

LB1830MC

Allowable Operating Ranges at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Supply voltage	V_{CC}, V_S		3.0 to 9.0	V
Input high level voltage	V_{IH}		2.0 to 9.0	V
Input low level voltage	V_{IL}		-0.3 to +0.3	V
Control voltage	V_C		1.0 to 6.0	V

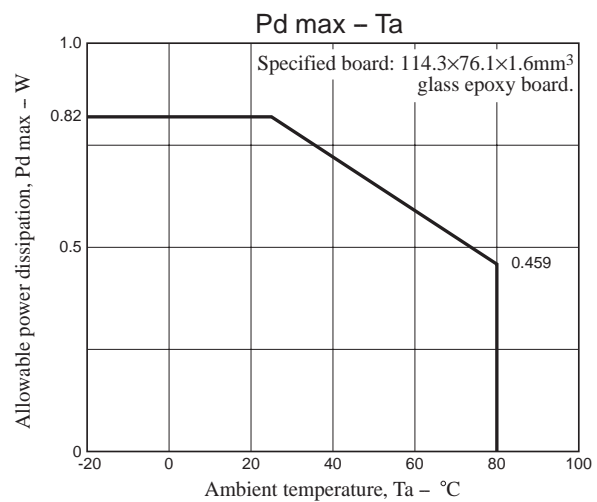
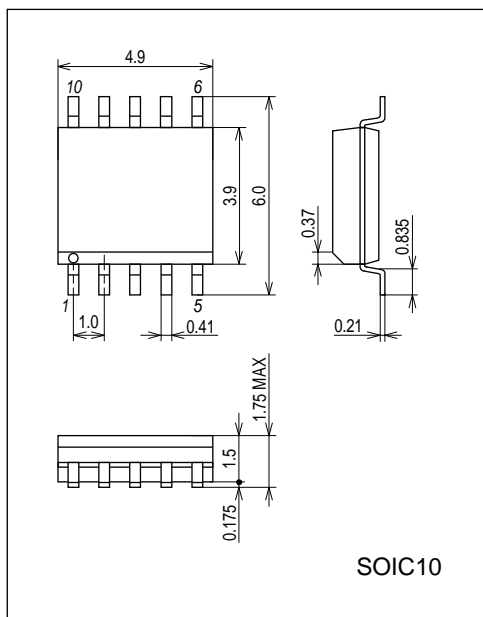
Electrical Characteristics at $T_a = 25^\circ\text{C}$, $V_{CC} = 6\text{V}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Current drain	I_{CC0}	$IN1 = IN2 = V_m = 0\text{V}$, $V_C = V_{ref}$ at standby mode		0.1	10	μA
	I_{CC1}	Forward/reverse, control, load OPEN		2	3	mA
	I_{CC2}	Forward/reverse, saturation, load OPEN		3	5	mA
	I_{CC3}	Braking, load OPEN		5	8	mA
Output saturation voltage	V_{sat1}	$I_O = 40\text{mA}$ (upper side + lower side)		0.2	0.3	V
	V_{sat2}	$I_O = 80\text{mA}$ (upper side + lower side)		0.4	0.6	V
Reference voltage	V_{ref}	$I_{V_{ref}} = 1\text{mA}$	1.85	2.0	2.15	V
Voltage characteristics of output voltage	$\Delta V_{O\text{-Line}}$	$V_O = 5\text{V}$, $V_{CC} = 5.5$ to 9V , $I_O = 40\text{mA}$			80	mA
Current characteristics of output voltage	$\Delta V_{O\text{-Load}}$	$V_O = 5\text{V}$, $V_{CC} = 6\text{V}$, $I_O = 10$ to 80mA			50	mA
Input current	I_{IN}	$V_{IN} = 5\text{V}$		90	150	μA
Output voltage	V_O	$V_C = 2\text{V}$	$2.3 \times V_C$		$2.5 \times V_C$	V

Package Dimensions

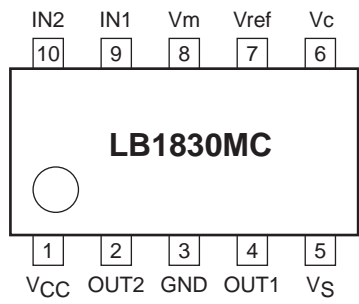
unit : mm (typ)

3426A

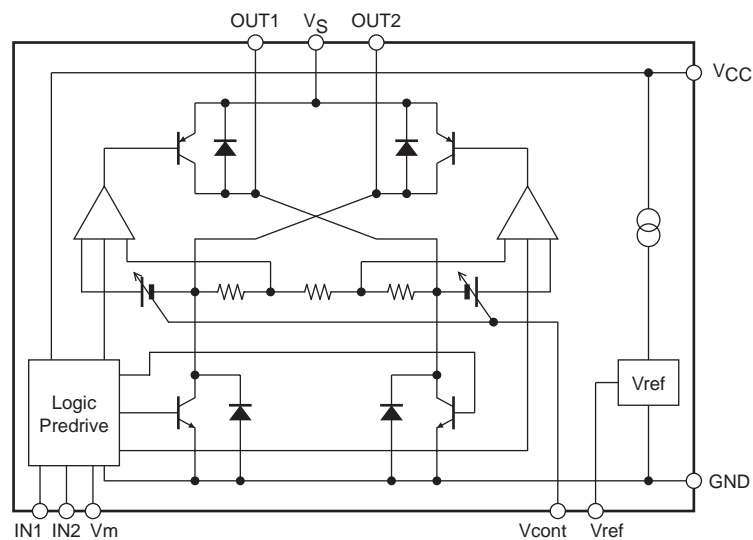


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Pin Assignment



Block Diagram



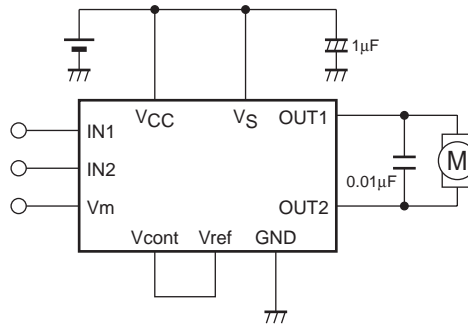
- The output voltage (voltage between output pins) V_O during drive with constant voltage is set as follows:
$$V_O = (V_C \text{ pin input voltage}) \times 2.4 \text{ (typical)}$$
- There is no hierarchical relationship among voltages; V_{CC} (control supply voltage), V_S (motor supply voltage), $IN1/IN2$ (input signal voltage).

Truth Table

Input			Output		Mode
IN1	IN2	Vm	OUT1	OUT2	
L	L	L	OFF	OFF	Standby
H	L	L	H	L	Forward (Regulated)
H	L	H	H	L	Forward (Saturation)
L	H	L	L	H	Reverse (Regulated)
L	H	H	L	H	Reverse (Saturation)
H	H	*	L	L	Brake

* when in saturation mode, $V_C = V_S$ available.

Application Circuit Example



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