



LB1855NM

3-Phase Brushless Motor Driver

Overview

The LB1855NM is a 3-phase brushless motor driver IC that is optimal for VCR drum motor drive.

Features

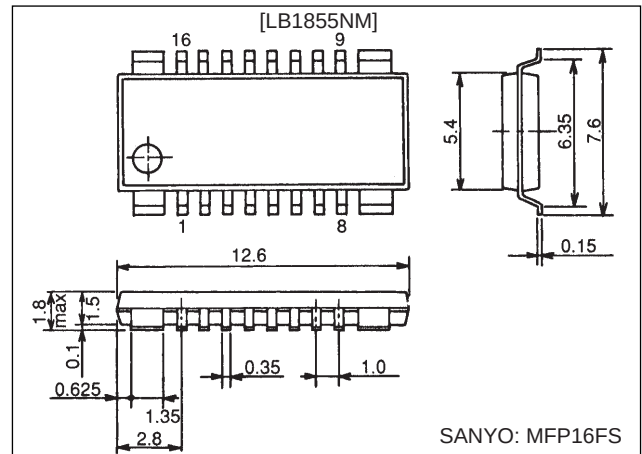
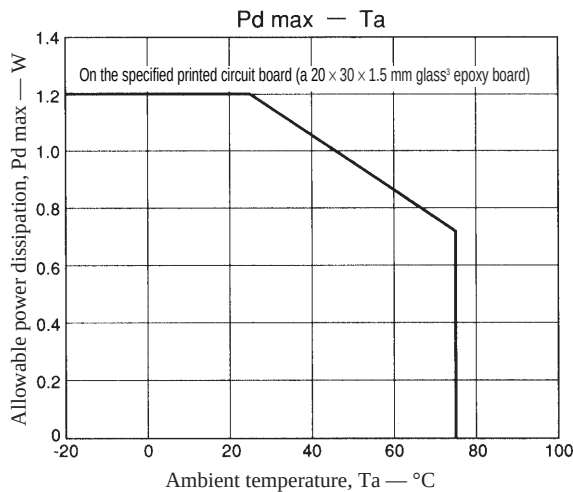
- Current linear drive
- No output electrolytic capacitors required.

- Current limiter circuit built in
- AGC circuit built in
- Thermal shutdown circuit built in

Package Dimensions

unit: mm

3097-MFP16FS



Specifications

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Maximum supply voltage	V _{CC} max		20	V
Maximum output current	I _O max		1.2	A
Allowable power dissipation	Pd max	On the specified printed circuit board (a 20 × 30 × 1.5 mm ³ glass epoxy board)	1.2	W
Operating temperature	T _{opr}		-20 to +75	°C
Storage temperature	T _{stg}		-55 to +150	°C

Allowable Operating Ranges at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Supply current	V _{CC}		7 to 18	V
Hall input amplitude	V _{HALL}	Between the Hall inputs	70 to 300	mVp-p

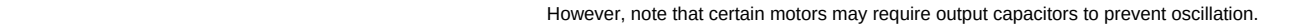
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Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Supply current	I_{CC}	$V_C = GND$			8	mA
Reference voltage	V_{REF}	$I_R = 8\text{ mA}$	6.0	6.3	6.6	V
[Saturation voltage]						
Upper side	V_{sat1}	$I_O = 1\text{ A}$		1.5	1.9	V
Lower side	V_{sat2}	$I_O = 1\text{ A}$		0.8	1.2	V
[Leakage current]						
Upper side	I_{OL1}	$V_{CC} = 18\text{ V}$			50	μA
Lower side	I_{OL2}	$V_{CC} = 18\text{ V}$			50	μA
[Hall Amplifier]						
Input offset voltage	V_{HO}	*	-10		+10	mV
Common-mode input voltage range	V_{HCM}		2.2		$V_{CC} - 0.7$	V
[Control Amplifier]						
Control reference voltage	V_{REF1}	(the V_{CREF} pin voltage) $\times 23/16$	2.1	2.3	2.5	V
Control Gm	V_G	$R_f = 1\Omega$		1		A/V
Input current	I_{IN}				10	μA
[Thermal Shutdown Circuit]						
Operating temperature	T_{TSD}	*		180		$^{\circ}\text{C}$
Hysteresis	ΔT_{TSD}	*		15		$^{\circ}\text{C}$



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Pin No.	Pin	Pin voltage (V)	Pin description	Equivalent circuit
7	AGC		AGC pin The Hall amplifier gain can be controlled according to the amplitude of the Hall input by inserting a capacitor between this pin and ground.	
8	V _{REF}		Internal reference voltage. About 6.3 V.	
9 10 11 12 13 14	U _{IN1} U _{IN2} V _{IN1} V _{IN2} W _{IN1} W _{IN2}	2.2 to V _{CC} – 0.7	Hall element inputs pin	
15 16	V _{CREF} V _C	0 to 5	Speed control pin This IC adopts a current control type in which the output current is controlled by the pin 16 voltage. The control start voltage changes about 1.3 to 1.4 V if pin 15 is connected to ground.	

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