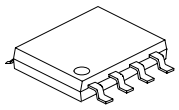
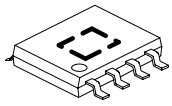
SK6908

LINEAR INTEGRATED CIRCUIT

SINGLE-PHASE DC-FAN MOTOR DRIVER



SOP-8



HSOP-8

*Pb-free plating product number: SK6908L

■ 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 pan

■ ORDERING INFORMATION

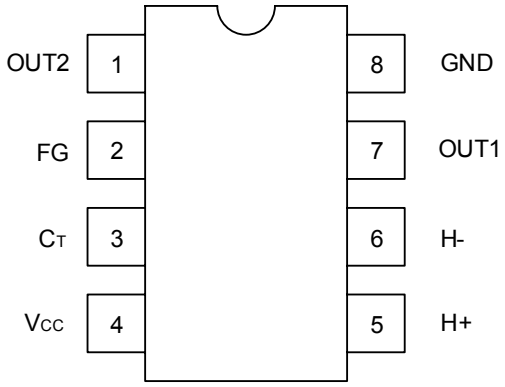
Order Number		Package	Packing
Normal	Lead Free Plating		
SK6908-S08-R	SK6908L-S08-R	SOP-8	Tape Reel
SK6908-S08-T	SK6908L-S08-T	SOP-8	Tube
SK6908-SM1-R	SK6908L-SM1-R	HSOP-8	Tape Reel
SK6908-SM1-T	SK6908L-SM1-T	HSOP-8	Tube

SK6908L-S08-R

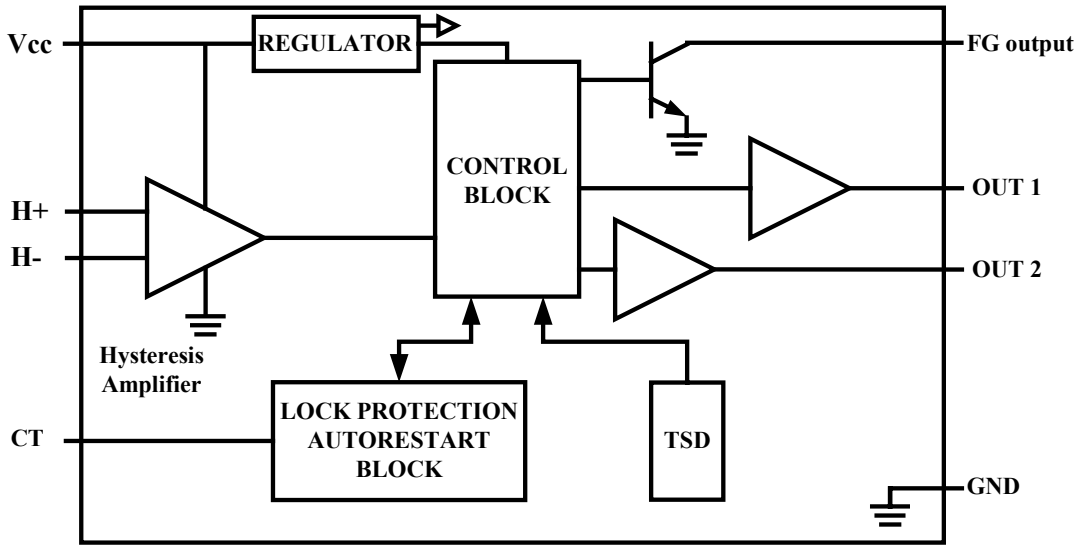
(1)Packing Type
(2)Package Type
(3)Lead Plating

(1) R: Tape Reel, T: Tube
(2) S08: SOP-8, SM1: HSOP-8
(3) L: Lead Free Plating Blank: Pb/Sn

■ PIN CONFIGURATION



■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATINGS (Ta = 25℃)

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℃ reduce 5.5mW/℃)	SOP-8	P_D	700	mW
	HSOP-8	P_D	1000	mW
Output Voltage		V_{OUT}	20	V
Hall input common mode voltage range		V_{HIC}	1.0 ~ Vcc-0.5	V
Operating ambient temperature		T_{OPR}	-20 ~ +100(Note1)	℃
Storage temperature		T_{STG}	-55 ~ +150	℃

Note 1.For operation in ambient temperatures above 25℃ ,the driver device must be derated based on a 150℃ 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℃~+70℃ operating temperature range and assured by design from -20℃~+100℃.

■ ELECTRICAL CHARACTERISTICS (Ta=25℃ , 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	uA
Capacitor discharge current	I_{CT2}	V 1PIN = 1.1V	0.3	0.5	0.8	uA
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	uA

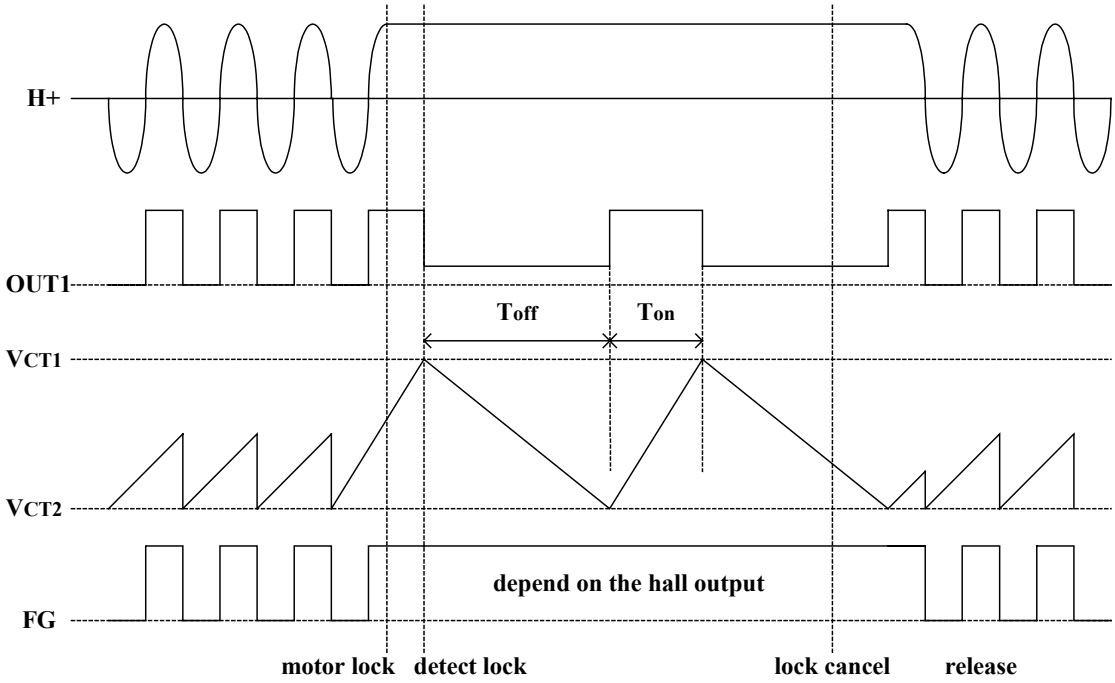
■ HALL SINGLE INPUT-OUTPUT TRUTH VALUE TABLE

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

* CT=0V

■ LOCKUP PROTECTION / AUTOMATIC RECOVERY

Fig. 1

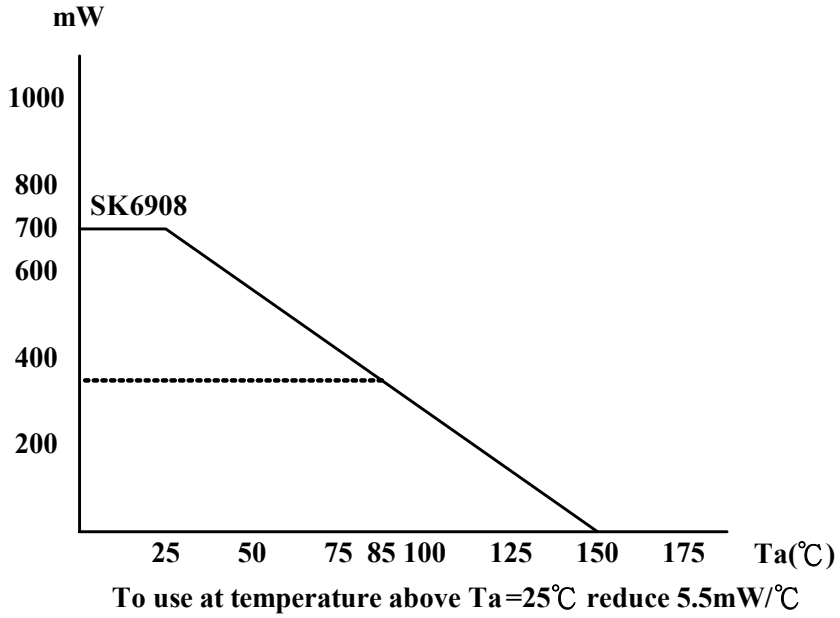


$$\text{Ton (charge time)} = \frac{C \times (V_{CT1}-V_{CT2})}{I_{CT1}} \qquad \text{Toff (charge time)} = \frac{C \times (V_{CT1}-V_{CT2})}{I_{CT2}}$$

C : Value of capcitor at CT terminal

■ POWER DISSIPATION

Fig.-2



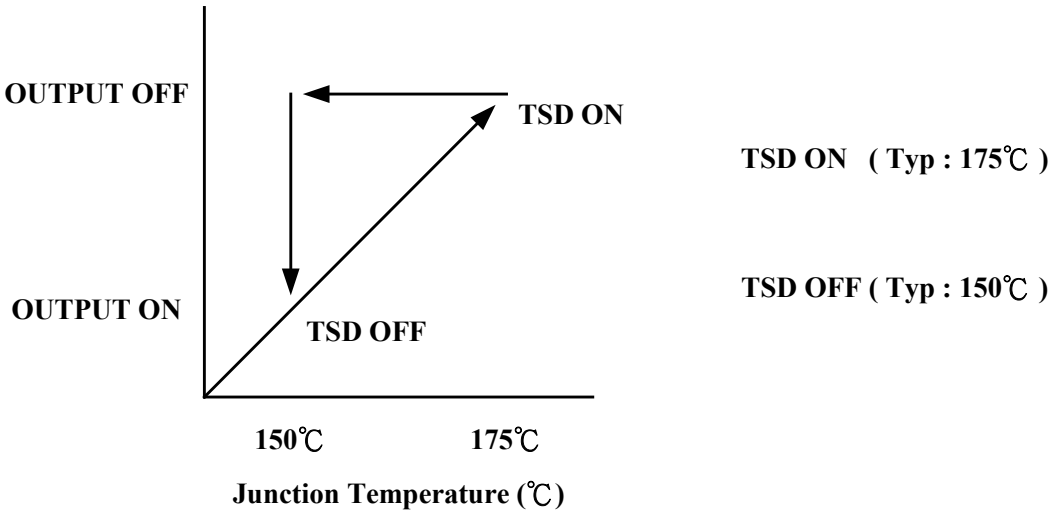
The maximum junctions temperature is 150°C in plastic packages, but for reasons of reliability, a lower number may be mandated.

$P_T = T_{J(MAX)} – Ta_{(MAX)} / \theta_{JA}$

P_T = Total Power Dissipated by the Device
$T_{J(MAX)}$ = Maximum Junction Temperature
$Ta_{(MAX)}$ = Maximum Ambient Temperature
θ_{JA} = I75°C/W

■ THERMAL SHUTDOWN(TSD)

Fig.-3



■ TYPICAL APPLICATION CIRCUIT