



SK6908

LINEAR INTEGRATED CIRCUIT

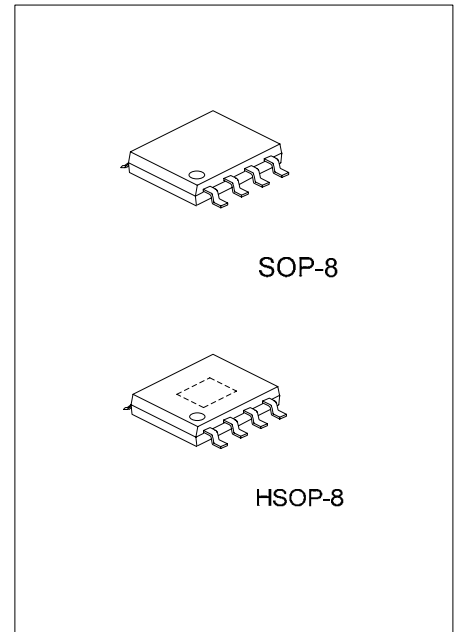
SINGLE-PHASE DC-FAN MOTOR DRIVER

DESCRIPTION

SK6908 is a single-phase driver for dc-fan motors. It provides high efficiency, low noise output and supports the functions of motor lock protection, auto restart and rotation detection.

FEATURES

- *Wide supply voltage range of 2.5V to 20V
- *Output current $I_{O(MAX)}=600mA$
- *Operate with Hall element
- *Lock protection
- *Auto-restart when the motor lock is undone
- *FG(frequency generator) output
- *Package type SOP-8 and HSOP-8 expose



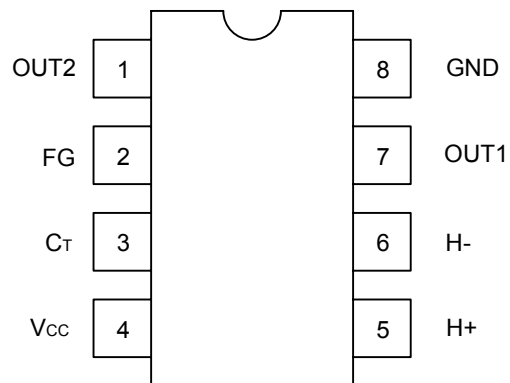
*Pb-free plating product number: SK6908L

ORDERING INFORMATION

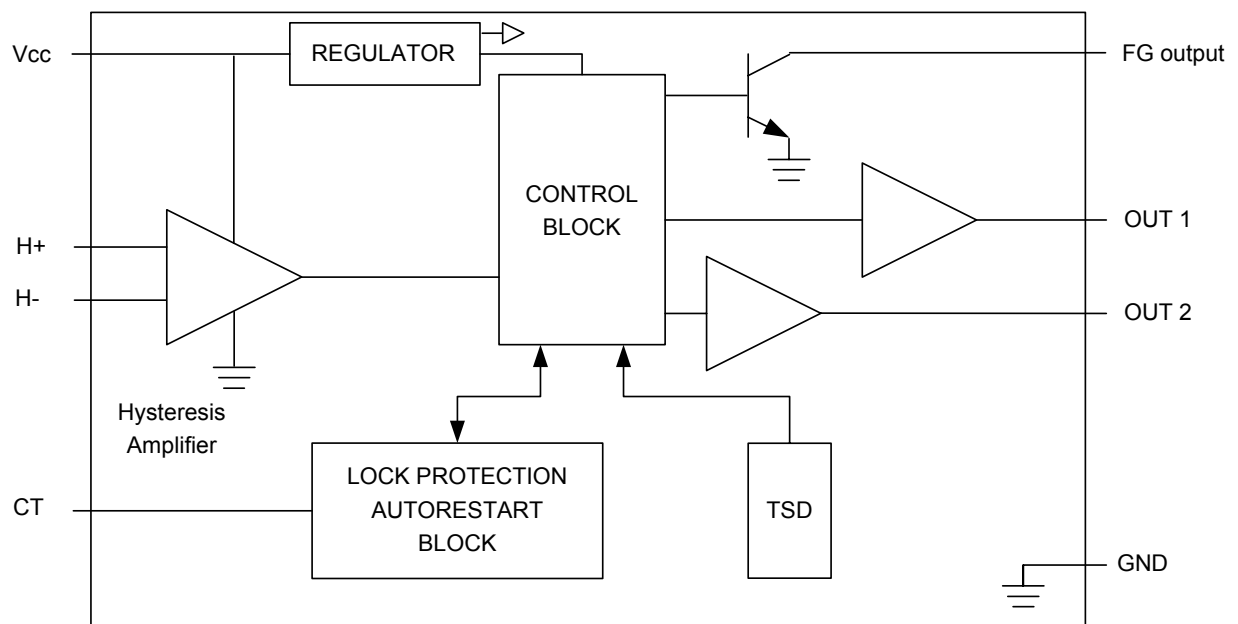
Ordering Number		Package	Packing
Normal	Lead Free Plating		
SK6908-S08-R	SK6908L-S08-R	SOP-8	Tape Reel
SK6908-S08-T	SK6908L-S08-T	SOP-8	Tube
SK6908-SH2-R	SK6908L-SH2-R	HSOP-8	Tape Reel
SK6908-SH2-T	SK6908L-SH2-T	HSOP-8	Tube

<p>SK6908L-S08-R</p> <p>(1)Packing Type (2)Package Type (3)Lead Plating</p>	<p>(1) R: Tape Reel, T: Tube (2) S08: SOP-8, SH2: HSOP-8 (3) L: Lead Free Plating, Blank: Pb/Sn</p>
---	---

■ PIN CONFIGURATION



■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATINGS (Ta = 25 °C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V _{CC}	20	V
Supply Current	I _{CC}	20	mA
Circuit Current	I _O	600	mA
FG Output Current	I _{FG}	20	mA
Power Dissipation (Derate at Ta=25 °C reduce 5.5mW/ °C)	SOP-8	700	mW
	HSOP-8	1000	mW
Output Voltage	V _{OUT}	20	V
Hall Input Common Mode Voltage Range	V _{HIC}	1.0 ~ V _{CC} -0.5	V
Operating Temperature	T _{OPR}	-20 ~ +100(Note1)	
Storage Temperature	T _{STG}	-55 ~ +150	

Note 1. For operation in ambient temperatures above 25 °C, the driver device must be derated based on a 150 °C maximum temperature.

Note 2. 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.

Note 3. The device is guaranteed to meet performance specification within 0 °C ~ +70 °C operating temperature range and assured by design from -20 °C ~ +100 °C.

■ ELECTRICAL CHARACTERISTICS (Ta=25 °C, V_{CC}=5V)

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Current Drain	I _{CC}	In drive mode (C _T =L)		8		mA
		In lockup protection mode (C _T =H)		4.1		mA
Lockup Detection Capacitor Charge Current	I _{CT1}	V _{1PIN} = 1.1V	2	2.8	4	µA
Capacitor Discharge Current	I _{CT2}	V _{1PIN} = 1.1V	0.3	0.5	0.8	µA
Capacitor Charge/Discharge Current Ratio	R _{CT}			5.6		
CT charge Voltage	V _{CT1}			1.9		V
CT Discharge Voltage	V _{CT2}			0.7		V
Output Low Level Voltage	V _{OL}	I _O =200mA		0.3	0.7	V
Output High Level Voltage	V _{OH}	I _O =200mA	3.9	4.1		V
Hall Input Sensitivity	V _{HIN}	Zero peak value (including offset and hysteresis)	3		15	mV
Hall Input-Output Gain	G _{HO}		320	500	680	
FG Output Pin Low Voltage	V _{FG}	I _{FG} =5mA		0.3	0.5	V
FG Output Pin Leakage Current	I _{FG(LEAK)}	V _{FG} =15V		0	10	µA

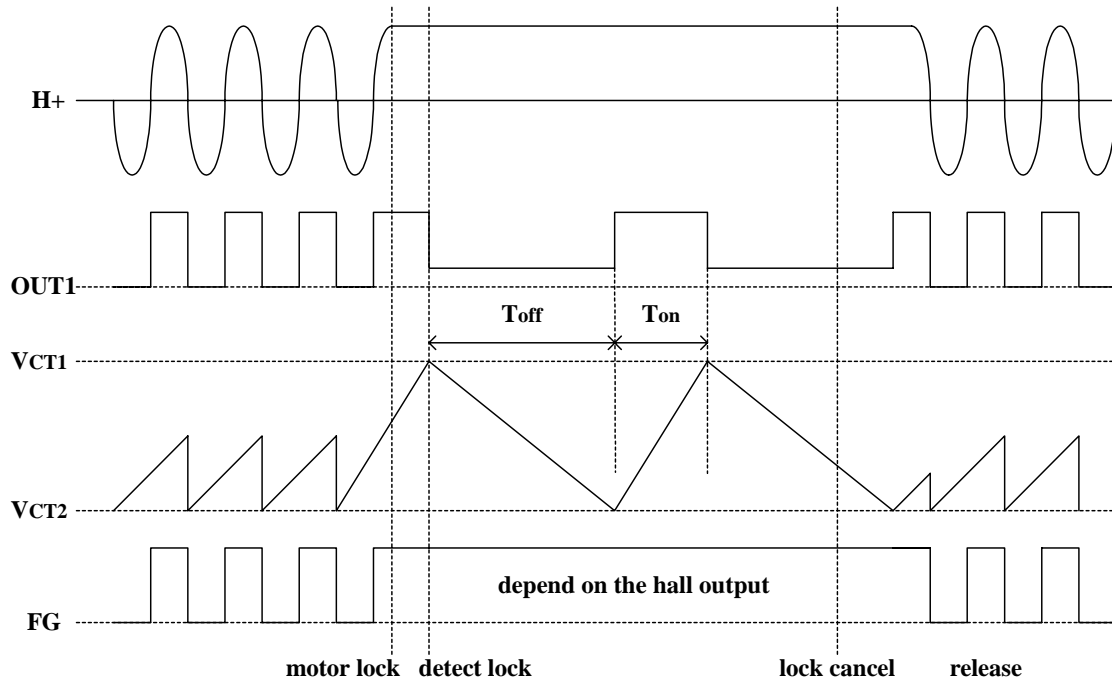
■ HALL SINGLE INPUT-OUTPUT TRUTH VALUE TABLE

H+	H-	OUT1	OUT2	FG
H	L	H	L	H
L	H	L	H	L

* CT=0V

■ LOCKUP PROTECTION / AUTOMATIC RECOVERY

Fig. 1



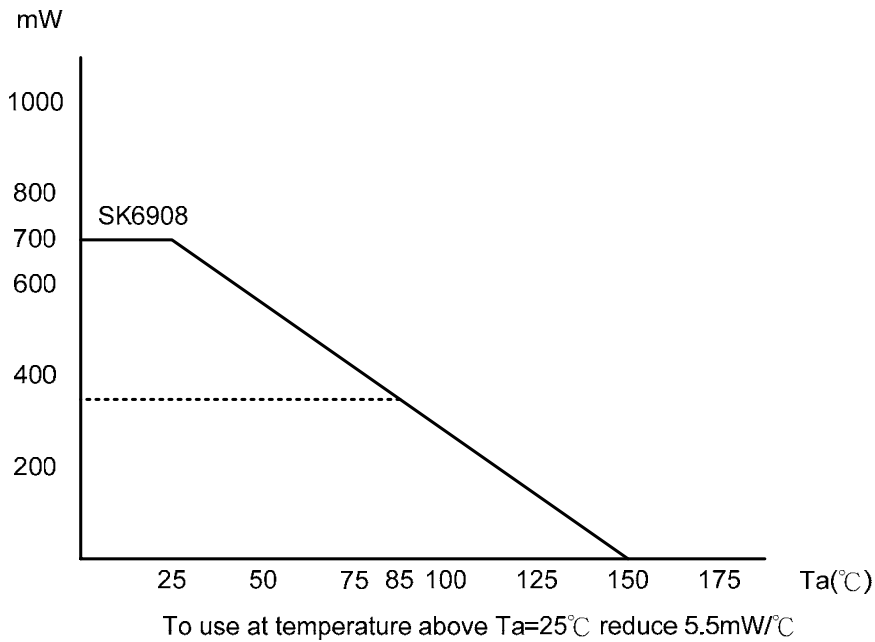
$$T_{on} \text{ (charge time)} = \frac{C \times (V_{CT1} - V_{CT2})}{I_{CT1}}$$

$$T_{off} \text{ (charge time)} = \frac{C \times (V_{CT1} - V_{CT2})}{I_{CT2}}$$

C : Value of capacitor at CT terminal

■ POWER DISSIPATION

Fig.-2



The maximum junctions temperature is 150°C in plastic packages, but for reasons of reliability, a lower number may be mandated.

$$P_T = (T_{J(MAX)} - T_{a(MAX)}) / \theta_{JA}$$

P_T = Total Power Dissipated by the Device

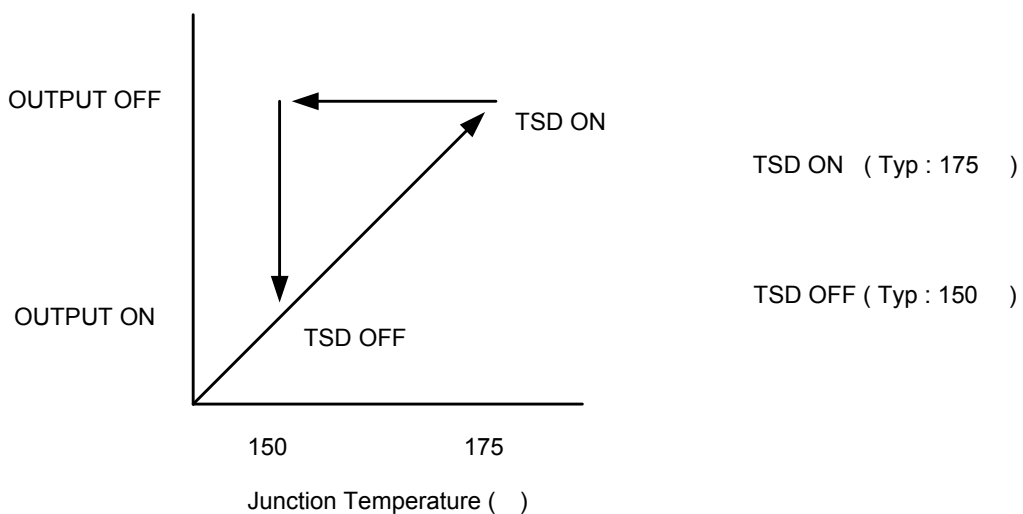
$T_{J(MAX)}$ = Maximum Junction Temperature

$T_{a(MAX)}$ = Maximum Ambient Temperature

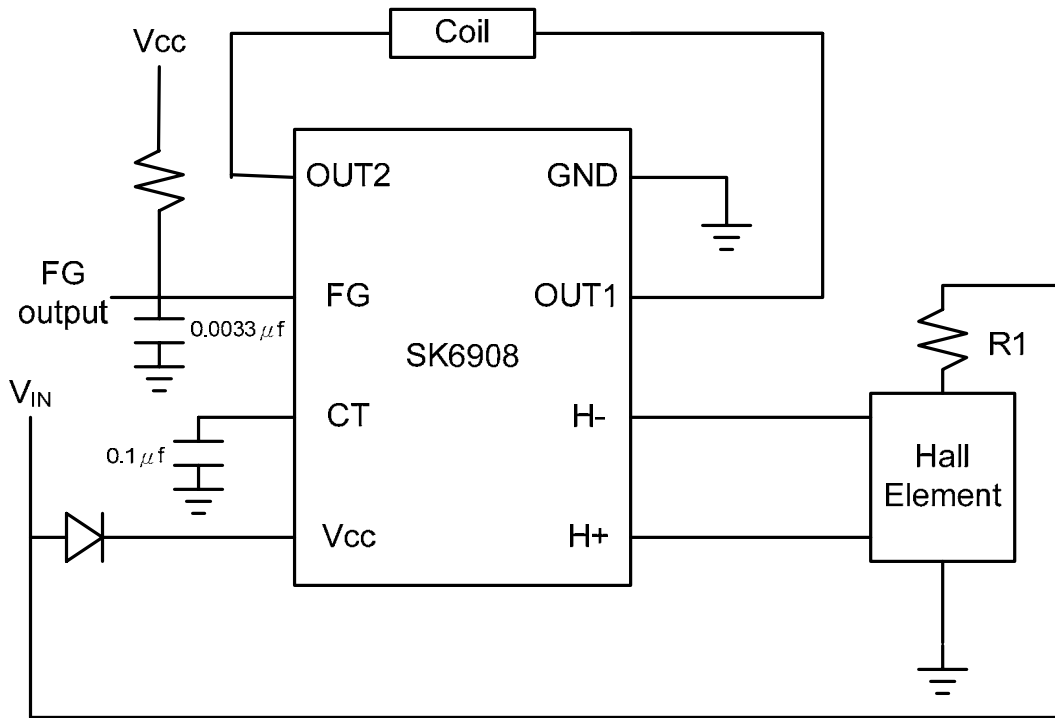
θ_{JA} = 175°C/W

■ THERMAL SHUTDOWN (TSD)

Fig.-3



■ TYPICAL APPLICATION CIRCUIT



UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice.