

SANYO

No.3545A

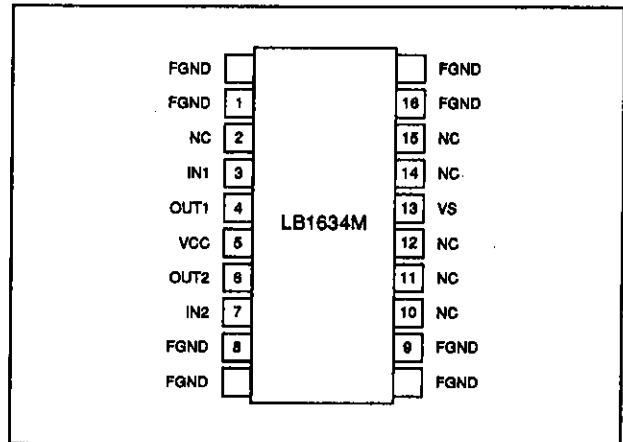
LB1634M**Low-voltage, Low-saturation
Forward/Reverse Motor Driver****OVERVIEW**

The LB1634M is a low-voltage, low-saturation forward/reverse motor driver. The output saturation voltage is a low 1.4 V for a 1 A output current, making it ideal for use in portable electronic equipment where maximum battery efficiency is required. The LB1634M also features a very low standby-current consumption of 10 μ A or lower.

The LB1634M operates from a 2.5 to 7 V supply and is available in 16-pin MFPs.

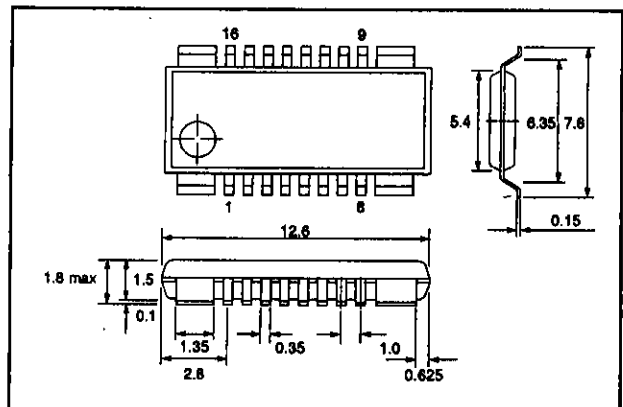
FEATURES

- Low-voltage operation
- Low-saturation voltage
- Device current and motor current separation
- On-chip brake function
- On-chip spark-suppressor diode
- 2.5 to 7 V supply
- 16-pin MFP

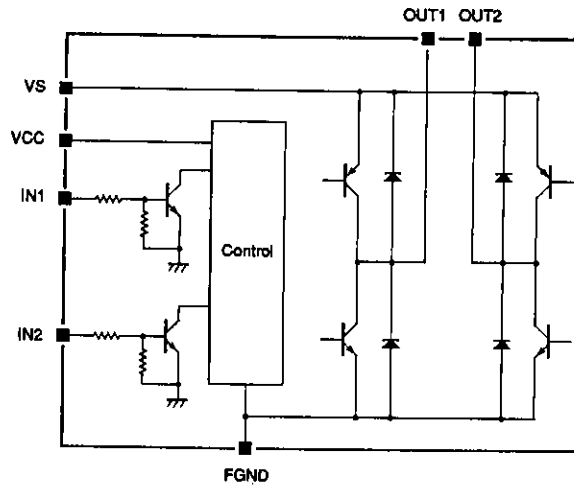
PINOUT**PACKAGE DIMENSIONS**

Unit: mm

3097-MFP16FS



SCHEMATIC DIAGRAM



PIN DESCRIPTION

Number	Name	Description
1, 8, 9, 16	FGND	Frame ground
2, 12 to 15	NC	No connection
3, 7	IN1, IN2	Data inputs
4, 6	OUT1, OUT2	Motor driver outputs
5	VCC	Supply voltage
13	VS	Motor supply voltage

SPECIFICATIONS

Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
Supply voltage range	V_{CC} max	-0.3 to 8.0	V
	V_S max	-0.3 to 8.0	V
Output voltage range	V_{OUT}	-0.3 to $V_S + V_{SF}$	V
Input voltage range	V_{IN}	-0.3 to 8.0	V
GND current	I_{GND}	2	A
Power dissipation	P_D	900	mW
		1200. See note.	
Operating temperature range	T_{opr}	-20 to 75	deg. C
Storage temperature range	T_{stg}	-40 to 125	deg. C

Note

Mounted on a 20 mm × 30 mm × 1.5 mm circuit board

Recommended Operating Conditions

$T_a = 25 \text{ deg. C}$

Parameter	Symbol	Rating	Unit
Supply voltage range	V_{CC}	2.5 to 7.0	V
	V_S	2.2 to 7.0	V
LOW-level input voltage	V_{IH}	-0.3 to 0.7	V
HIGH-level input voltage	V_{IL}	2.0 to 7.0	V

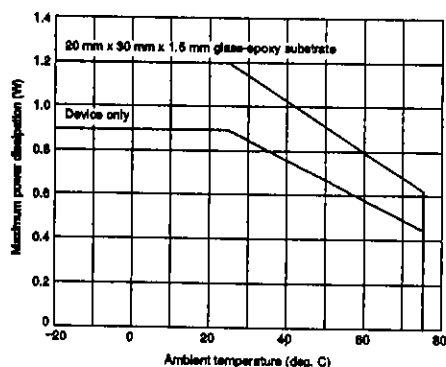
Electrical Characteristics

$V_{CC} = V_S = 3 \text{ V}$, $T_a = 25 \text{ deg. C}$ unless otherwise noted

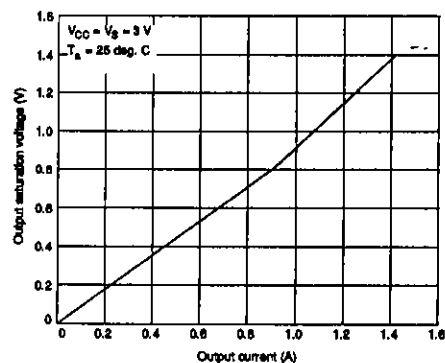
Parameter	Symbol	Condition	Rating			Unit
			min	typ	max	
Supply current	I_{CC}	$V_{IN1} = V_{IN2} = 0 \text{ V}$	-	0.1	10	μA
		$V_{IN1} = 3 \text{ V}$, $V_{IN2} = 0 \text{ V}$	-	-	30	mA
		$V_{IN1} = V_{IN2} = 3 \text{ V}$	-	-	60	
Output saturation voltage (upper and lower limits)	V_{OUT}	$I_{OUT} = 500 \text{ mA}$	-	0.45	0.7	V
		$I_{OUT} = 1 \text{ A}$	-	0.9	1.4	
Output voltage tolerance	ΔV_{OUT}	$I_O = 500 \text{ mA}$	-20	0	20	%
Output sustain current	$V_O \text{ (sus)}$	$I_{OUT} = 1 \text{ A}$	9	-	-	V
Input current	I_{IN}	$V_{IN} = V_{CC} = 7 \text{ V}$	-	-	0.5	mA
Reverse leakage current	$I_S \text{ (leak)}$	$V_{CC} = V_S = 7 \text{ V}$	-	-	10	μA
Forward voltage	V_{SF}	$I_{OUT} = 1 \text{ V}$	-	-	1.7	V

Typical Performance Characteristics

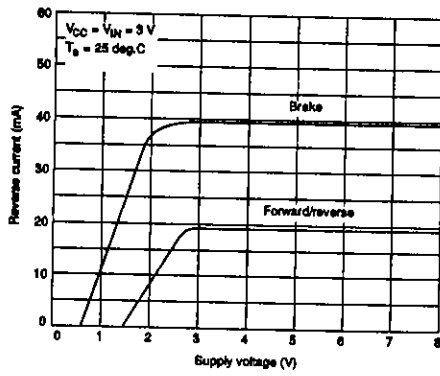
Power dissipation vs. ambient temperature



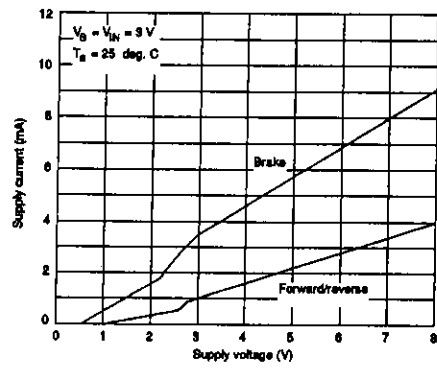
Saturation voltage vs. output current



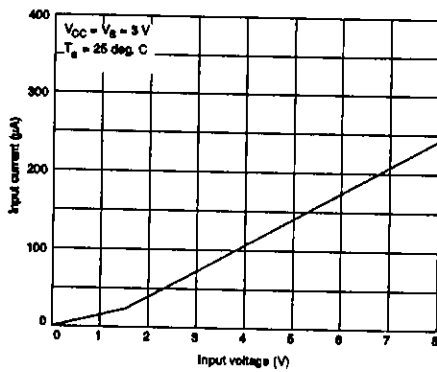
Reverse current vs. supply voltage



Supply current vs. supply voltage



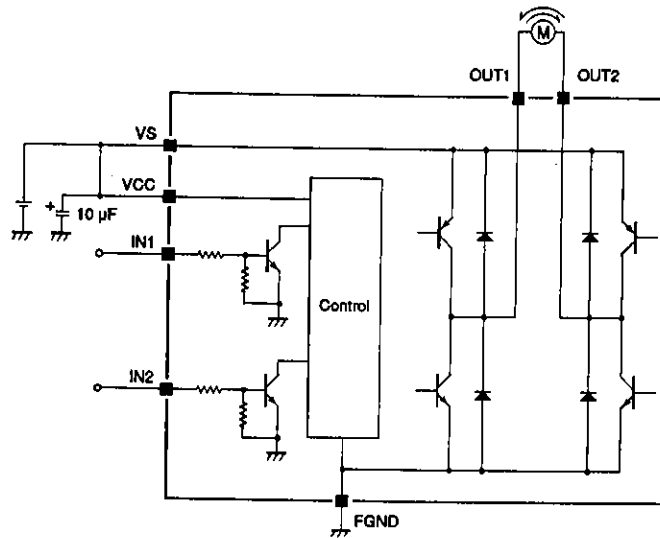
Input current vs. Input voltage



MODE SELECTION

IN1	IN2	OUT1	OUT2	Mode
H	L	H	L	Forward
L	H	L	H	Reverse
H	H	L	L	Brake
L	L	OFF	OFF	Standby

TYPICAL APPLICATION

**Note**

Any of the FGND pins can be connected to ground. Heat transfer precautions should be taken to avoid damaging the LB1634M.

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