



LB1834M

Low-Saturation Bidirectional Motor Driver for Low-Voltage Applications

Overview

The LB1834M is a low-saturation bidirectional motor driver IC (with brake function) for use in low-voltage applications. It is especially suited for use in portable equipment such as VCR, camera, radio cassette recorder.

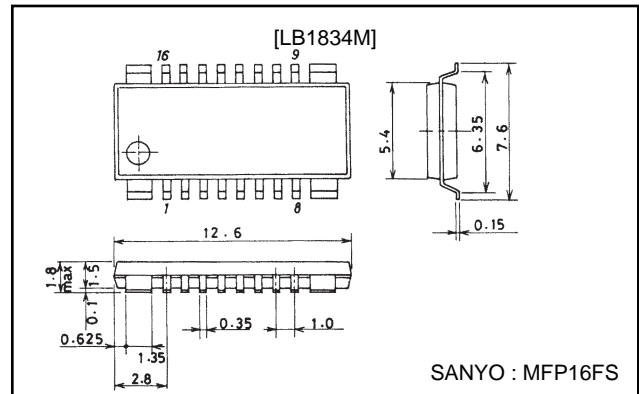
Features

- 2 motors drivable due to on-chip 1.5ch bridge driver of $I_O=1.0A$ drive current.
- Capable of being operated from low voltage (2.5V min).
- Low saturation voltage.
- Low current dissipation at standby mode.
- Logic power supply and motor power supply are separate.
- Brake function (Pins OUT1, OUT2 provide BS terminal for forced brake by external transistors).
- On-chip spark killer diodes.
- Compact package (MFP-16FS).

Package Dimensions

unit: mm

3097-MFP16FS



Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V_{CC}/V_S max		-0.3 to +8.0	V
Output supply voltage	V_{OUT}		-0.3 to V_S+V_{SF}	V
Input supply voltage	V_{IN}		-0.3 to +8.0	V
GND pin flow-out current	I_{GND}		2	A
Allowable power dissipation	Pd 1	IC only	900	mW
	Pd 2	Mounted on specified board ($40 \times 30 \times 1.5 \text{mm}^3$ glass epoxy)	1350	mW
Operating temperature	T_{opr}		-20 to +75	$^\circ C$
Storage temperature	T_{stg}		-40 to +125	$^\circ C$

Allowable Operating Condition at $T_a=25^\circ C$

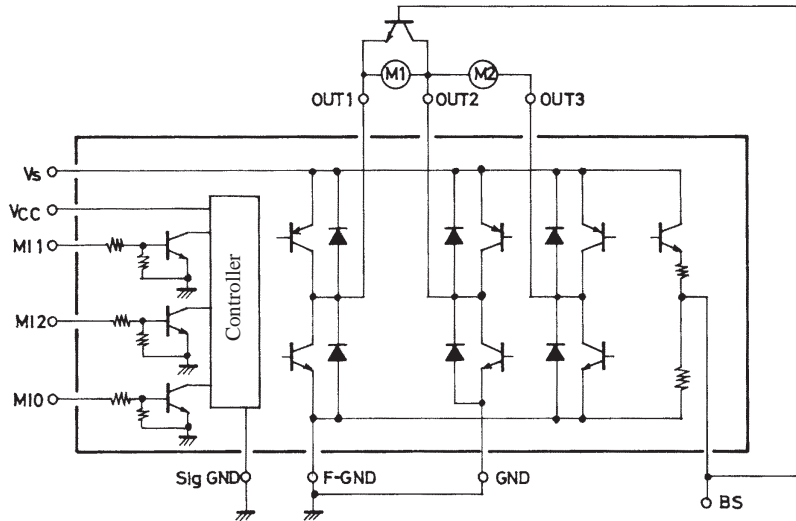
Parameter	Symbol	Conditions	Ratings	Unit
Supply voltage	V_{CC}		2.5 to 7.0	V
	V_S		2.2 to 7.0	V
Input high level voltage	V_{IH}		2.0 to 7.0	V
Input low level voltage	V_{IL}		-0.3 to +0.7	V

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Electrical Characteristics at $T_a=25^\circ\text{C}$, $V_{CC}=V_S=3\text{V}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Supply current	I_{CC0}	Standby $I_{CC}+I_S$		0.1	10	μA
	I_{CC1}	Forward/reverse $I_{CC}+I_S$		30	40	mA
	I_{CC2}	Brake $I_{CC}+I_S$		30	45	mA
Output saturation voltage (upper+lower)	$V_O(\text{sat})$	$I_{OUT}=500\text{mA}$		0.45	0.7	V
(each channel)	$V_O(\text{sat})$	$I_{OUT}=1\text{A}$ ($V_{CC}=V_S=3.5\text{V}$)		0.95	1.4	V
Output supply voltage variation		$I_O=500\text{mA}$	-20	0	+20	%
Output sustain voltage	$V_O(\text{sus})$	$I_{OUT}=1\text{A}$	9			V
Input current	I_{IN}	$V_{IN}=2\text{V}$, $V_{CC}=7\text{V}$			100	μA
[Spark killer diode]						
Reverse current	$I_S(\text{leak})$	V_{CC} , $V_S=7\text{V}$			10	μA
Forward current	V_{SF}	$I_{OUT}=1\text{A}$			1.7	V

Block Diagram



Note) Use one of the FRAME-GND pins for grounding. When the Cu-foiled side is soldered, heat radiation can be more improved.

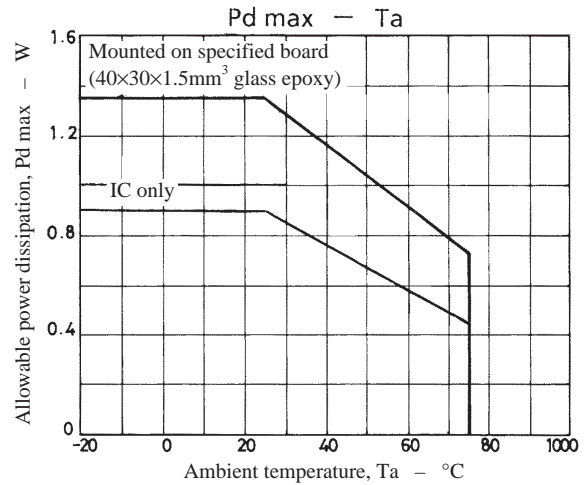
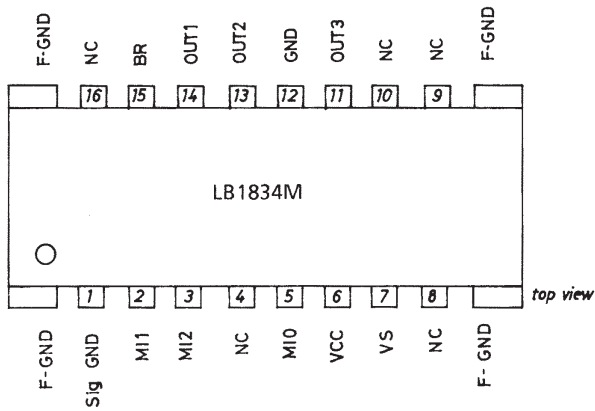
Truth Table

Bland : OFF

Input			Output				Mode
MI 0	MI 1	MI 1	OUT 1	OUT 2	OUT 3	BS 1/2	
L	L	L					Standby
H	L	L					
L	H	L	H	L			ch1
L	L	H	L	H			
L	H	H	L	L		H	
H	H	L		L	H		ch2
H	L	H		H	L		
H	H	H		L	L		

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Pin Assignment



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