Ordering number:EN3986

Monolithic Digital IC

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

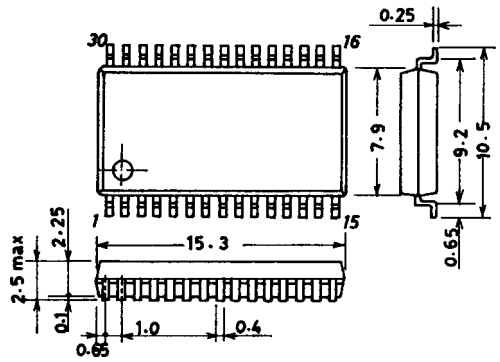
- Wide operating voltage range : 4.5V to 7V.
  : 3.0V to 7V (unregulated).
- Low saturation voltage.
  V_{sat}=1V at I_O=1A (typ).
- Consumes almost no current in standby mode.
  (0.1μA or less).
- Brake function built in.
- Permits setting of bidirectional constant-voltage regulated value. Four independently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

Package Dimensions

unit:mm

3073A-MFP30S

[LB8620M]



SANYO : MFP30S

Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V_{CC} max		8	V
Output current	I_m max		1.5	A
Applied input votlage	V_{IN}		–0.3 to +8	V
Allowable power dissipation	Pd max		1.0	W
Operating temperature	Topr		–20 to +80	˚C
Storage temperature	Tstg		–40 to +125	˚C

Allowable Operating Conditions at Ta = 25˚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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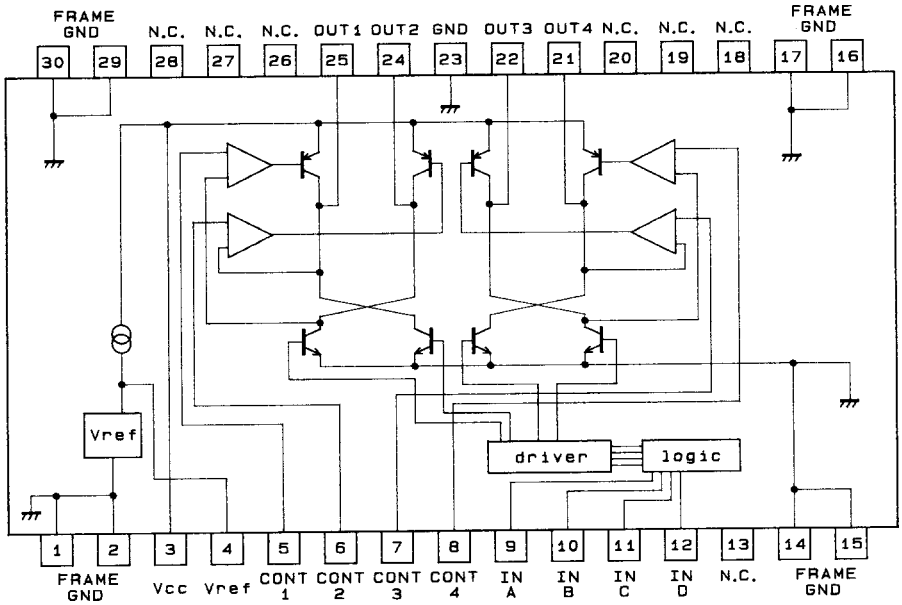
Electrical Characteristics at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Supply current	$I_{CC}0$	During standby		0.5	10	μA
	$I_{CC}1$	Duting bidirectional operation OUT1 to OUT4 open		45		mA
	$I_{CC}2$	During braking OUT1 to OUT4 open		75		mA
Output saturation voltage	Vsat1	I_O=200mA		0.2	0.3	V
	Vsat2	I_O=500mA		0.5	0.75	V
	Vsat3	I_O=1000mA		1.0	1.5	V
Reference voltage	Vref	Iref=1mA	3.1	3.3	3.5	V
Output voltage votlage characteristics	$\frac{\Delta V_O}{V_O}/\Delta V_{CC}$	V_O=4V, V_{CC}=4.5 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 to 500mA		–0.005		%/mA

Equivalent Circuit Block Diagram and Pin Assignment



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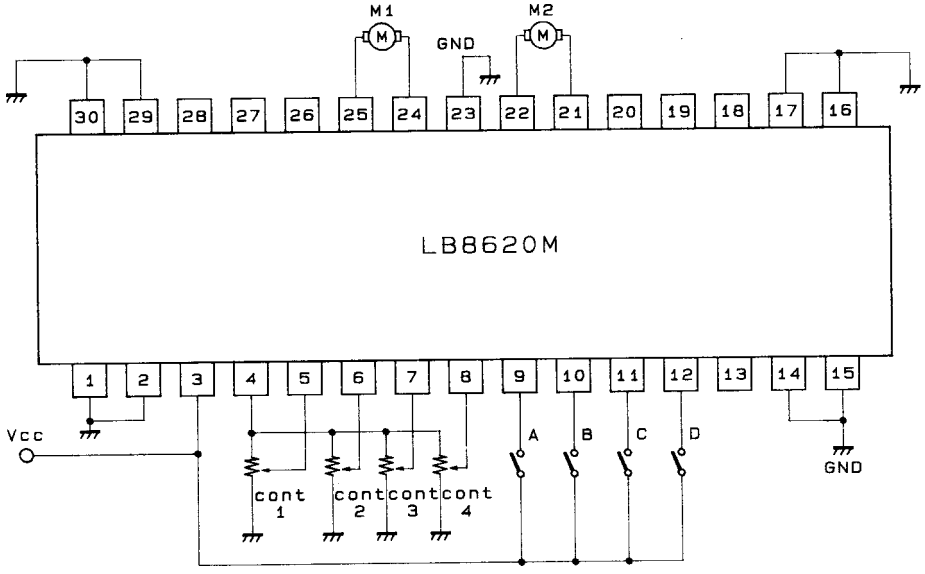
Test Circuit



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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	$I_{CC} \leq 10\mu A$

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