1.产品特性：

ULN2803A为 8 路达林顿结构电路，每路的输出电流为 500mA，峰值电流为 600mA，输出电压为 50V，采用共发射极结构，每路可以独立输出。

该电路常用于驱动各种负载，如直流发动机、LED 显示灯、大功率缓存和 5V TTL、CMOS 等通用逻辑电路。

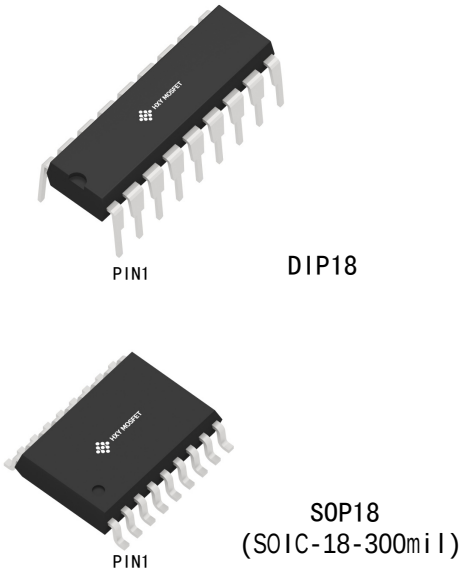


图 1 ULN2803A 电路外形图

2.封装形式及管脚定义

ULN2803A采用 DIP18.SOP18(SOIC-18-300mil)塑封形式；

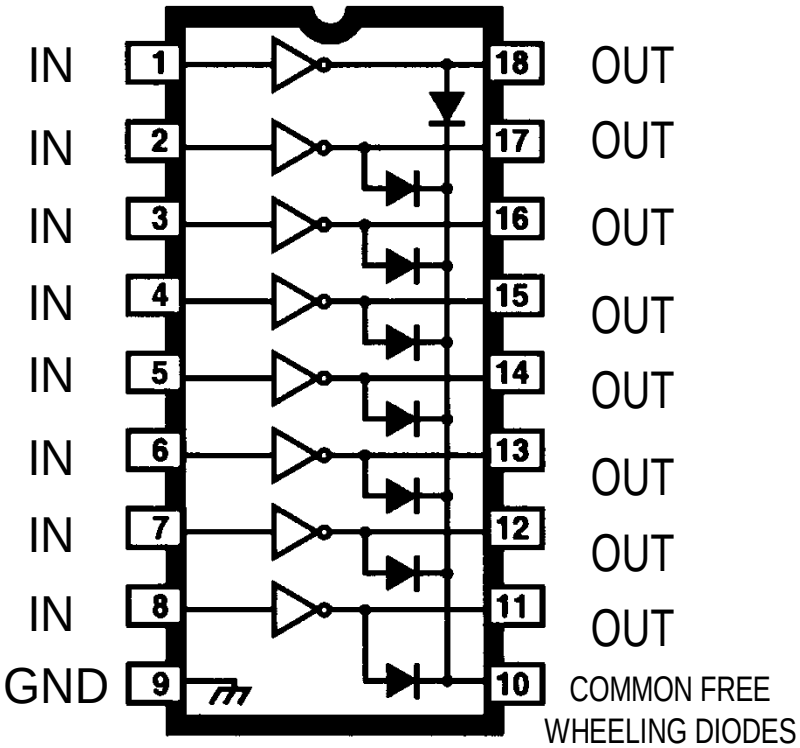


图 2 ULN2803A管脚定义图

3.最大额定值

表1 最大额定值

符号	参数	最大额定值	单位
Vo	输出电压	50	V
Vin	输入电压	30	V
Ic	输出电流	500	mA
Ib	输入电流	25	mA

4.电路原理图

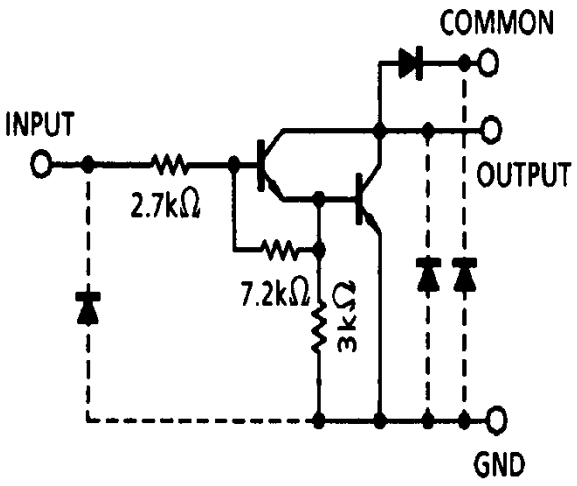


图 3 ULN2803A 电路原理图

5.电参数

表2 测试电参数

Symbol	参数说明	测试条件	Min.	Typ.	Max.	单位	测试图
I_{CEX}	输出漏电流	V_{CE}=50V	—	—	50.0	μA	Figure 1a.
$V_{CE(sat)}$	集电极-发射极饱和压降	I_C=100MA，I_B=250μA	—	0.9	1.1	V	Figure 2.
		I_C=200MA，I_B=350μA	—	1.1	1.3		
		I_C=350MA，I_B=500μA	—	1.3	1.6		
$I_{i(on)}$	输入开启电流	ULN2803A，V_i=3.85V	—	0.93	1.35	mA	Figure 3.
$V_{i(on)}$	输入开启电压	V_{CE}=2.0V，I_C=200mA V_{CE}=2.0V，I_C=250mA V_{CE}=2.0V，I_C=300mA	—	—	2.4 2.7 3.0	V	Figure 5.
I_R	二极管漏电流	V_R=50V	-4.0	—	50.0	μA	Figure 6.
V_F	二极管正向压降	I_F=350mA	—	1.7	2	V	Figure 7.
I_{CEX-1V}	输出漏电流	V_{CE}=50V，V_i=1V	-5	—	80	μA	Figure 1b.

6.测试图

Figure 1a.

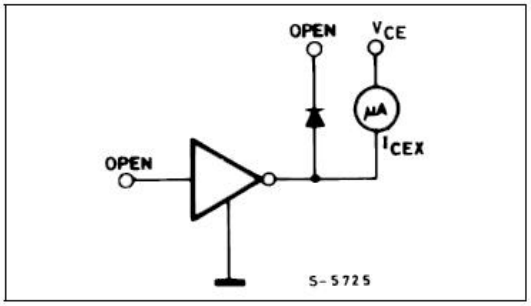


Figure 1b.

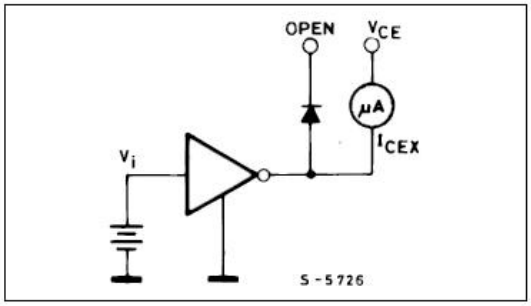


Figure 2.

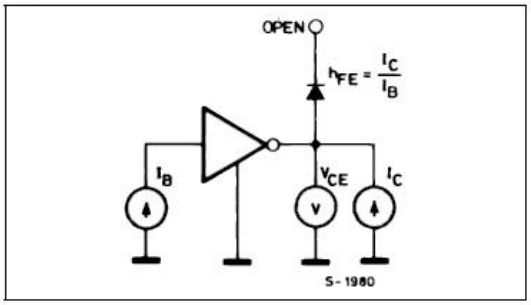


Figure 3.

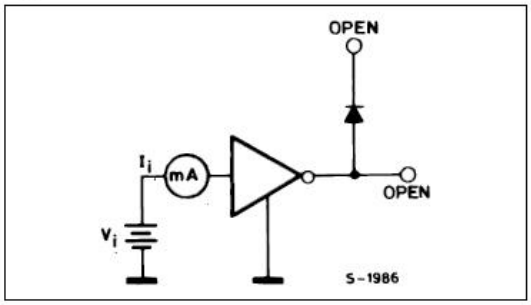


Figure 4.

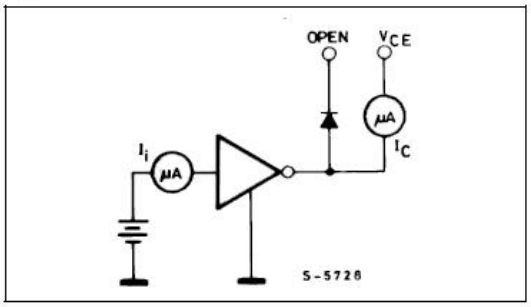


Figure 5.

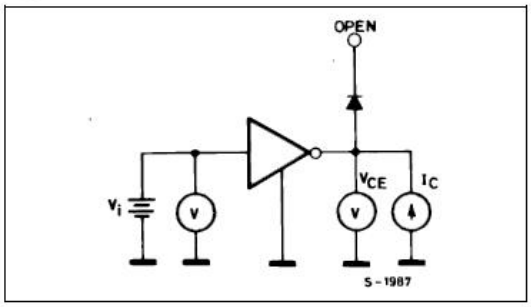


Figure 6.

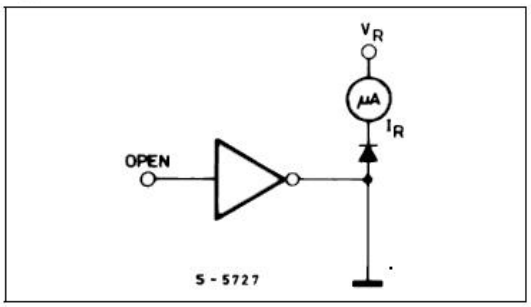


Figure 7.

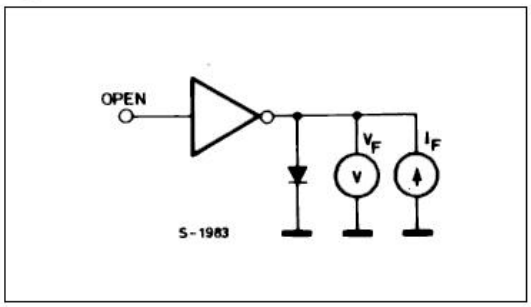


图 4 测试线路图

7.特性曲线图

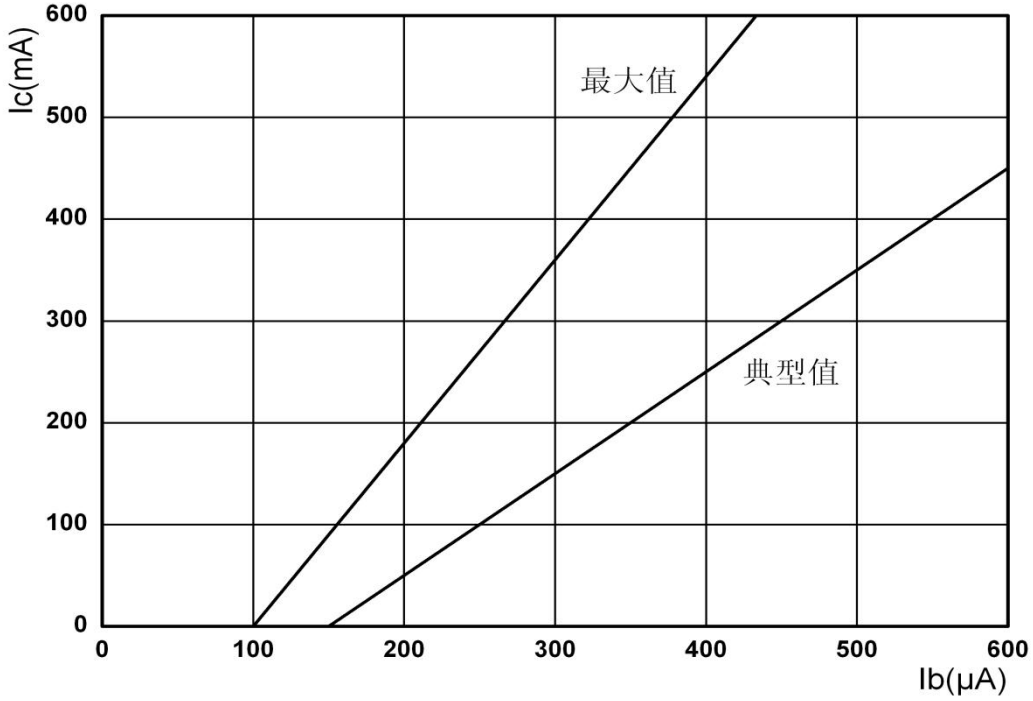


图 5 输出电压和输入电流特性曲线图

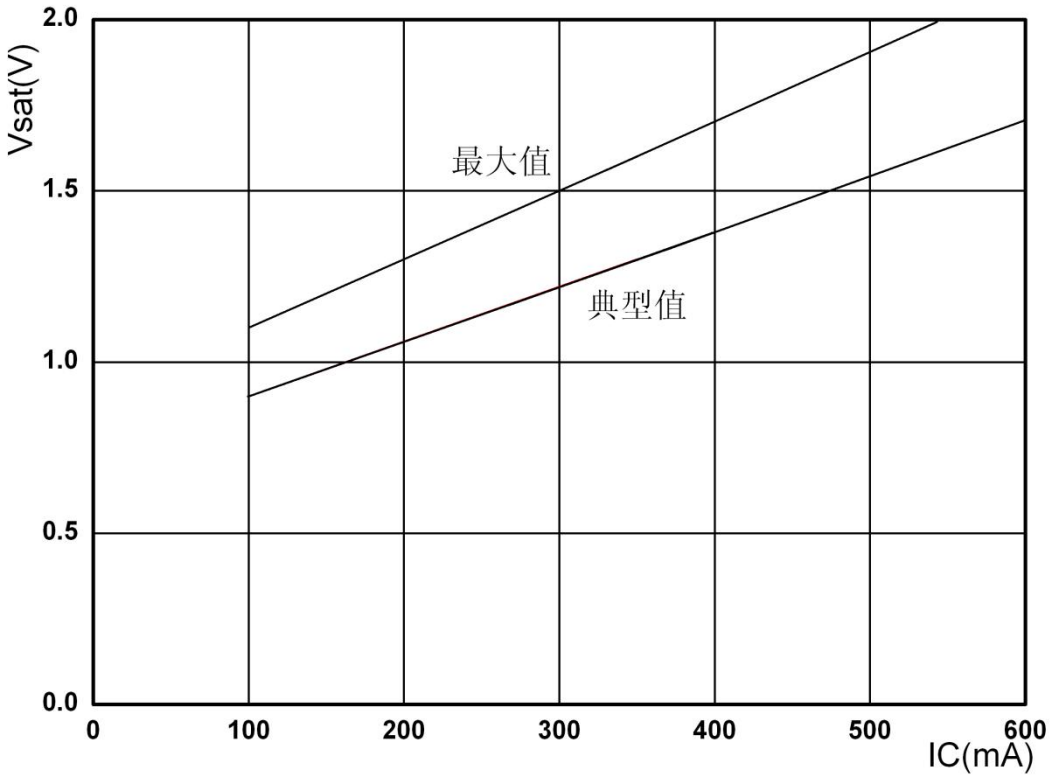
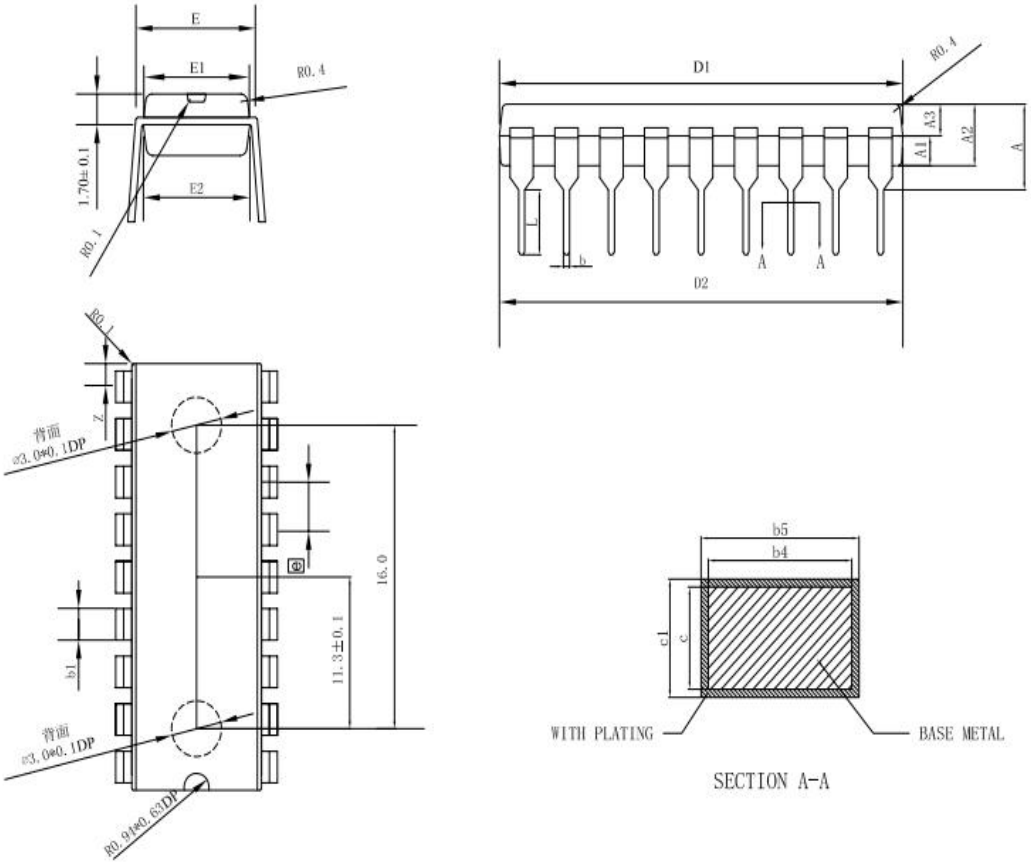


图 6 饱和压降和输出电压特性曲线图

8.封装信息

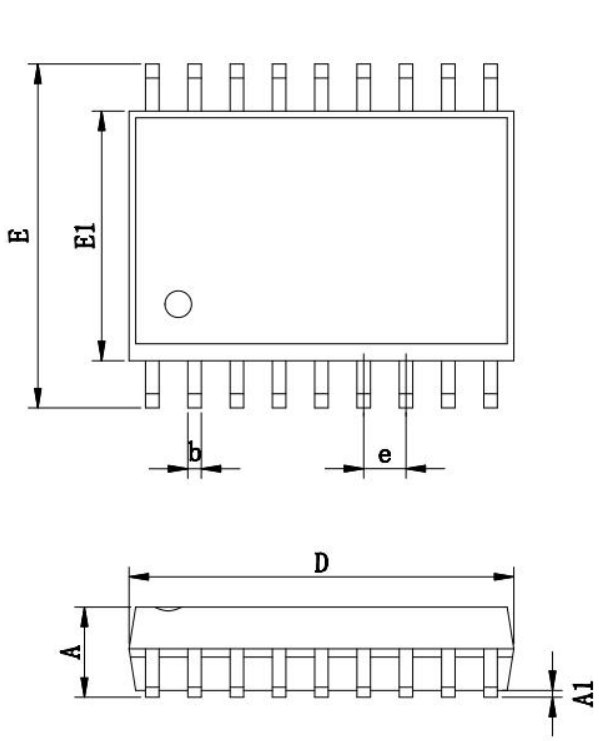
DIP18



symbol	Min	Nom	Max
A	3.900	---	4.350
A1	1.450	1.650	1.850
A2	3.200	3.300	3.400
A3	1.450	1.650	1.850
b	0.464	0.479	0.494
L	3.215	3.315	3.415
D1	22.760	22.900	23.040
D2	22.760	22.900	23.040
b1	1.499	1.524	1.550
Φ	2.515	2.540	2.565
Z	1.210	1.310	1.410
E	7.510	7.900	8.000
E1	6.380	6.580	6.780
E2	6.210	6.500	6.790
c	0.244	0.254	0.264
c1	0.251	---	0.284
b4	0.447	0.457	0.467
b5	0.454	---	0.487

NOTE:
1. All dimensions are in mm.
2. Dim D1/D2 & E1/E2 does not include plastic flash.
Flash: Plastic residual around body edge after dejunk/singulation.
3. Dim b does not include dambar protrusion/intrusion.
4. Plating thickness 0.005~0.015 mm.

SOP18
(SOIC-18-300mil)



SYMBOL	MILLIMETER		
	MIN	NOM	MAX
A	--	--	2.65
A1	0.10	--	0.30
b	0.35	--	0.48
D	11.25	11.45	11.76
E	10.10	10.30	10.64
E1	7.30	7.50	7.70
e	1.27BSC		
L	0.50	--	1.00
α°	0°	--	8°
C	0.19	--	0.29

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