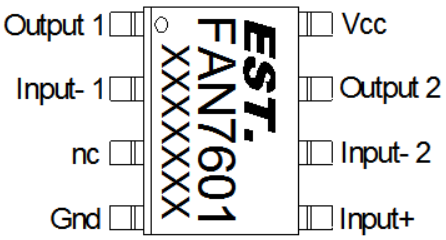
GENERAL DESCRIPTION

The FAN7601 is a single-phase DC brushless motor pre-driver with the variable speed function compatible with external PWM signal. FAN7601 built in fan lock, thermal and current limit circuit, it also provides soft start function to reduce peak current at power on and lock mode. FAN7601 has rotation speed detection output by FG pin.

FEATURES

- Single-phase full-wave pre-driver
- Soft-start function
- Variable speed control function
- Minimum speed setting
- Built-in lock protection and auto restart function
- FG(Rotation speed detection) output
- Built-in thermal protection function
- Package Type: SOP-8

PIN ARRANGEMENT



SOP-8

ORDERING INFORMATION

Device	Temperature Range		Package
FAN7601	-25℃ to +85℃		SOP-8

CIRCUIT SCHEMATIC

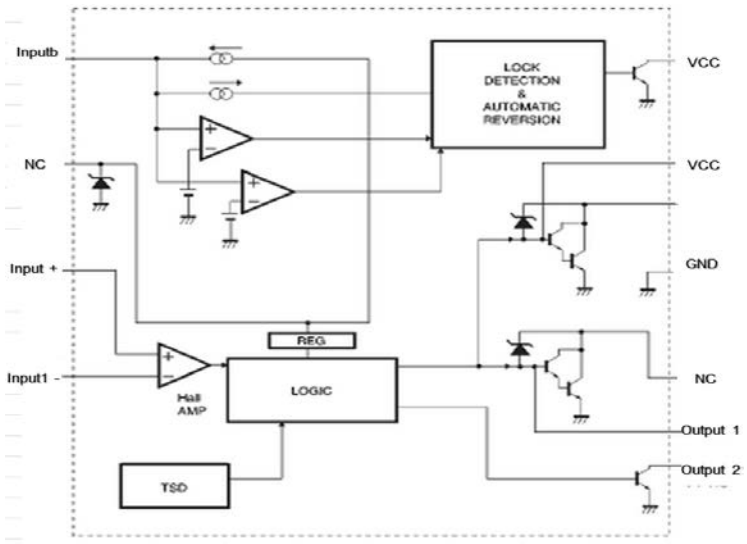


Diagram shown is for 1 comparator

ELECTRICAL CHARACTERISTICS VCC=5.0Vdc, 0 ℃≤TA ≤ 70 ℃(unless otherwise noted)

Item	Symbol	Min	Typ	Max	Unit
Voltage Gain RL ≥ 15K, VCC=15Vdc, TA=25℃	AVOL	50	200	---	V/mV
Large Signal Response Time Vin=TTL Logic Swing,Vref=1.4 Vdc VRL=5.0Vdc, RL=5.1K, TA=25℃	---	---	300	---	ns
Response Time (5) VRL=5.0Vdc, RL=5.1K, TA=25℃	tTLH	---	1.3	---	μs
Input Differential Voltage (6) All Vin≥ GND or V-Supply (if used)	VID	---	---	VCC	V
Output Sink Current Vin-≥ 1.0Vdc, Vin+=0Vdc Vo≤ 1.5Vdc, TA=25℃	Isink	6.0	16	---	mA
Output Saturation Voltage Vin-≥ 1.0Vdc,Vin+=0,ISink ≤ 4.0mA TA=25℃	VOL	---	150	400	mV
0 ℃≤TA ≤ 70 ℃		---	---	700	
Output Leakage Current Vin-=0Vdc, Vin+ ≥ 1.0Vdc Vo=5.0Vdc, TA=25℃	IOL	---	0.1	---	nA
Vin-=0Vdc, Vin+ ≥ 1.0Vdc Vo=30Vdc, 0 ℃≤TA ≤ 70 ℃		---	---	1000	
Supply Current RL=∞, TA=25℃	LCC	---	0.4	1.0	mA
RL=∞, VCC=30V℃		---	---	2.5	

ABSOLUTE MAXIMUM RATINGS

Item	Symbol	Rating	Unit
Power Supply Voltage	VCC	+36 or ± 18	V
Input Differential Voltage Range	VIDR	36	V
Input Common Mode Voltage Range	VICR	-0.3 to +36	V
Output Short Circuit-to-Ground	ISC	Continuous	mA
Output Sink Current (1)	ISink	20	
Power Dissipation @25℃	PD	570	Mw
Derate above25℃	1/R JA	5.7	mW/℃
Operating Ambient Temperature Range	TA	0 to +70	℃
Operating Junction Temperature	TJ	125	℃
Storage Temperature Range	TS	-65 to 150	℃

*Tlow=0℃ ,Thigh=+70℃

Notes:

1. The max output current may be as high as 20mA, independent of the magnitude of VCC, output short circuits to VCC can cause excessive heating and eventual destruction.
2. At output switch point, VO=1.4Vdc, RS=0 with VCC from 5.0Vdc to 30Vdc, and over the full input common mode range (0V to VCC=-1.5V).
3. Due to the PNP transistor inputs, bias current will flow out of the inputs. This current is essentially constant,independent of the output state, therefore, no loading changes will exist on the input lines.
4. Input common mode of either input should not be permitted to go more than 0.3V negative of ground or minus supply. The upper limit of common mode range is VCC –1.5V.

APPLICATION INFORMATION

These dual comparators feature high gain, wide bandwidth characteristics. This gives the device oscillation tendencies if the outputs are capacitively coupled to the inputs via stray capacitance. This oscillation manifests itself during output transitions (VOL to VOH).To alleviate this situation, input resistors<10kΩ should be used.

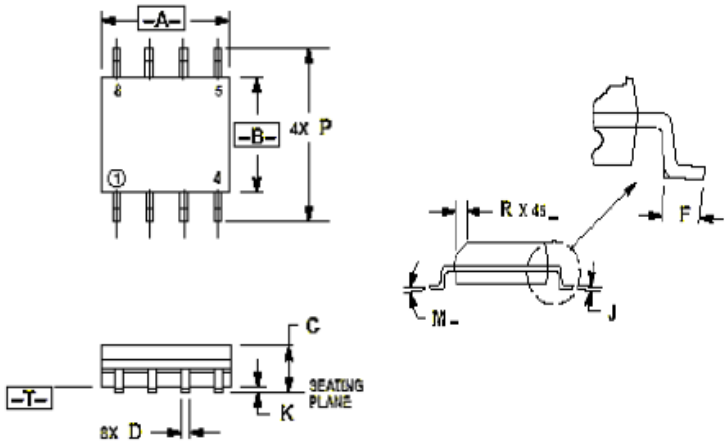
The addition of positive feedback (<10mV) is also recommended. It is good design practice to ground all unused pins.

Differential input voltages may be larger than supply voltage without damaging the comparator’s inputs. Voltages more negative than –0.3V should not be used.

EXTERNAL DIMENSIONS

SOP-8

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	5.00	5.20	0.196	0.205
B	3.80	4.00	0.150	0.157
C	1.35	1.75	0.054	0.068
D	0.35	0.49	0.014	0.019
F	0.40	1.25	0.016	0.049
G	1.27 BSC		0.050 BSC	
J	0.18	0.25	0.007	0.009
K	0.10	0.25	0.004	0.009
M	0°	7°	0°	7°
P	5.80	6.20	0.229	0.244
R	0.25	0.50	0.010	0.019



Shipping packing :

★**SOP-8 tape & Reel:**