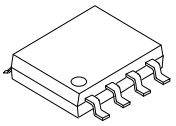
F6406/G *LINEAR INTEGRATED CIRCUIT*

2-PHASE DC-FAN MOTOR PRE-DRIVER IC



SOP-8

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

■ 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)

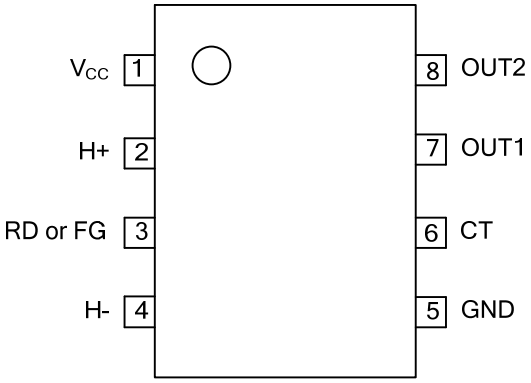
■ ORDERING INFORMATION

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

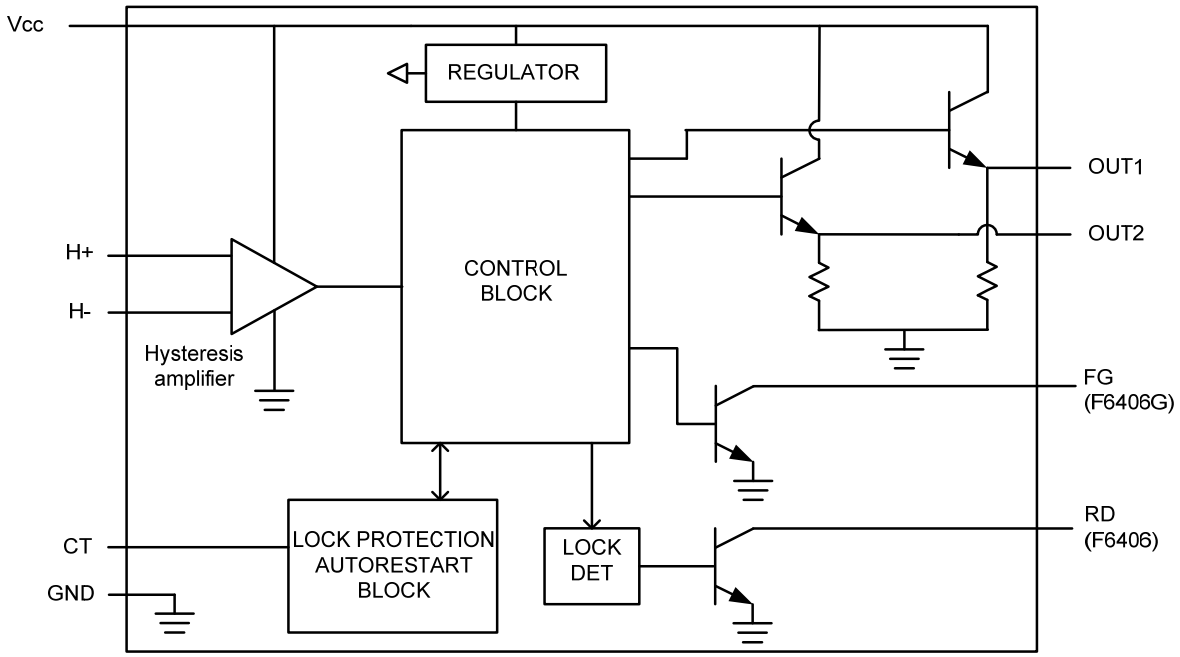
F6406L-S08-R
(1)Packing Type
(2)Package Type
(3)Lead Plating

(1) R: Tape Reel
(2) S08: SOP-8
(3) P: Halogen Free, L: Lead Free, Blank: Pb/Sn

■ PIN CONFIGURATION



■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)

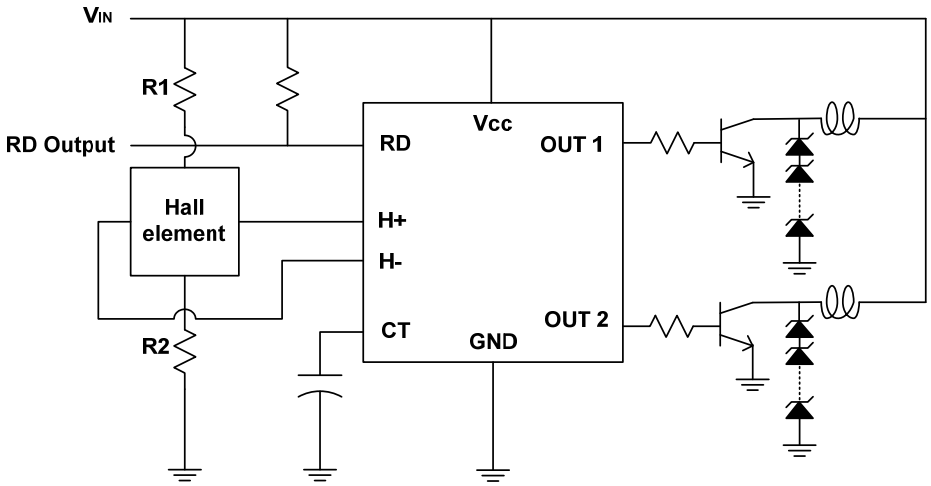
PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V_{CC}	2.5V ~ 30V	V
Hall Input Common Mode Voltage Range	V_{HIC}	1.0 ~ Vcc-0.5	V
Circuit Current	I_{OUT}	80	mA
Power Dissipation	P_D	700	mW
Operating Ambient Temperature	T_{OPR}	-20 ~ +85	°C
Storage Temperature	T_{STG}	-55 ~ +150	°C

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_{CC}=12V)

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

■ TYPICAL APPLICATION CIRCUIT(F6406)



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

■ LOCKUP PROTECTION / AUTOMATIC RECOVERY