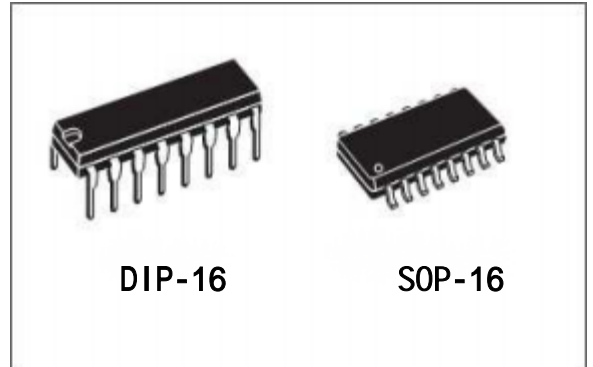




### 特性

- 工作电压范围 8—35V;
- 5.1 基准电压, 精度 $\pm 1\%$
- 振荡频率范围 100Hz—500KHz
- 振荡器同步信号输入端
- 死区时间可调
- 内置软启动电路
- 逐步脉冲关断
- 带滞回电压的输入欠压锁定
- PWM 锁定功能, 禁止多脉冲

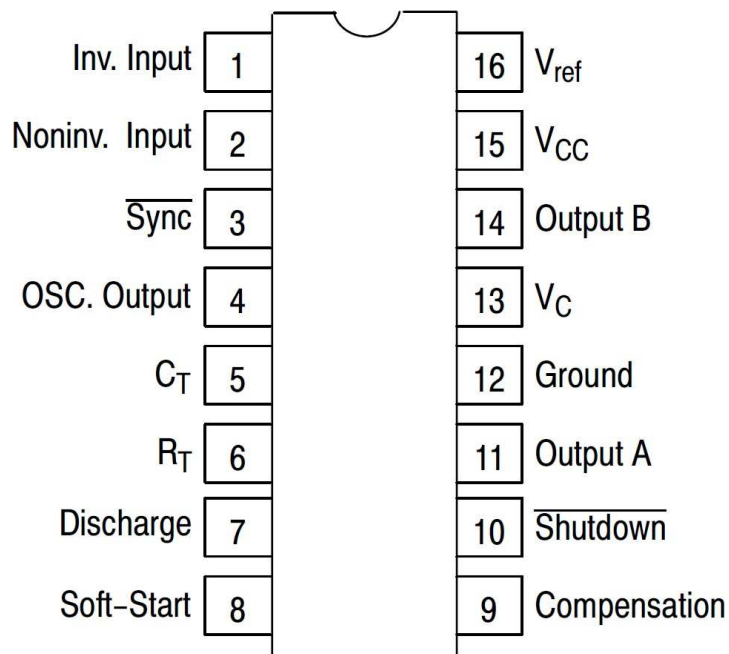


### 性能描述

芯片+5.1 基准电压精度为 $\pm 1\%$ , 由于基准电压值在误差放大器的输入共模范围内, 因此无需外接电阻。SG3525 可以工作在主从模式、也可以与外部时钟同步。通过  $C_T$  与放电端之间的电阻可以调节死区时间。芯片内部的其它功能电路还包括: 软启动电路、关断电路、欠压电路。

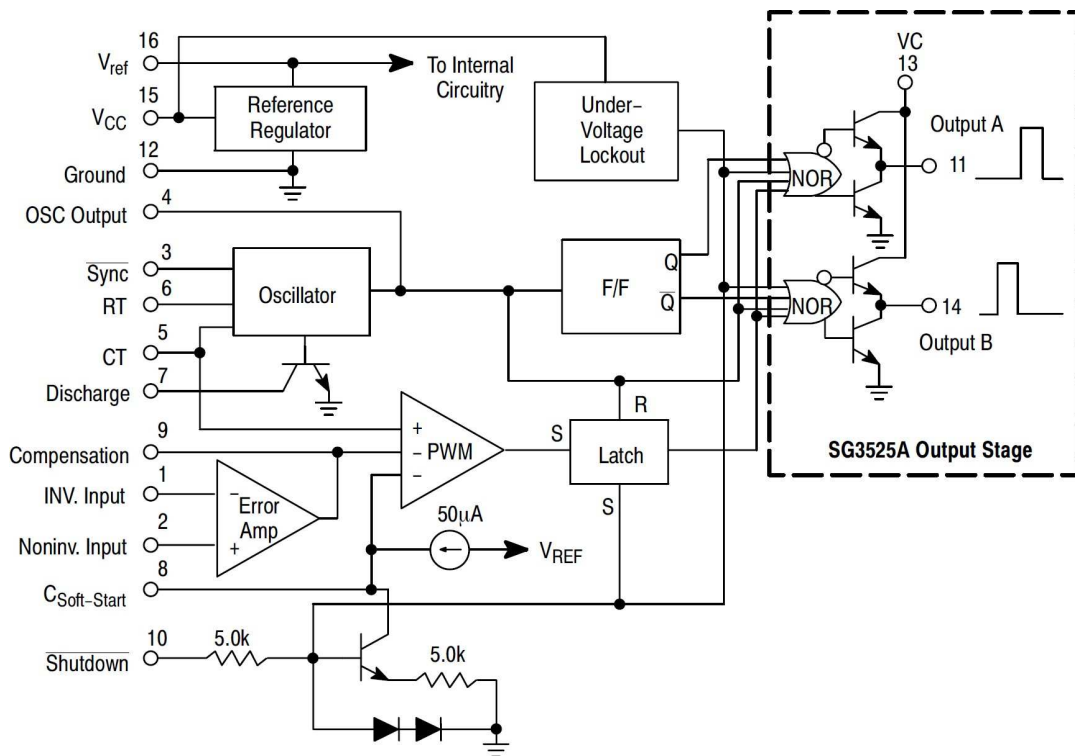
SG3525 控制芯片的输出级为大功率图腾柱式输出, 其源电流和吸电流超过 200mA, 其给出逻辑电平为“或非”逻辑, “断”状态时为低电平。

### 引脚图





内部框图



极限工作参数

Parameter	Symbol	Value	Unit
Supply Voltage	VCC	40	V
Collector Supply Voltage	VC	40	V
Output Current, Sink or Source	IO	500	mA
Reference Output Current	IREF	50	mA
Oscillator Charging Current	ICHG(OSC)	5	mA
Power Dissipation (TA = 25°C)	PD	1000	m/W
Operating Temperature	TOPR	0 ~ +70	°C
Storage Temperature	TSTG	-65 ~ +150	°C
Lead Temperature (Soldering, 10 sec)	TLEAD	+300	°C



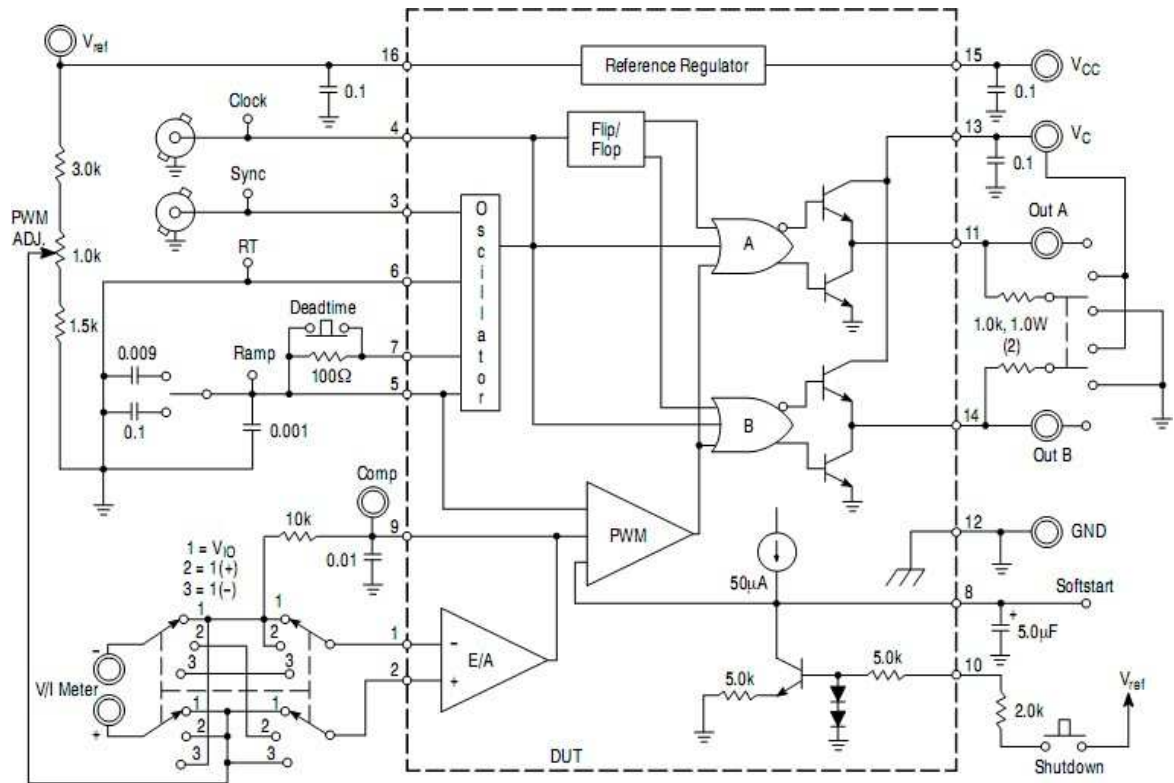
参数 (V<sub>CC</sub>=20V)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
<b>REFERENCE SECTION</b>						
Reference Output Voltage	V <sub>REF</sub>	T <sub>J</sub> = 25°C	5.0	5.1	5.2	V
Line Regulation	ΔV <sub>REF</sub>	V <sub>CC</sub> = 8 to 35V	-	9	20	mV
Load Regulation	ΔV <sub>REF</sub>	I <sub>REF</sub> = 0 to 20mA	-	20	50	mV
Short Circuit Output Current	I <sub>SC</sub>	V <sub>REF</sub> = 0, T <sub>J</sub> = 25°C	-	80	100	mA
Total Output Variation (Note 1)	ΔV <sub>REF</sub>	Line, Load and Temperature	4.95	-	5.25	V
Temperature Stability (Note 1)	STT	-	-	20	50	mV
Long Term Stability (Note 1)	ST	T <sub>J</sub> = 125°C, 1 KHRs	-	20	50	mV
<b>OSCILLATOR SECTION</b>						
Initial Accuracy (Note 1, 2)	ACCUR	T <sub>J</sub> = 25°C	-	± 3	± 6	%
Frequency Change With Voltage	Δf/ΔV <sub>CC</sub>	V <sub>CC</sub> = 8 to 35V (Note 1, 2)	-	± 0.8	± 2	%
Maximum Frequency	f <sub>(MAX)</sub>	R <sub>T</sub> = 2KΩ, C <sub>T</sub> = 470pF	400	430	-	KHz
Minimum Frequency	f <sub>(MIN)</sub>	R <sub>T</sub> = 200KΩ, C <sub>T</sub> = 0.1uF	-	60	120	Hz
Clock Amplitude (Note 1, 2)	V <sub>(CLK)</sub>	-	3	4	-	V
Clock Width (Note 1, 2)	t <sub>w</sub> (CLK)	T <sub>J</sub> = 25°C	0.3	0.6	1	μs
Sync Threshold	V <sub>TH</sub> (SYNC)	-	1.2	2	2.8	V
Sync Input Current	I <sub>i</sub> (SYNC)	Sync = 3.5V	-	1.3	3.5	mA

<b>ERROR AMPLIFIER SECTION (V<sub>CM</sub> = 5.1V)</b>						
Input Offset Voltage	V <sub>IO</sub>	-	-	1.5	10	mV
Input Bias Current	I <sub>BIAS</sub>	-	-	1	10	μA
Input Offset Current	I <sub>IO</sub>	-	-	0.1	1	μA
Open Loop Voltage Gain	G <sub>VO</sub>	R <sub>L</sub> ≥ 10MΩ	60	80	-	dB
Common Mode Rejection Ratio	CMRR	V <sub>CM</sub> = 1.5 to 5.2V	60	90	-	dB
Power Supply Rejection Ratio	PSRR	V <sub>CC</sub> = 8 to 3.5V	50	60	-	dB
<b>PWM COMPARATOR SECTION</b>						
Minimum Duty Cycle	D <sub>(MIN)</sub>	-	-	-	0	%
Maximum Duty Cycle	D <sub>(MAX)</sub>	-	45	49	-	%
Input Threshold Voltage (Note 2)	V <sub>TH1</sub>	Zero Duty Cycle	0.7	0.9	-	V
Input Threshold Voltage (Note 2)	V <sub>TH2</sub>	Max Duty Cycle	-	3.2	3.6	V
<b>SOFT-START SECTION</b>						
Soft Start Current	I <sub>SOFT</sub>	V <sub>SD</sub> = 0V, V <sub>SS</sub> = 0V	25	51	80	μA
Soft Start Low Level Voltage	V <sub>SLL</sub>	V <sub>SD</sub> = 25V	-	0.3	0.7	V
Shutdown Threshold Voltage	V <sub>TH</sub> (SD)	-	0.6	0.8	1	V
Shutdown Input Current	I <sub>N</sub> (SD)	V <sub>SD</sub> = 2.5V	-	0.3	1	mA
<b>OUTPUT SECTION</b>						
Low Output Voltage I	V <sub>OL I</sub>	I <sub>SINK</sub> = 20mA	-	0.1	0.4	V
Low Output Voltage II	V <sub>OL II</sub>	I <sub>SINK</sub> = 100mA	-	0.05	2	V
High Output Voltage I	V <sub>CH I</sub>	I <sub>SOURCE</sub> = 20mA	18	19	-	V
High Output Voltage II	V <sub>CH II</sub>	I <sub>SOURCE</sub> = 100mA	17	18	-	V
Under Voltage Lockout	V <sub>UV</sub>	V <sub>8</sub> and V <sub>9</sub> = High	6	7	8	V
Collector Leakage Current	I <sub>LKG</sub>	V <sub>CC</sub> = 35V	-	80	200	μA
Rise Time (Note 1)	t <sub>R</sub>	C <sub>L</sub> = 1uF, T <sub>J</sub> = 25°C	-	80	600	ns
Fall Time (Note 1)	t <sub>F</sub>	C <sub>L</sub> = 1uF, T <sub>J</sub> = 25°C	-	70	300	ns
<b>STANDBY CURRENT</b>						
Supply Current	I <sub>CC</sub>	V <sub>CC</sub> = 35V	-	12	20	mA

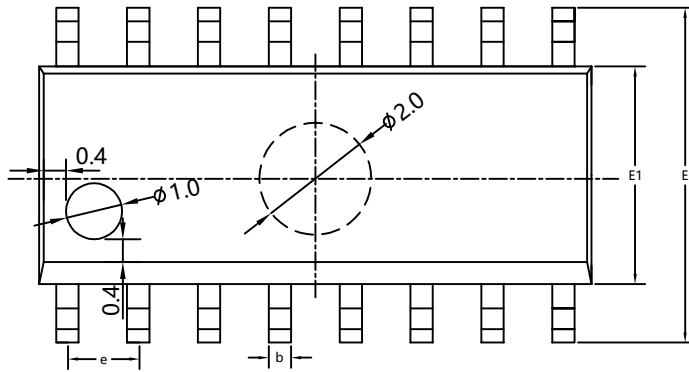
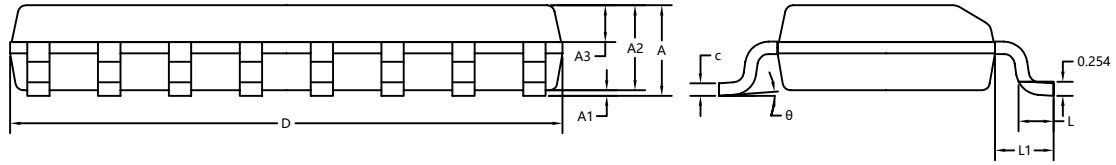


测试线路





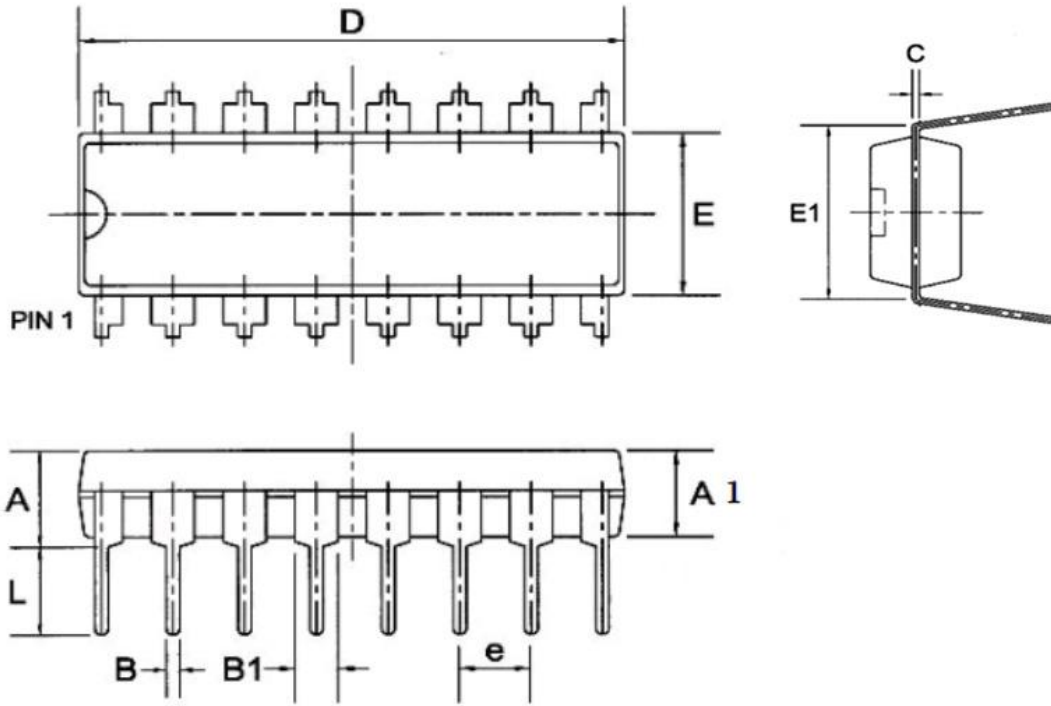
SOP-16封装信息



SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	1.50	1.60	1.70
A1	0.10	0.15	0.25
A2	1.40	1.45	1.50
A3	0.60	0.65	0.70
b	0.30	0.40	0.50
c	0.15	0.20	0.25
D	9.80	9.90	10.00
E	5.80	6.00	6.20
E1	3.85	3.90	3.95
e	1.27BSC		
L	0.50	0.60	0.70
L1	1.05BSC		
theta	0°	4°	8°



DIP-16封装信息



Symbol	Dimensions in Millimeters		
	Min	Nom	Max
A	--	--	4.31
A1	3.15	3.30	3.65
B	--	0.50	--
B1	--	1.6	--
C	--	0.27	--
D	19.00	19.20	19.60
E	6.20	6.50	6.60
E1	--	8.0	--
e	--	2.3	--
L	3.00	3.20	3.60



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