



SANYO Semiconductors

# DATA SHEET

## LA6585T — Monolithic Linear IC BTL Drive Single-Phase Full-Wave Fan Motor Driver

### Overview

The LA6585T is a single-phase bipolar fan motor driver that achieves quiet operation, power savings, silent operation and high efficiency that suppresses reactive current through BTL output linear drive. It provides lock protection and rotation signal circuits on chip, and is optimal for applications that require high reliability and low noise, such as notebook personal computers, power supplies in consumer electronic equipment, car audio, and CPU cooling systems.

### Features

- BTL output single-phase full-wave linear drive (gain resistor : 1 to 360k $\Omega$ , 51dB)
- Supports low-voltage drive and features a wide usable voltage range (2.2 to 14.0V)
- Low saturation output (high side + low side saturation voltage : Vosat (total) = 1.2V (typical), I<sub>O</sub> = 250mA)
- Built-in lock protection and automatic return circuits
- Built-in FG output
- Built-in Hall sensor bias (VHB = 1.5V)
- Thermal protection circuit
- Small-sized, high thermal capacity package

### Specifications

#### Absolute Maximum Ratings at T<sub>a</sub> = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Supply voltage	V <sub>CC</sub> max		15	V
Output current	I <sub>OUT</sub> max		0.5	A
Output voltage	V <sub>OUT</sub> max		15	V
FG output pin output withstand voltage	V <sub>FG</sub> max		15	V
FG output current	I <sub>FG</sub> max		10	mA

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# LA6585T

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Parameter	Symbol	Conditions	Ratings	Unit
Allowable power dissipation	Pd max	When mounted on a circuit board *1	400	mW
Operating temperature	Topr		-30 to +90	°C
Storage temperature	Tstg		-55 to +150	°C

\*1 Specified circuit board : 114.3 × 76.1 × 1.6mm<sup>3</sup>, glass epoxy.

## Recommended Operating Conditions at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Supply voltage	V <sub>CC</sub>		2.2 to 14.0	V
Common-phase input voltage range of hall input	V <sub>ICM</sub>		0 to V <sub>CC</sub> - 1.5	V

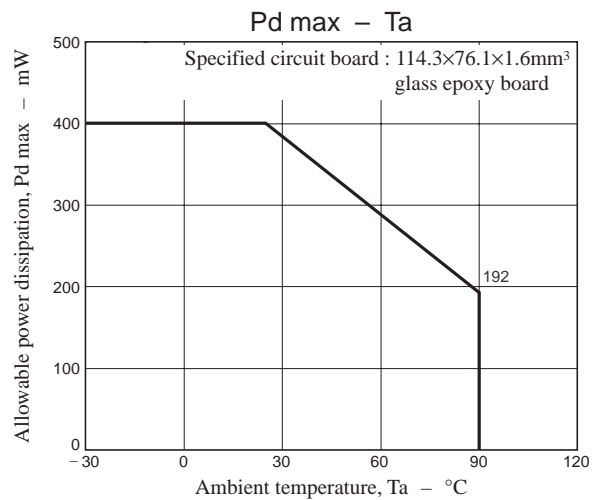
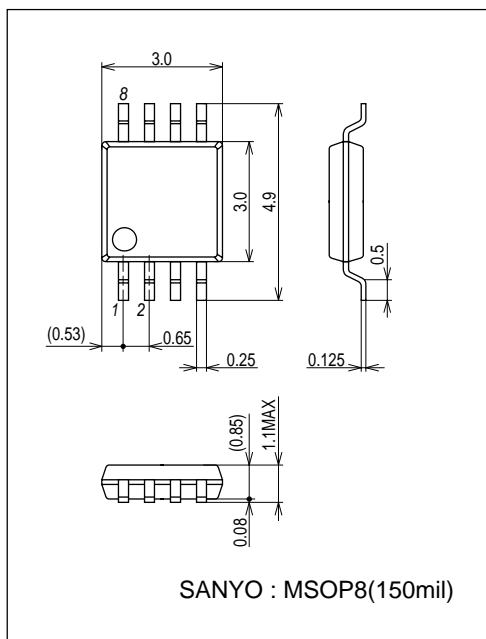
## Electrical Characteristics at Ta = 25°C, V<sub>CC</sub> = 12V, Unless otherwise specified.

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Circuit current	I <sub>CC1</sub>	Drive mode (CT = low)	3	6	9	mA
	I <sub>CC2</sub>	Lock protection mode (CT = high)	2.5	5	7.5	mA
Lock detection capacitor charge current	I <sub>CT1</sub>		0.9	1.2	1.5	μA
Capacitor discharge current	I <sub>CT2</sub>		0.10	0.18	0.25	μA
Capacitor charge/discharge current ratio	RCT	RCD = I <sub>CT1</sub> /I <sub>CT2</sub>	5	6.5	8	
CT charge voltage	V <sub>CT1</sub>		1.3	1.5	1.7	V
CT discharge voltage	V <sub>CT2</sub>		0.3	0.5	0.7	V
OUT output low saturation voltage	V <sub>OL</sub>	I <sub>O</sub> = 200mA		0.25	0.45	V
OUT output high saturation voltage	V <sub>OH</sub>	I <sub>O</sub> = 200mA		0.95	1.2	V
Hall input sensitivity	V <sub>HN</sub>	Zero peak value (including offset and hysteresis)		7	15	mV
FG output pin low-level voltage	V <sub>FG</sub>	I <sub>FG</sub> = 5mA		0.15	0.3	V
FG output pin leakage current	I <sub>FG</sub>	V <sub>FG</sub> = 15V		1	30	μA

## Package Dimensions

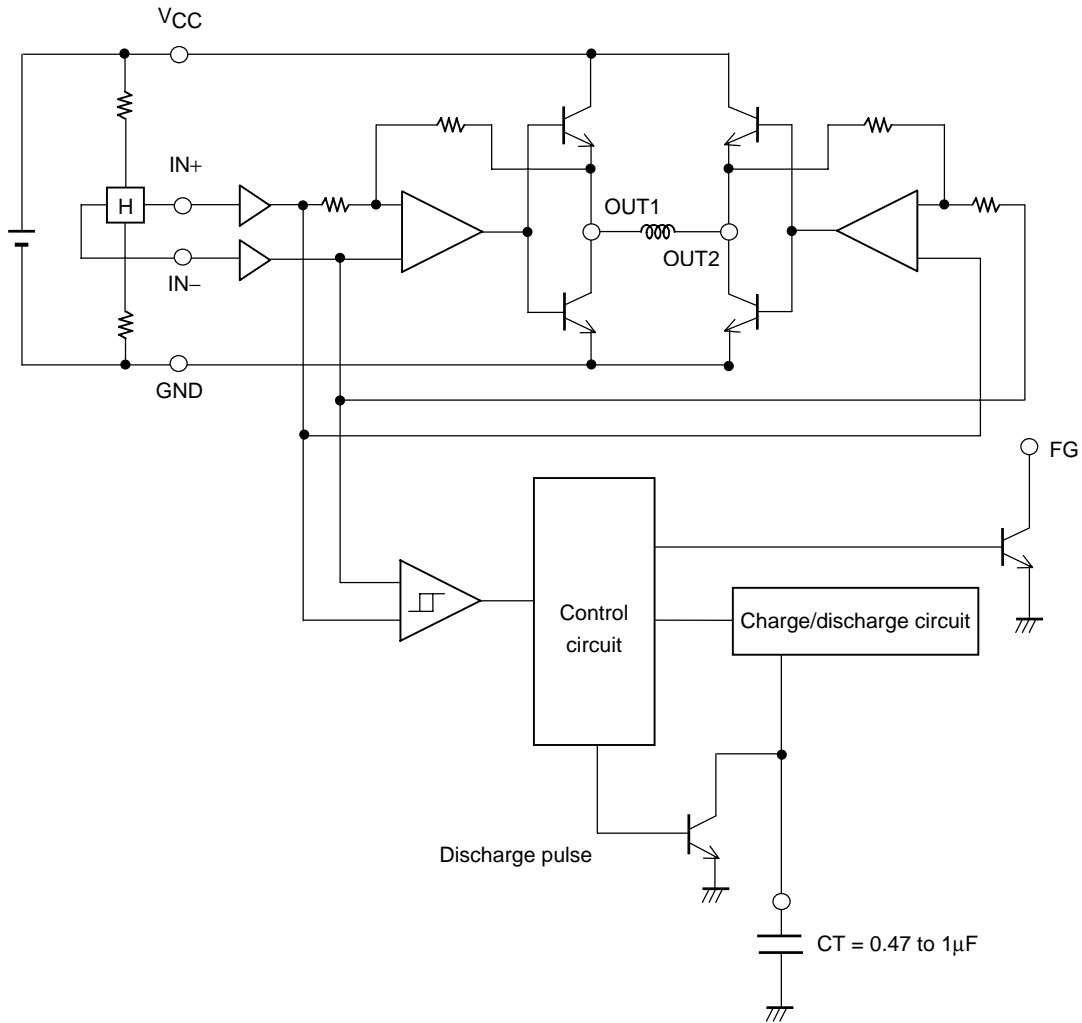
unit : mm (typ)

3245B





Internal Equivalent Circuits



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