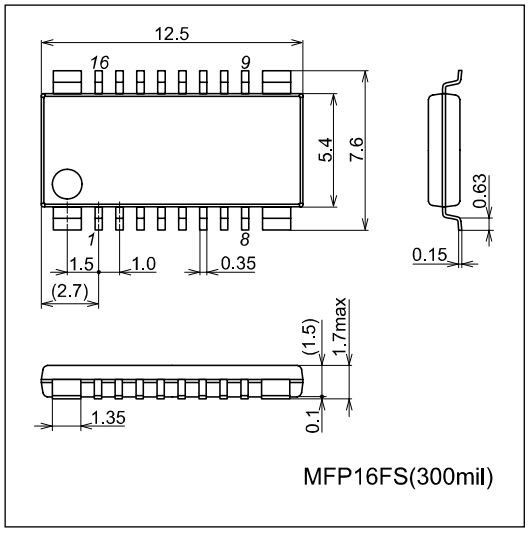
Electrical Characteristics at Ta = 25 °C, V_{CC} = 12 V, unless especially specified.

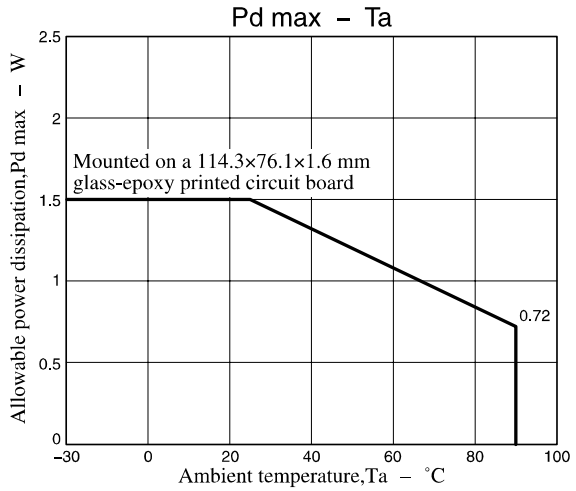
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Circuit current	$I_{CC}1$	During drive (CT = L)	4	6	9	mA
	$I_{CC}2$	During lock protection (CT = H)	2	4	6	mA
Lock detection capacitor charge current	ICT1		2.0	2.8	3.5	µA
Capacitor discharge current	ICT2		0.15	0.23	0.30	µA
Capacitor charge and discharge current ratio	RCT	RCD = ICT1/ICT2	9	12	15	-
CT charge voltage	VCT1		1.6	1.7	1.8	V
CT discharge voltage	VCT2		0.6	0.7	0.8	V
OUT output L saturation voltage	VOL	I_O = 200 mA		0.2	0.3	V
OUT output H saturation voltage	VOH	I_O = 200 mA		0.9	1.2	V
Hall input sensitivity	VHN	Zero peak value (including offset and hysteresis)		7	15	mV
RD/FG output pin L voltage	VRD/FG	IRD/FG = 5 mA		0.1	0.2	V
RD/FG output pin leak current	IRD/FGL	VRD/FG = 15 V		1	30	µA
HB output L voltage	VHBL	IHB = 5 mA	1.3	1.5	1.7	V

Package Dimensions

unit : mm

3097B

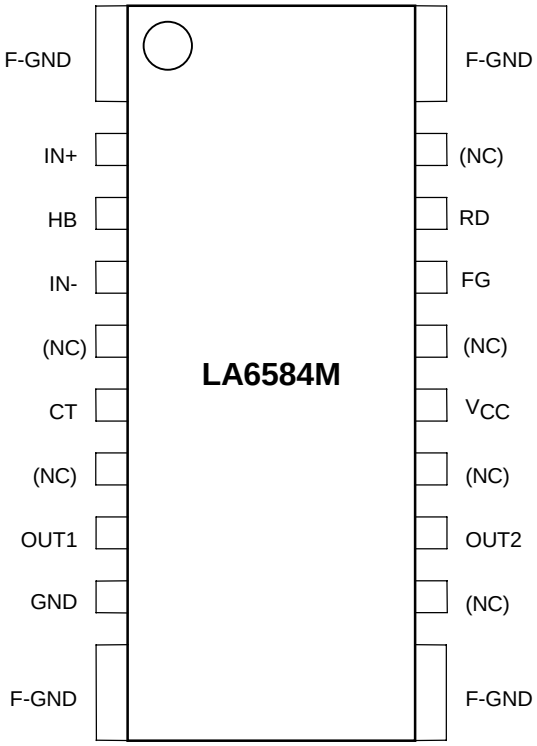




Truth Table

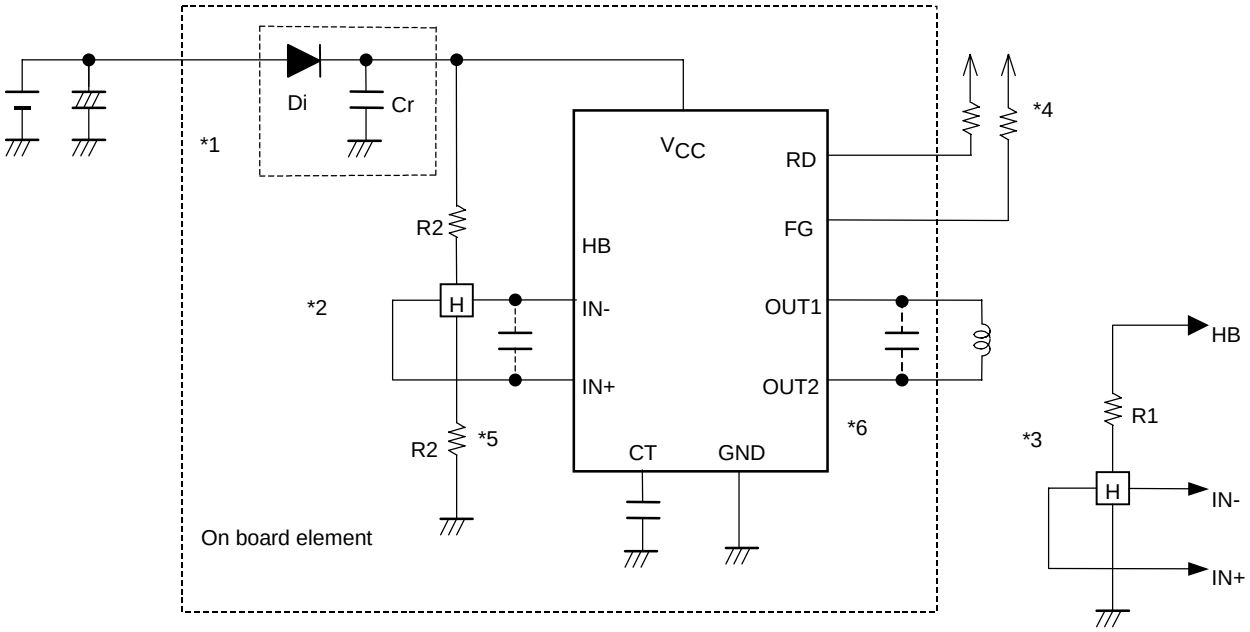
IN-	IN+	CT	OUT1	OUT2	FG	RD	Mode
H	L	L	H	L	L	L	During rotation
L	H		L	H	H		
-	-	H	OFF	OFF	-	H	During overheat protection

Pin Assignment



Top view

Sample Application Circuit



*1 When Di to prevent breakdown in case of reverse connection is used, it is necessary to insert a capacitor Cr to secure the regenerative current route. Similarly, Cr is necessary to enhance the reliability when there is no capacitor near the fan power line.

*2 To obtain Hall bias from V_{CC}, carry out $1/2 \times V_{CC}$ bias as shown in the figure. Linear driving is made through voltage control of the coil by amplifying the Hall output. When the Hall element output is large, the startup performance and efficiency are improved. Adjustment of the Hall element can reduce the noise further.

*3 When the Hall bias is taken from the HB pin, constant-voltage bias is made with about 2.0 V. Therefore, the Hall element can provide the output satisfactory in temperature characteristics. Adjustment of the Hall output amplitude is made with R1. (When V_{CC} = 12 V, the step *2 above proves advantageous for IC heat generation.)

*4 Keep this open when not used.

*5 When the wiring from the Hall output to IC Hall input is long, noise may be carried through the wiring. In this case, insert the capacitor as shown in the figure.

Internal Equivalent Circuit