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LA6584M

Monolithic Linear IC

BTL Driver Single-Phase Full-Wave Fan Motor Driver

Overview

The LA6584M is Single-phase bipolar fan motor is put into silent driving by means of BTL output linear drive, offering high efficiency and power saving by suppressing the reactive current. Lock protection and rotation signal (FG, RD) circuits are built in, ensuring optimum application to small fans for notebook PC, consumer equipment power supply, car audio system, CPU cooler, etc. that require high reliability and low noise.

Functions and Applications

- Single-phase full-wave driver for fan motor

Specifications

Absolute Maximum Ratings at $T_a = 25\text{ }^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Output voltage	$V_{CC\text{ max}}$		15	V
Allowable dissipation	$P_d\text{ max}$	Mounted on a specified board*	1.5	W
Output current	$I_{OUT\text{ max}}$		1.6	A
Output withstand voltage	$V_{OUT\text{ max}}$		15	V
RD/FG output pin output Withstand voltage	$V_{RD/FG\text{ max}}$		15	V
RD/FG output current	$I_{RD/FG\text{ max}}$		5	mA
HB output voltage	$I_B\text{ max}$		10	mA
Operating temperature	T_{opr}		-30 to +90	$^\circ\text{C}$
Storage temperature	T_{stg}		-55 to +150	$^\circ\text{C}$

*Mounted on a specified board (114.3×76.1×1.6mm, Glass epoxy)

Stresses exceeding Maximum Ratings may damage the device. Maximum Ratings are stress ratings only. Functional operation above the Recommended Operating Conditions is not implied. Extended exposure to stresses above the Recommended Operating Conditions may affect device reliability.

Recommended Operating Range at $T_a = 25\text{ }^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings	Unit
Supply voltage	V_{CC}		2.8 to 14.0	V
Common-phase input voltage Range of Hall input	V_{ICM}		0 to $V_{CC}-1.5$	V

LA6584M

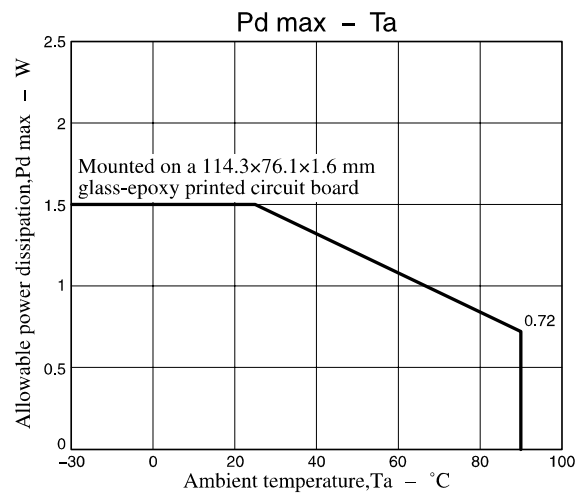
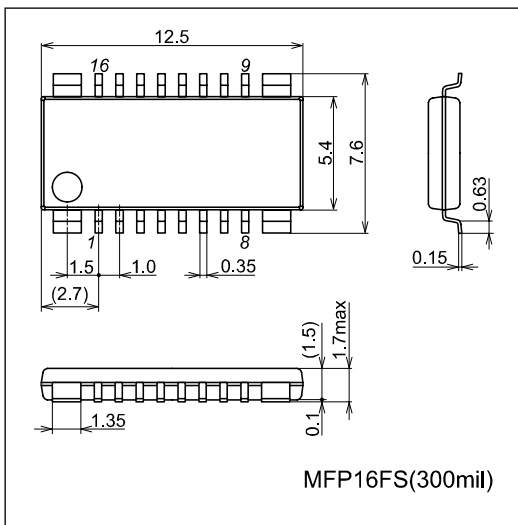
Electrical Characteristics at $T_a = 25\text{ }^\circ\text{C}$, $V_{CC} = 12\text{ V}$, unless especially specified.

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Circuit current	I_{CC1}	During drive (CT = L)	4	6	9	mA
	I_{CC2}	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	$I_O = 200\text{ mA}$		0.2	0.3	V
OUT output H saturation voltage	VOH	$I_O = 200\text{ mA}$		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	$IRD/FG = 5\text{ mA}$		0.1	0.2	V
RD/FG output pin leak current	IRD/FGL	$VRD/FG = 15\text{ V}$		1	30	μA
HB output L voltage	VHBL	$IHB = 5\text{ mA}$	1.3	1.5	1.7	V

Package Dimensions

unit : mm

3097B

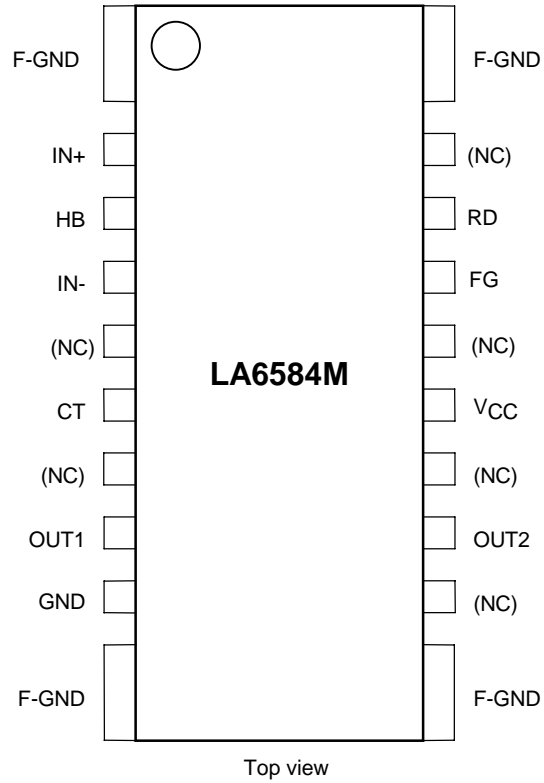


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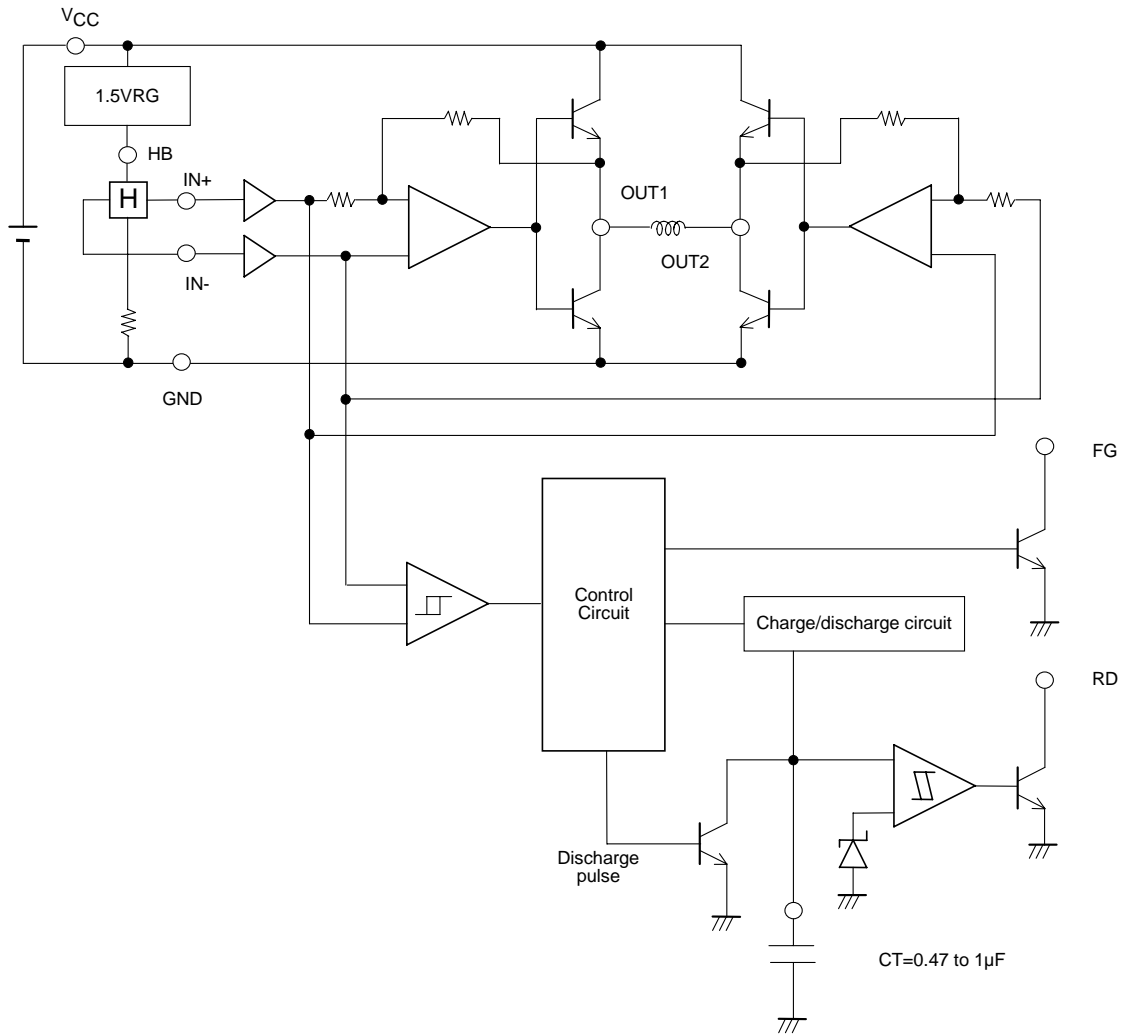
Truth Table

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



Internal Equivalent Circuit



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