Allowable Operating Ranges at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Supply voltage	V_{CC}		2.5 to 7.5	V
Input high-level voltage	V_{IH}		2.5 to 7.5	V
Input low-level voltage	V_{IL}		-0.3 to +0.7	V

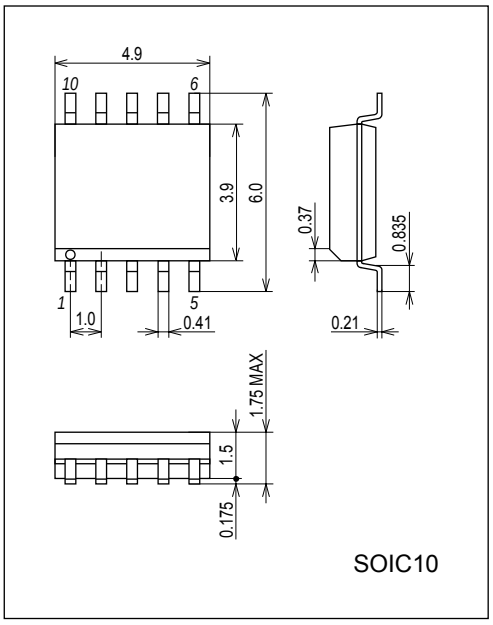
Electrical Characteristics at Ta = 25°C, V_{CC} = 5V

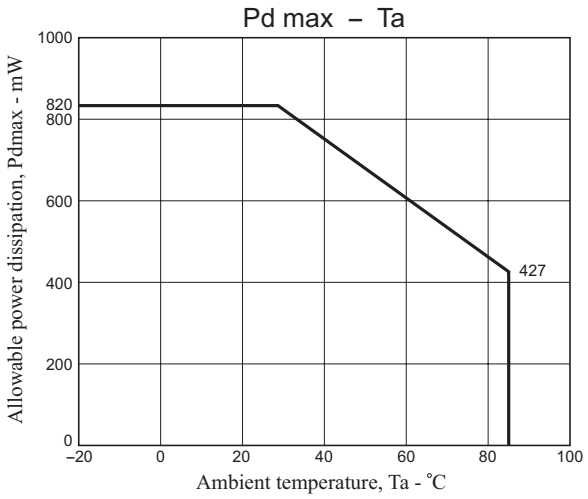
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Current drain	$I_{CC}0$	ENA = 0V, V_{IN} = 3V or 0V	-	0.1	10	μA
	$I_{CC}1$	ENA = 3V, V_{IN} = 3V or 0V	-	25	35	mA
Output saturation voltage	$V_{OUT}1$	ENA = 3V, V_{IN} = 3V or 0V, V_{CC} = 3 to 7.5V, I_{OUT} = 200mA	-	0.27	0.4	V
	$V_{OUT}2$	ENA = 3V, V_{IN} = 3V or 0V, V_{CC} = 4 to 7.5V, I_{OUT} = 400mA	-	0.55	0.8	V
Input current	I_{IN}	V_{IN} = 5V	-	75	100	μA
	I_{ENA}	ENA = 5V	-	85	110	μA
Spark Killer Diode						
Reverse current	I_S (leak)		-	-	30	μA
Forward voltage	V_{SF}	I_{OUT} = 400mA	-	-	1.7	V

Package Dimensions

unit : mm (typ)

3426A





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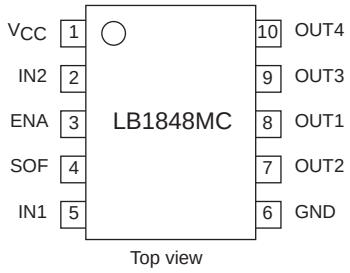
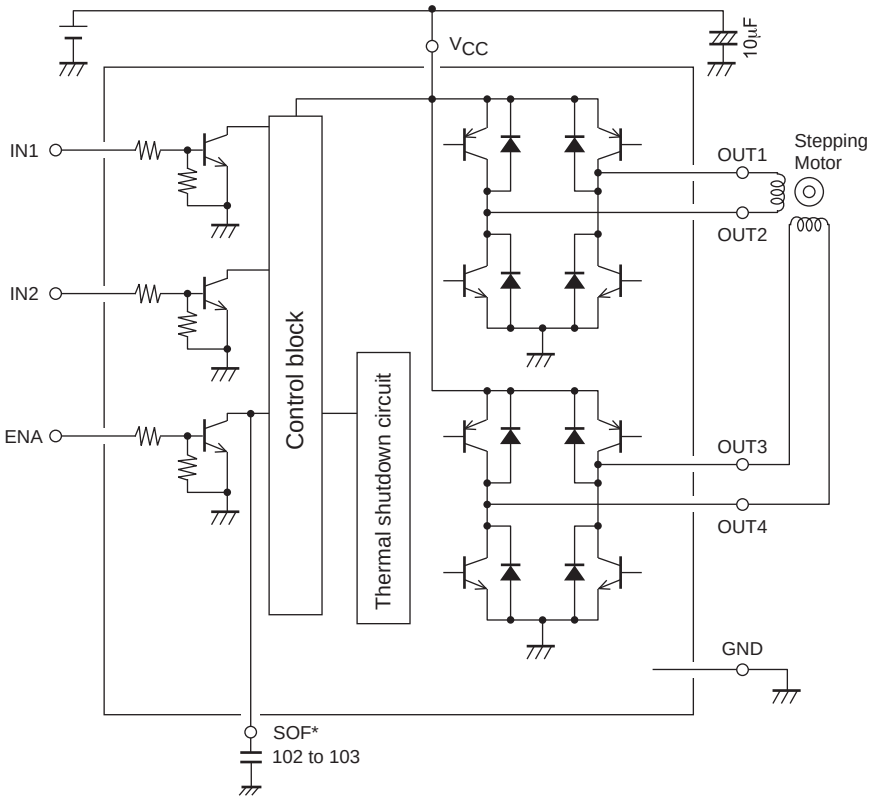
Pin Assignment



Block Diagram



Note: When the “soft off” function is used, a capacitor must be connected to the SOF pin. IF this function is not used, this pin must be left open with absolutely no signals or lines connect.

Truth Tables

ENA	IN1	IN2	OUT1	OUT2	OUT3	OUT4
L	-	-	OFF	OFF	OFF	OFF
H	L	L	H	L	H	L
	L	H	H	L	L	H
	H	H	L	H	L	H
	H	L	L	H	H	L

Note: *1 "-" indicates a "don't care" input.

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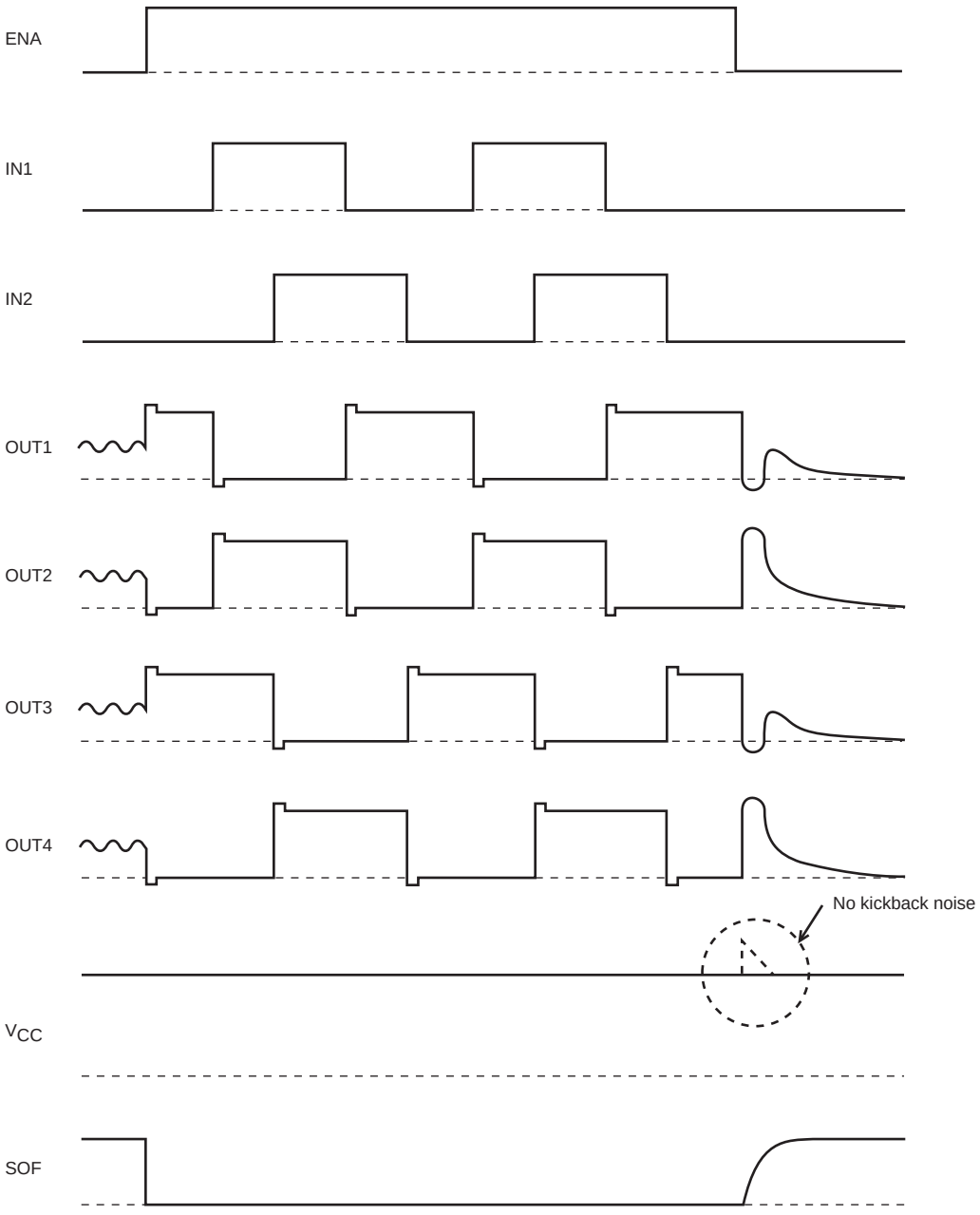
SOF pin (“Soft off” function) operation

The soft off function reduces power supply line noise due to the kickback current generated when the stepping motor drive mode is switched from drive to standby. The “soft off” function provided by this IC operates when a capacitor (0.001 to 0.01μF) is connected between the SOF pin and ground. (Leave the SOF pin open to disable the soft off function.)

The waveforms for each pin are shown below.



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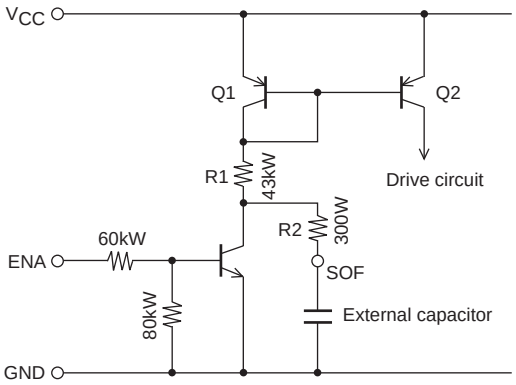
(Cautions)

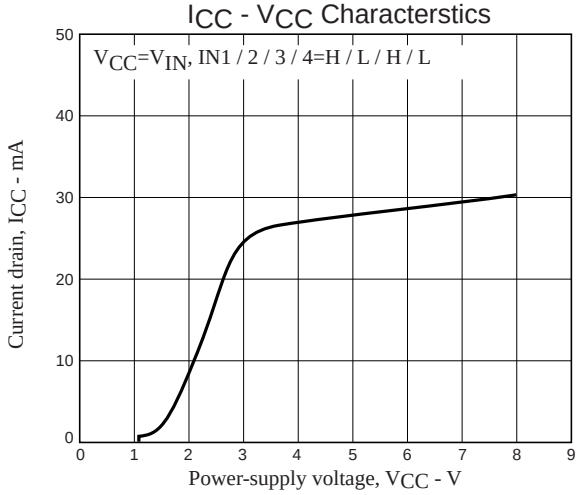
Pay attention to following two points in an application where the capacitor to GND is connected to the SOF pin:

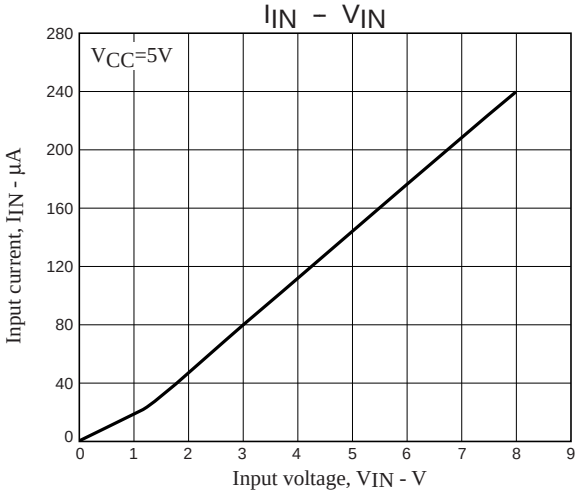
(1) Sudden startup of VCC power supply causes charging of the capacitor from the IC inside via the SOF pin at startup. During charging, the state equivalent to the one with the ENA input at “H” occurs, causing output of the corresponding logic to the output pin, which may result in driving of the load. (The output time period is dependent on the capacity of capacitor; about 2 ms for 0.01μF.)

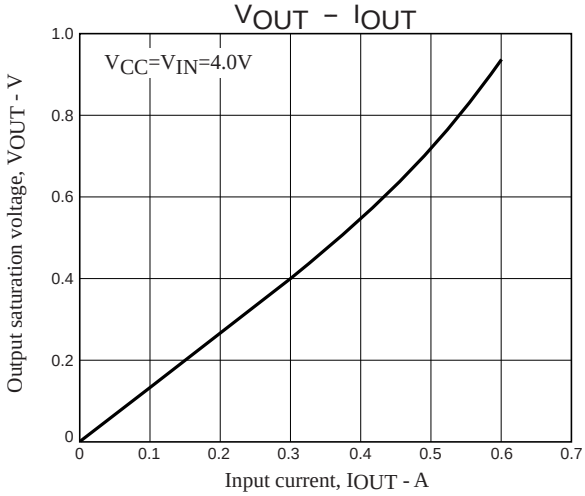
(2) To transfer from the drive mode to the standby mode by changing the ENA input from “H” to “L”, the capacitor is charged from the IC inside via the SOF pin as in the case of above (1). During this charge period, the ENA input keeps the “H” condition in IC. By changing IN1/IN2 input at this time point, the output can be changed. (The time period is equal to that of (1) above.)



[SOF pin internal equivalent circuit diagram]







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