

LB1938FA

Allowable Operating Range at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Supply voltage	V _{CC}		2.2 to 10	V
Input high-level voltage	V _{IH}		2.0 to 9.5	V
Input low-level voltage	V _{IL}		-0.3 to +0.3	V

Electrical Characteristics at Ta = 25°C, V_{CC} = 3V

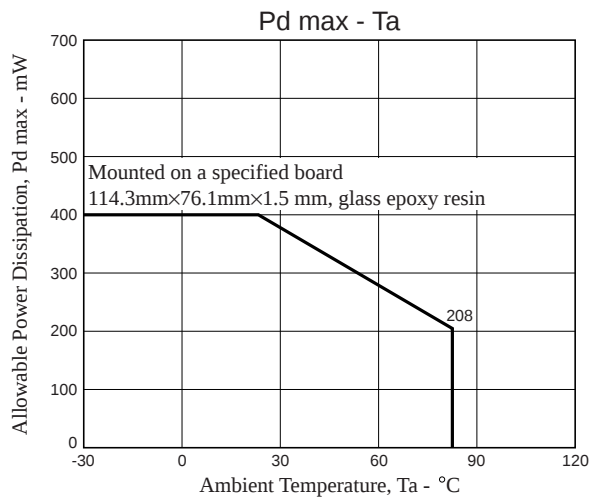
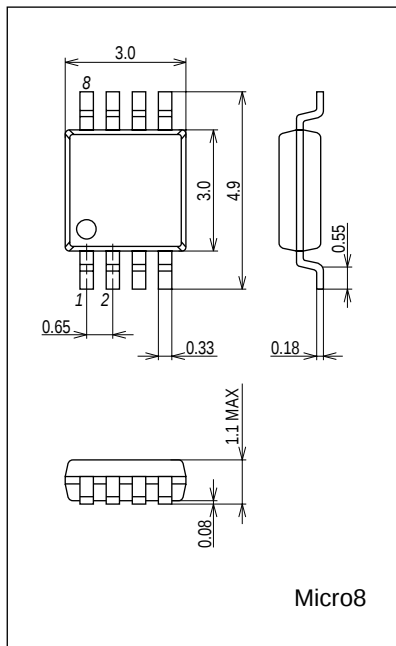
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Circuit current	I _{CC1}	Standby		0.1	5	μA
	I _{CC2}	Forward/reverse drive		14	19	mA
	I _{CC3}	Brake		20	29	mA
Output saturation voltage	V _{OSat1}	Upper+lower I _O = 100mA for forward/reverse rotation		0.15	0.2	V
	V _{OSat2}	Upper+lower I _O = 300mA for forward/reverse rotation		0.35	0.5	V
	V _{OSat3}	Upper I _O = 100mA for braking		0.1	0.15	V
Spark killer diode forward voltage	V _{SF}	I _O = 300mA		0.9	1.7	V
Spark killer diode inverse current	I _{RS}	V _{OUT} = 10V		0.1	5	μA
Input current	I _{IN}	V _{IN} = 5V		75	98	μA
Thermal protection operating temperature	TSD	Design target value *		180		°C

Note *: Design target value: Measurement with a single unit not made.

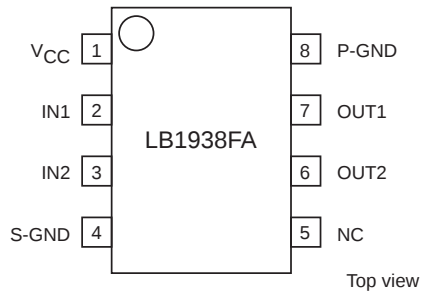
Package Dimensions

unit : mm (typ)

3427



Pin Assignment



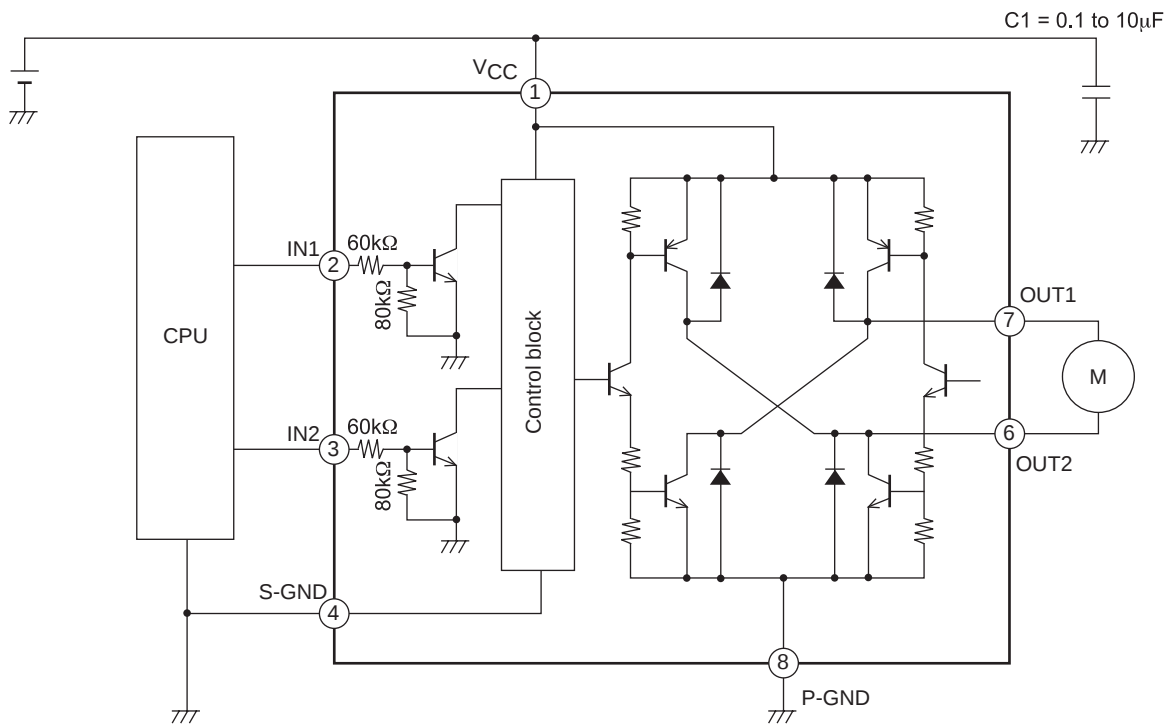
S-GND: GND for the control system

P-GND: GND for the power system

Truth Table

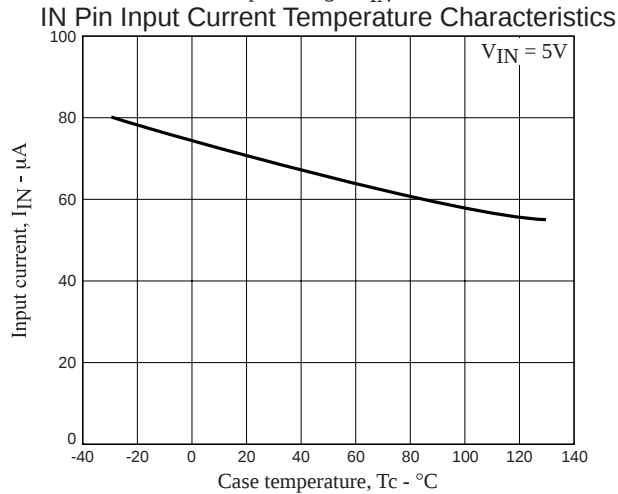
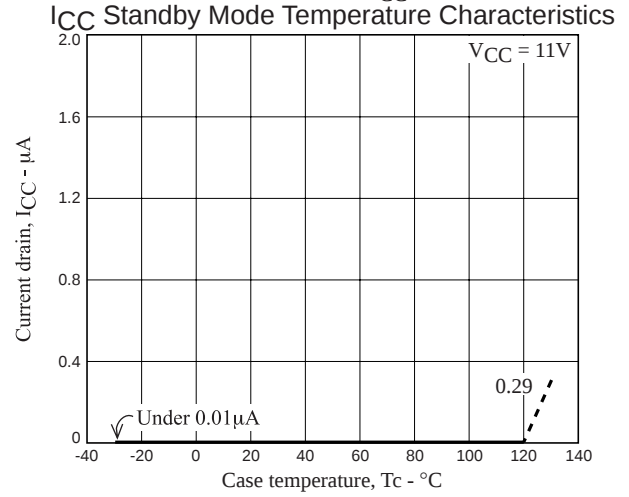
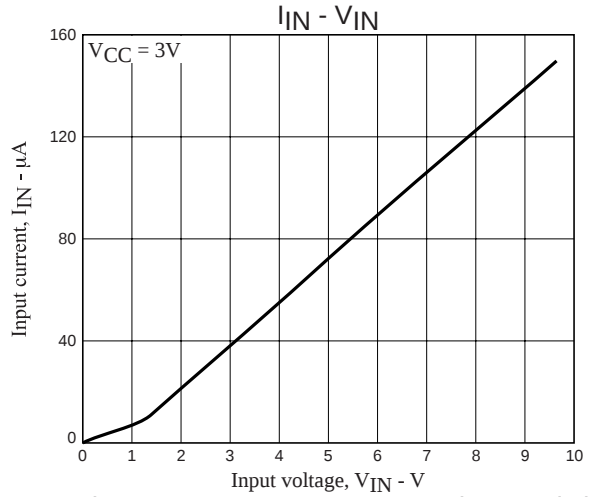
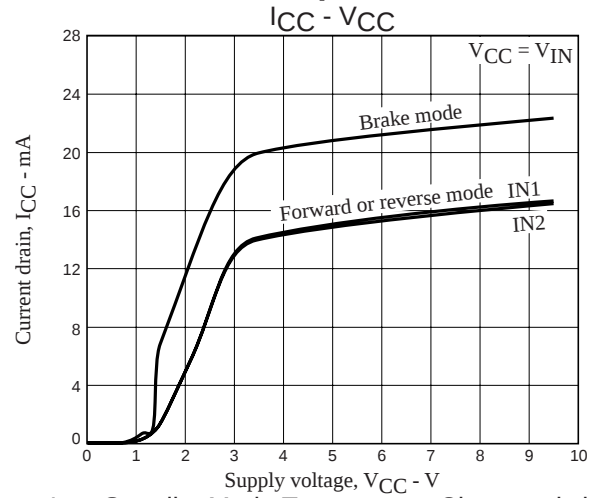
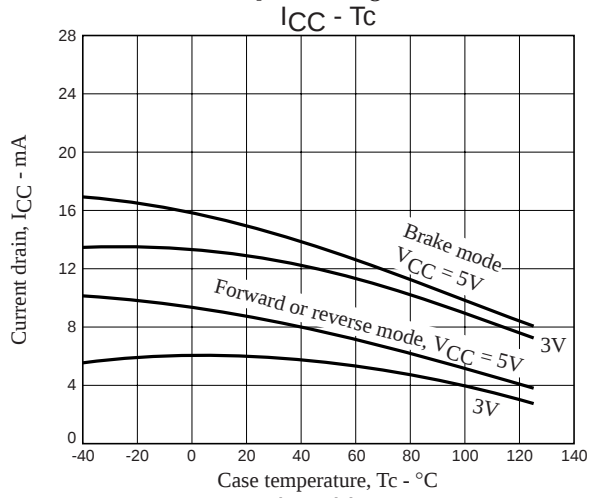
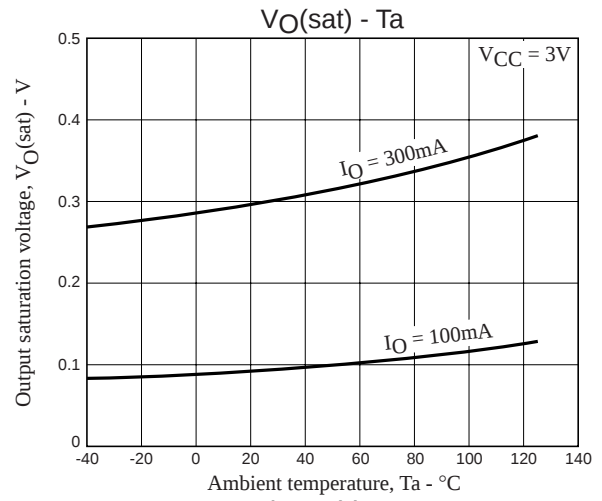
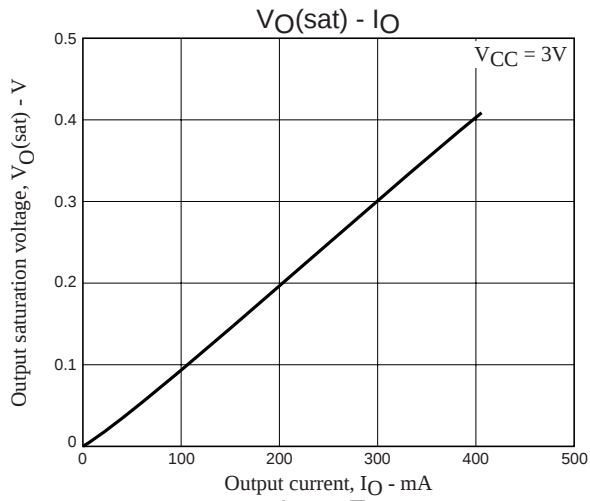
IN1	IN2	OUT1	OUT2	Mode
L	L	OFF	OFF	Standby
H	L	H	L	Forward rotation
L	H	L	H	Reverse rotation
H	H	H	H	Brake

Sample Application Circuit



Cautions:

- VCC and GND lines suffer substantial fluctuation in the current quantity, causing a problem of line oscillation in certain cases. In this case, take following points into account:
 - (1) Use a thick and short wiring to reduce the wiring inductance.
 - (2) Insert a capacitor with satisfactory frequency characteristics near IC.
 - (3) Connect S-GND to the control system GND on the CPU side and P-GND to the power system GND.



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