



# F6406/G

## LINEAR INTEGRATED CIRCUIT

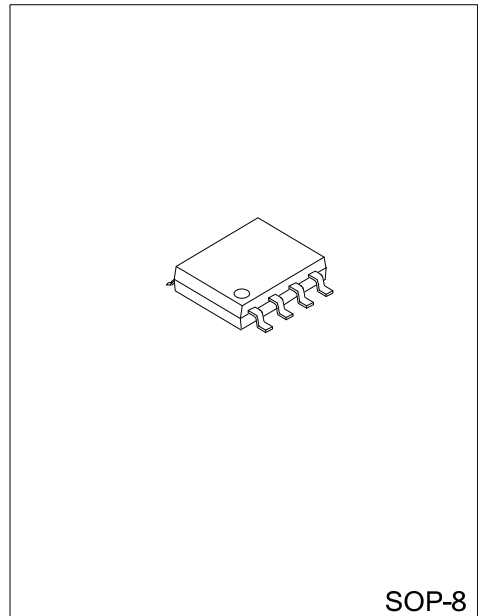
### 2-PHASE DC-FAN MOTOR PRE-DRIVER IC

#### DESCRIPTION

The UTC **F6406/G** is a 2-phase pre-driver IC for dc-fan motors, providing the functions of motor lock protection, auto-restart, and rotation detection signal output. UTC **F6406** is with RD option and UTC **F6406G** with FG.

#### FEATURES

- \* Wide supply voltage range of 2.5V to 30V
- \* Lock protection
- \* Auto-restart when the motor lock is undone
- \* RD(latch-type lockup detection) output (F6406)
- \* FG(frequency generator) output (F6406G)



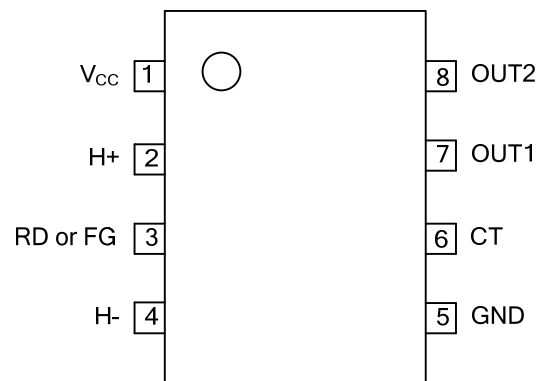
Lead-free: F6406L/F6406P  
 Halogen-free: F6406GL/F6406GP

#### ORDERING INFORMATION

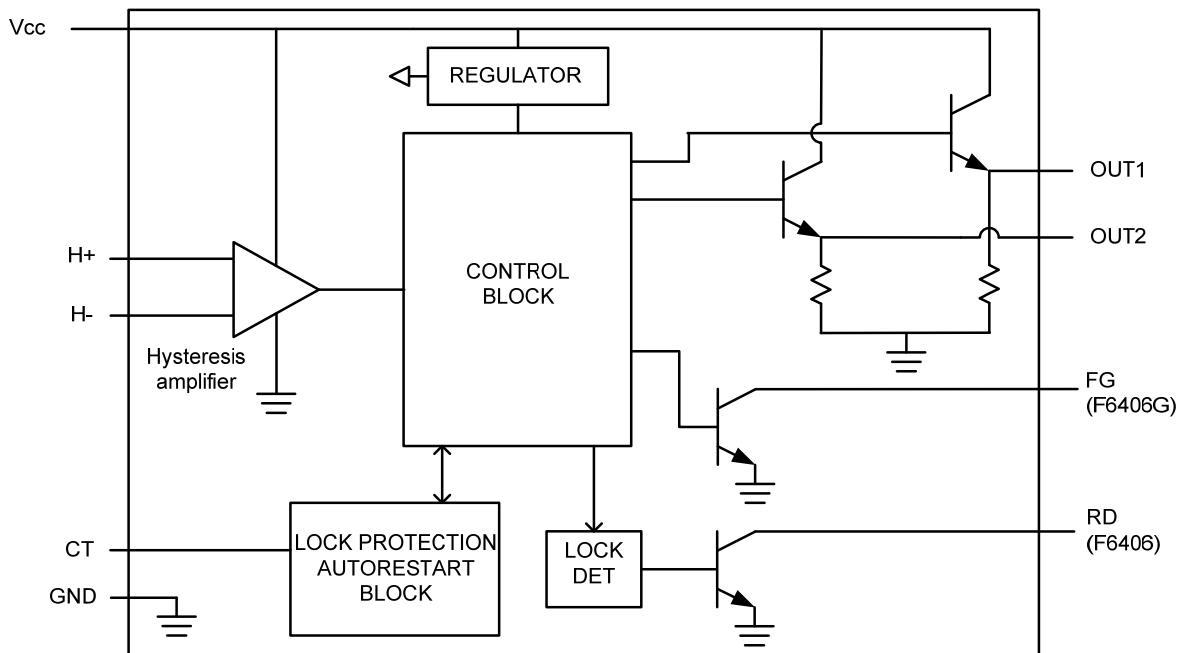
Ordering Number			Package	Packing
Normal	Lead Free	Halogen Free		
F6406-S08-R	F6406L-S08-R	F6406P-S08-R	SOP-8	Tape Reel
F6406G-S08-R	F6406GL-S08-R	F6406GP-S08-R	SOP-8	Tape Reel

<p>F6406L-S08-R</p> <p>(1)Packing Type        (2)Package Type        (3)Lead Plating</p>	<p>(1) R: Tape Reel        (2) S08: SOP-8        (3) P: Halogen Free, L: Lead Free, Blank: Pb/Sn</p>
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### ■ PIN CONFIGURATION



## ■ BLOCK DIAGRAM



### ■ ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

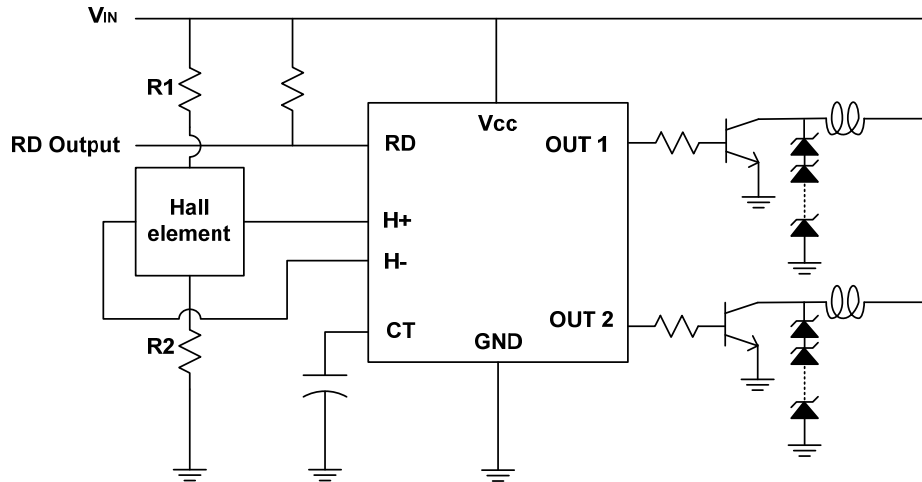
PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V <sub>CC</sub>	2.5V ~ 30V	V
Hall Input Common Mode Voltage Range	V <sub>HIC</sub>	1.0 ~ V <sub>CC</sub> -0.5	V
Circuit Current	I <sub>OUT</sub>	80	mA
Power Dissipation	P <sub>D</sub>	700	mW
Operating Ambient Temperature	T <sub>OPR</sub>	-20 ~ +85	°C
Storage Temperature	T <sub>STG</sub>	-55 ~ +150	°C

Note Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

### ■ ELECTRICAL CHARACTERISTICS (Ta=25°C, V<sub>CC</sub>=12V)

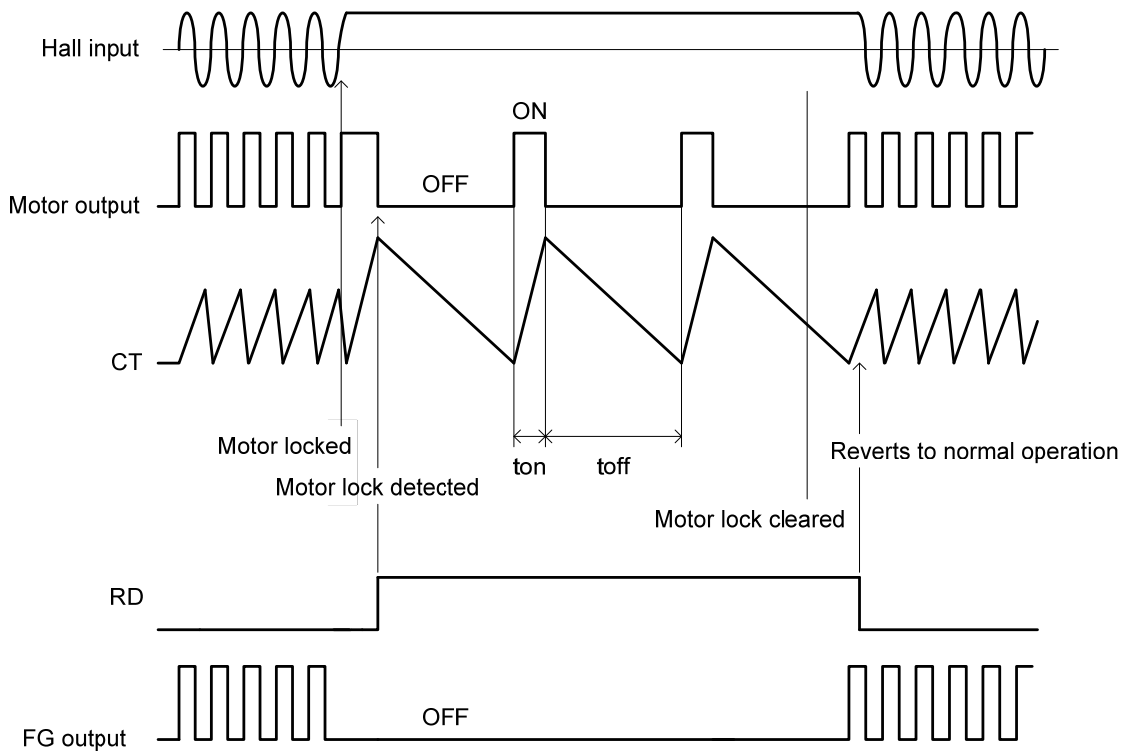
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT	
Current Drain	I <sub>CC</sub>	In drive mode	CT=L		3.2	8.7	mA
			CT=H		3.2	5	mA
Lockup Detection Capacitor Charge Current	I <sub>CT1</sub>	V <sub>CT</sub> = 1.1V	2	3.45	5.25	μA	
Capacitor Discharge Current	I <sub>CT2</sub>	V <sub>CT</sub> = 1.1V	0.35	0.8	1.45	μA	
Charge/Discharge Ratio	R <sub>CT</sub>	R <sub>CD</sub> =I <sub>CT1</sub> /I <sub>CT2</sub>	3	4.5	8		
CT Charge Voltage	V <sub>CT1</sub>		2.2	2.6	3	V	
CT Discharge Voltage	V <sub>CT2</sub>		0.4	0.6	0.8	V	
Output High Level Voltage	V <sub>OL</sub>	I <sub>OUT</sub> = 10 mA	10	10.5		V	
Hall Input Sensitivity	V <sub>Hin</sub>	Zero peak value (including offset and hysteresis)	3		15	mV	
RD Output Pin Low Voltage (F6406)	V <sub>RDL</sub>	I <sub>RD</sub> =5mA		0.1	0.3	V	
RD Current Capacity (F6406)	I <sub>RD</sub>	V <sub>RDL</sub> =2V	20			mA	
FG Low Voltage (F6406G)	V <sub>FGL</sub>	I <sub>FG</sub> =5mA		0.1	0.3	V	
FG Driver Capacity (F6406G)	I <sub>FG</sub>	V <sub>FGL</sub> =2V	20			mA	
FG Leakage Current (F6406G)	I <sub>FGL</sub>	V <sub>FGL</sub> =15V			50	μA	

■ **TYPICAL APPLICATION CIRCUIT(F6406)**



\*Same value of hall bias resistors is selected for R1 and R2

■ **LOCKUP PROTECTION / AUTOMATIC RECOVERY**



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