0.1 $\mu$ A or less).
- Brake function built in.
- Permits setting of bidirectional constant-voltage regulated value. Four independently adjustable.
- Spark killer diodes built in.

### Package Dimensions

unit:mm

#### 3073A-MFP30S



### Specifications

#### Absolute Maximum Ratings at $T_a = 25^\circ C$

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	$V_{CC}$ max		8	V
Output current	$I_m$ max		1.5	A
Applied input voltage	$V_{IN}$		-0.3 to +8	V
Allowable power dissipation	$P_d$ max		1.0	W
Operating temperature	$T_{opr}$		-20 to +80	$^\circ C$
Storage temperature	$T_{stg}$		-40 to +125	$^\circ C$

#### Allowable Operating Conditions at $T_a = 25^\circ C$

Parameter	Symbol	Conditions	Ratings	Unit
Supply voltage	$V_{CC}$	( ) : unregulated value	(3.0)4.5 to 7.0	V
Input high-level voltage	$V_{IH}$		2.0 to 7.0	V
Input low-level voltage	$V_{IL}$		-0.3 to +0.3	V

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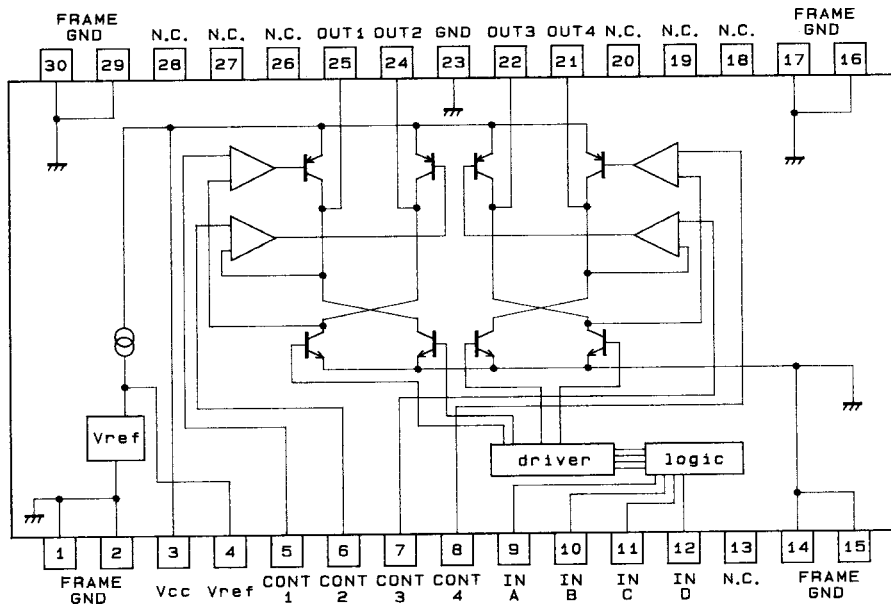
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## Electrical Characteristics at Ta = 25°C

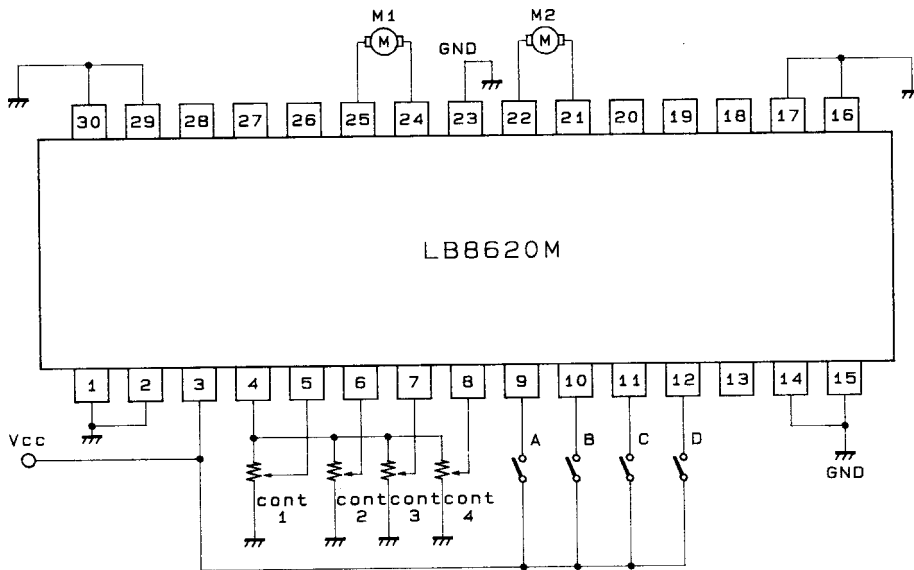
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Supply current	$I_{CC0}$	During standby		0.5	10	$\mu A$
	$I_{CC1}$	During bidirectional operation OUT1 to OUT4 open		45		mA
	$I_{CC2}$	During braking OUT1 to OUT4 open		75		mA
Output saturation voltage	$V_{sat1}$	$I_O=200mA$		0.2	0.3	V
	$V_{sat2}$	$I_O=500mA$		0.5	0.75	V
	$V_{sat3}$	$I_O=1000mA$		1.0	1.5	V
Reference voltage	$V_{ref}$	$I_{ref}=1mA$	3.1	3.3	3.5	V
Output voltage voltage characteristics	$\frac{\Delta V_O}{V_O} / \Delta V_{CC}$	$V_O=4V, V_{CC}=4.5 \text{ to } 7V, I_O=100mA$		0.5		%/V
Output voltage current characteristics	$\frac{\Delta V_O}{V_O} / \Delta I_{CC}$	$V_O=4V, V_{CC}=6V, I_O=30 \text{ to } 500mA$		-0.005		%/mA

## Equivalent Circuit Block Diagram and Pin Assignment



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## Test Circuit



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**Truth Table**

Input				Mode	Remarks
A	B	C	D		
L	H	L	L	M1 Forward	constant-voltage
L	H	H	L	M1 Forward	high-speed
H	L	L	L	M1 Reverse	constant-voltage
H	L	H	L	M1 Reverse	high-speed
H	H	-	L	M1 Brake	
L	H	L	H	M2 Forward	constant-voltage
L	H	H	H	M2 Forward	high-speed
H	L	L	H	M2 Reverse	constant-voltage
H	L	H	H	M2 Reverse	high-speed
H	H	-	H	M2 Brake	
L	L	-	L	OFF	I <sub>CC</sub> ≤10μA

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