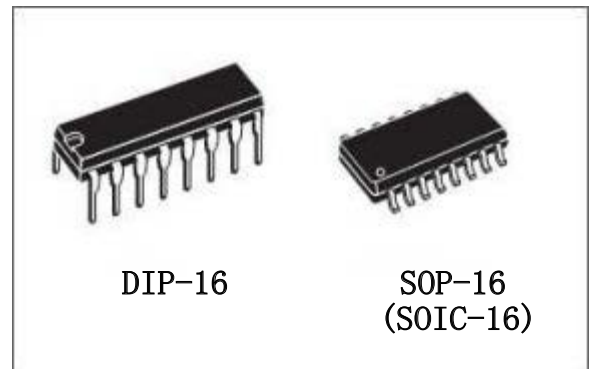




特性

- 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

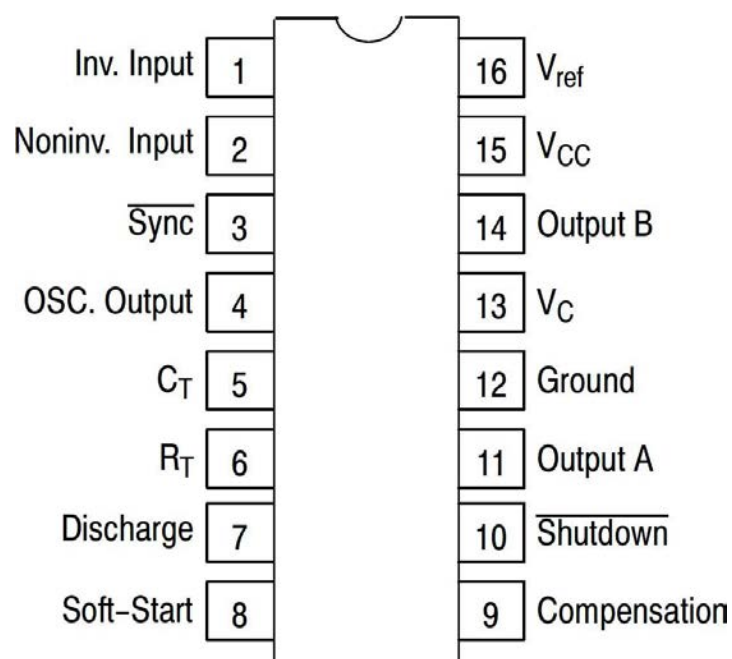


性能描述

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。SG3525AP013TR 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。

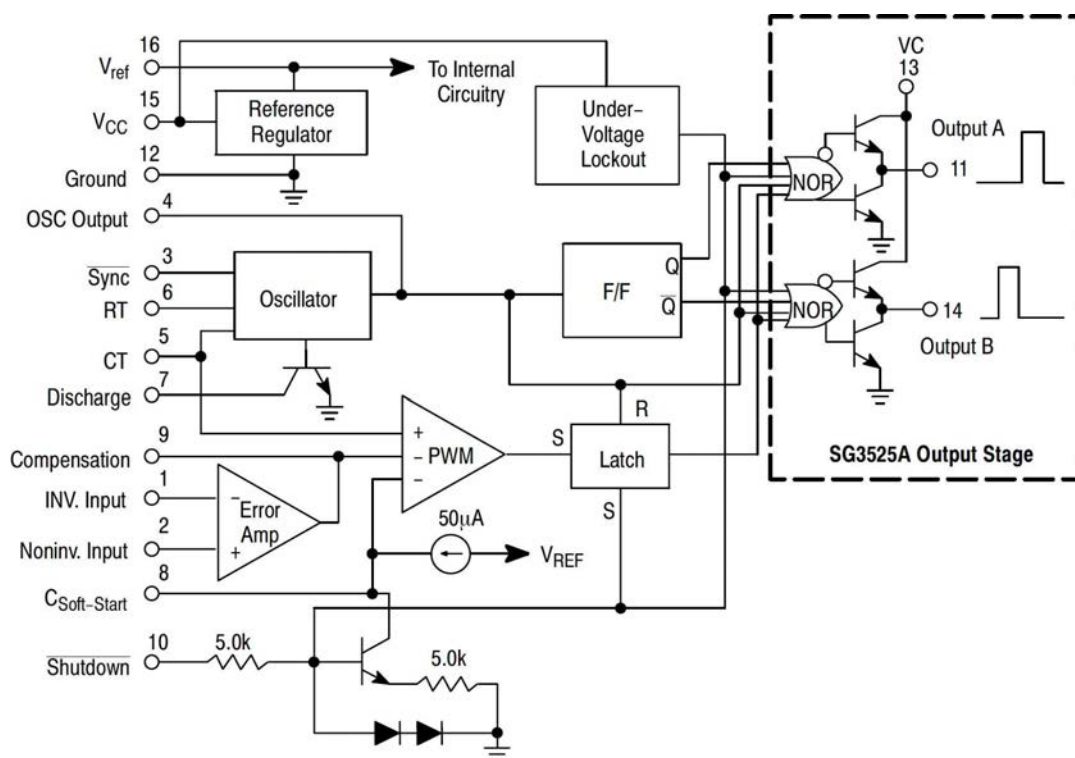
SG3525AP013TR 控制芯片的输出级为大功率图腾柱式输出, 其源电流和吸电流超过 200mA, 其给出逻辑电平为“或非”逻辑, “断”状态时为低电平。

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



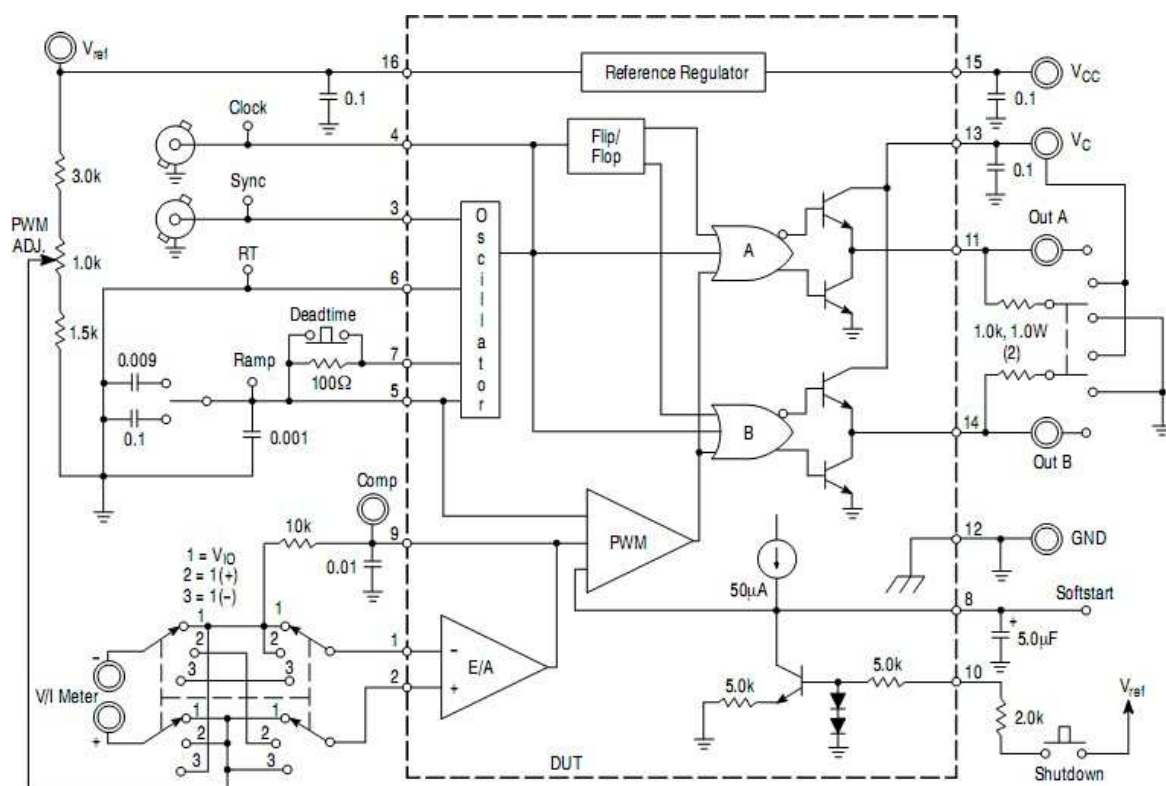
参数 (V_{CC}=20V)

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

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

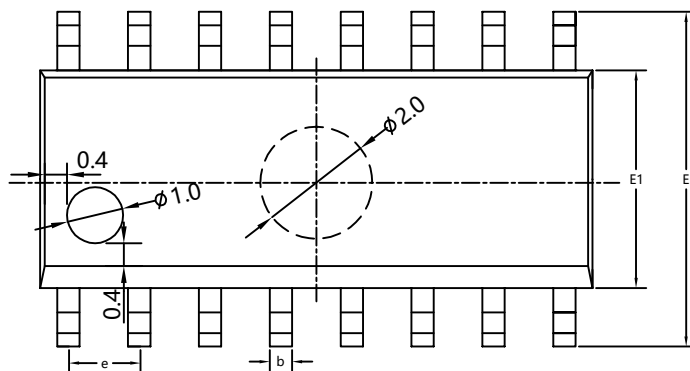
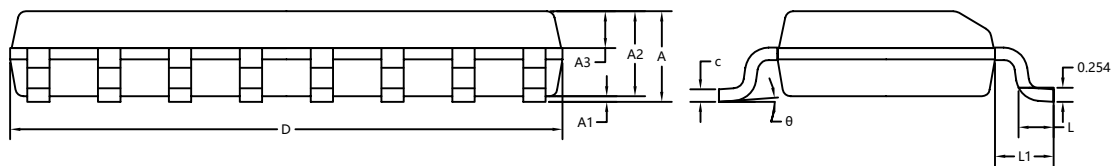


测试线路





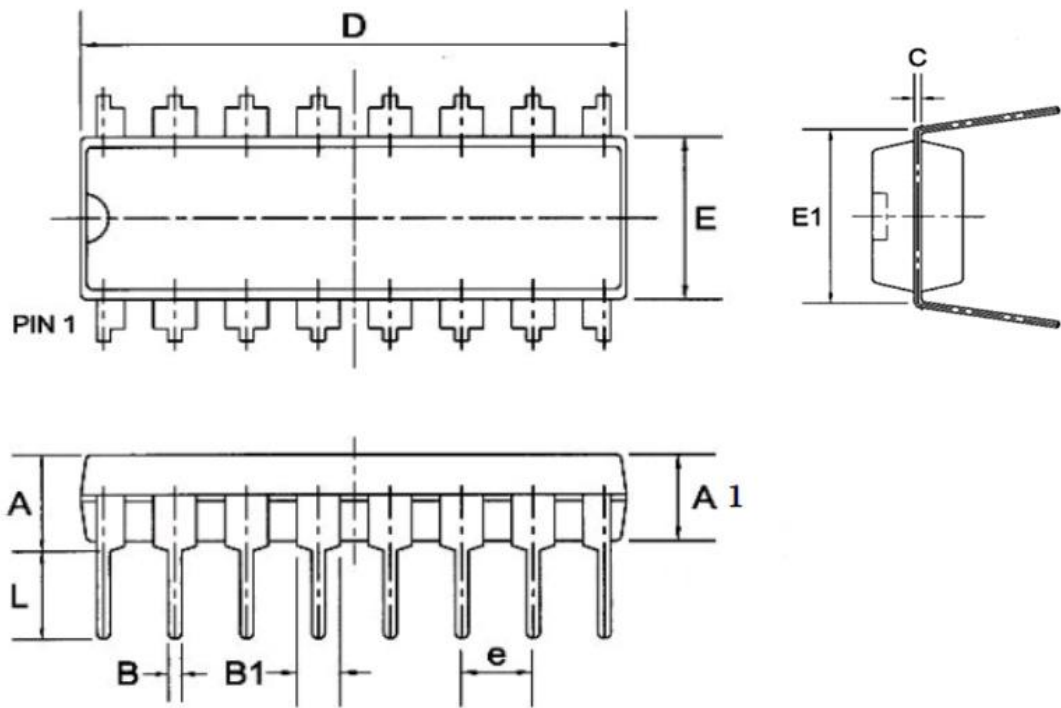
SOP-16(SOIC-16)封装信息



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		
θ	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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