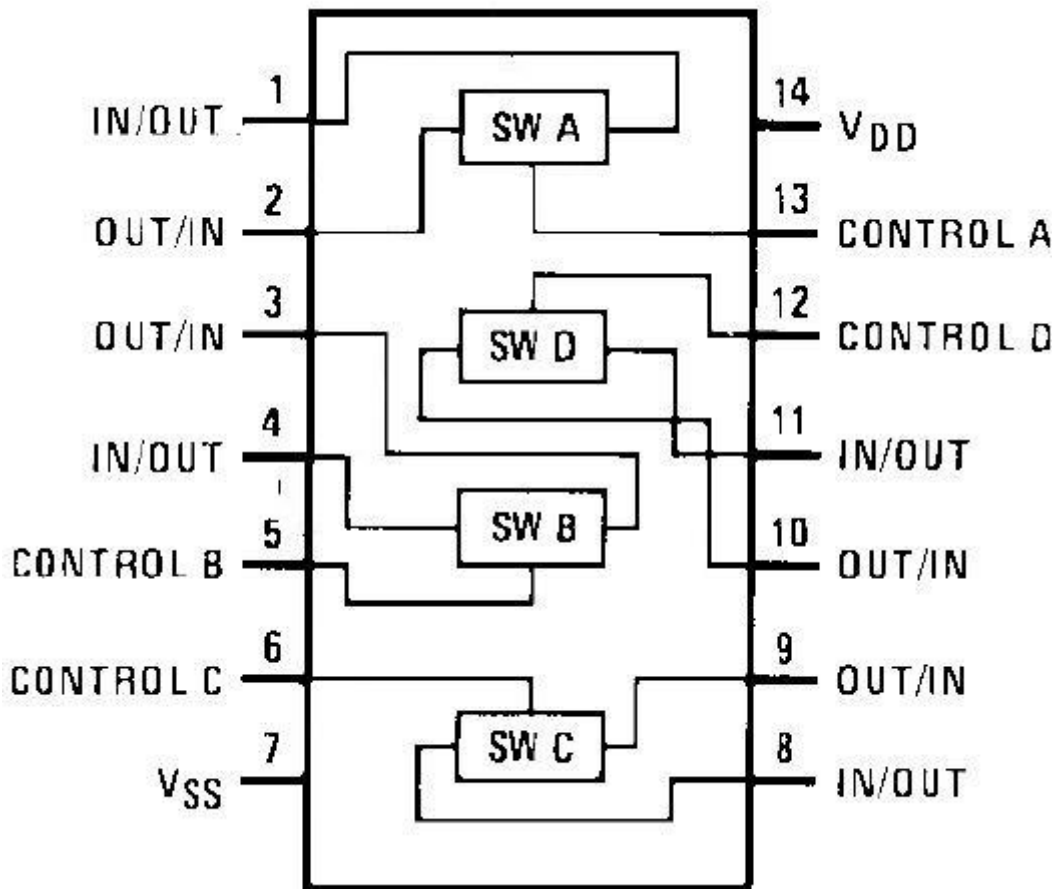


CD4066中文资料

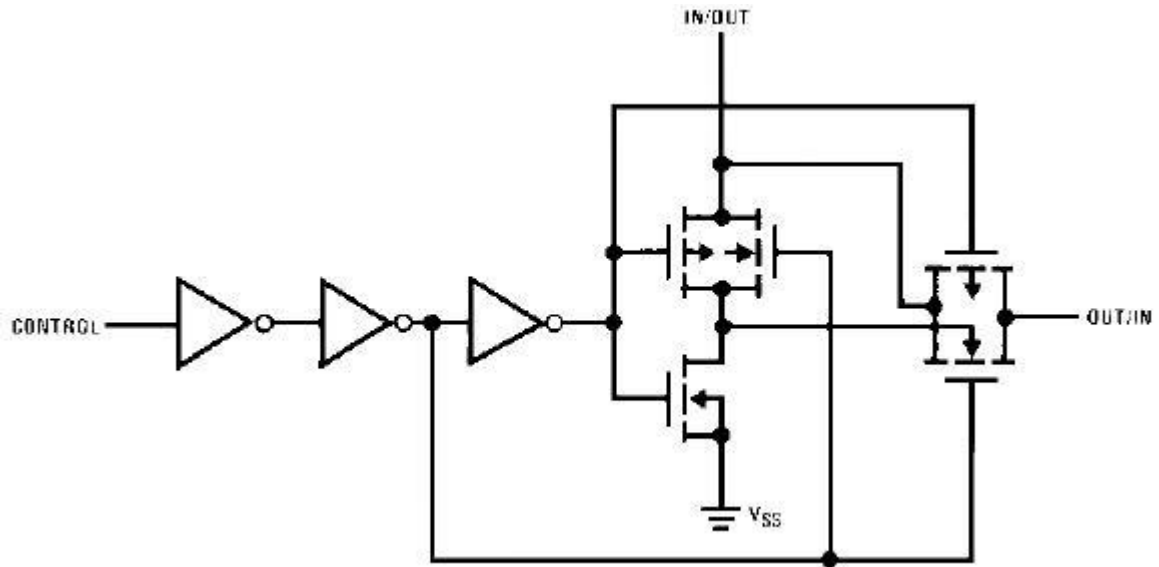
CD4066 的引脚功能如下图所示。每个封装内部有4 个独立的模拟开关，每个模拟开关有输入、输出、控制三个端子，其中输入端和输出端可互换。当控制端加高电平时，开关导通；当控制端加低电平时开关截止。模拟开关导通时，导通电阻为几十欧姆；模拟开关截止时，呈现很高的阻抗，可以看成为开路。模拟开关可传输数字信号和模拟信号，可传输的模拟信号的上限频率为40MHz。各开关间的串扰很小，典型值为-50dB。

CD4066是四双向模拟开关，主要用作模拟或数字信号的多路传输。CD4066由四个相互独立的双向开关组成，每个开关有一个控制信号端，开关可以相互独立地开断，互补影响。这种结构消除了开关晶体管阈值电压随输入信号的变化，因此在整个工作信号范围内导通阻抗比较低。CD4066引出端排列与 CC4016一致，但具有比较低的导通阻抗。另外，导通阻抗在整个输入信号范围内基本不变。与单通道开关相比，具有输入信号峰值电压范围等于电源电压以及在输入信号范围内导通阻抗比较稳定等优点。但若应用于采保电路，仍推荐 CD4016。

当模拟开关的电源电压采用双电源时，例如 $= +5V$ ， $= -5V$ （均对地0V 而言），则输入电压对称于0V 的正、负信号电压（ $+5V \sim -5V$ ）均能传输。这时要求控制信号 $C="1"$ 为 $+5V$ ， $C="0"$ 为 $-5V$ ，否则只能传输正极性的信号电压。



CD4066引脚功能图



内部方框图

Absolute Maximum Ratings 绝对最大额定值:

- Supply Voltage 电源电压(VDD) -0.5V to +18V
- Input Voltage 输入电压 (VIN) -0.5V to VCC+0.5V
- Storage Temperature Range 储存温度范围 (TS) -65°C to +150°C

Power Dissipation 功耗 (PD)

- Dual-In-Line 普通双列封装 700 mW
- Small Outline 小外形封装 500 mW

Lead Temperature 焊接温度(TL)

- Soldering, 10 seconds) (焊接10秒) 300°C

Recommended Operating Conditions 建议操作条件:

- Supply Voltage 电源电压(VDD) 3V to 15V
- Input Voltage 输入电压 (VIN) 0V to VDD
- Operating Temperature Range 工作温度范围 (TA) -55°C to +125°C

DC Electrical Characteristics 直流电气特性:

Sym bol 符号	Parameter 参 数	Conditions 条件	-55°C		+25°C		+125°C		Units 单位
			最 小	最 大	最 小	最 典 型	最 大	最 小	
IDD	Device Current 静态电流	VDD = 5V	0.	0.	0.0	0.2		7.5	μA
			25	1	5				
			0.	0.0	0.5	15			
IDD	Device Current 静态电流	VDD = 10V	0.	0.	0.0	0.5		15	μA
			5	1	1				
			1.	0.0	1.0	30			
IDD	Device Current 静态电流	VDD = 15V	0.	0.	0.0	1.0		30	μA
			1.	1	1				
			0.	0.	1.0	30			

SIGNAL INPUTS AND OUTPUTS

RON “ON” **RL = 10 kΩ to (VDD - VSS/2) VC = VDD, VSS to VDD**

	Resistance	VDD = 5V	80	270	105	1300	Ω
			0		0		
			31	120	400	550	
		VDD = 10V	0				
		VDD = 15V	20	80	240	320	
			0				
	Δ “ON”	RL = 10kΩ to (VDD - VSS/2) VCC = VDD, VIS = VSS to VDD					
Δ RON	Resistance	VDD = 10V		10			
	Between Any 2	VDD = 15V		5			Ω
	of 4 Switches						
	Input or Output						
IIS	Leakage Switch	VC = 0	± 5	± 0.1	± 50	± 500	nA
	“OFF”		0	1			

CONTROL INPUTS

VIS = VSS and VDD VOS = VDD and VSS IIS = $\pm 10\mu A$

VIL	LOW Level Input Voltage	VDD = 5V	1.5	2.2	1.5	1.5	V
			5	5			
			3.0	4.5	3.0	3.0	
VIH	HIGH Level Input Voltage	VDD = 10V	4.0	6.7	4.0	4.0	V
			0	5			
			3.5	3.5	2.7	3.0	
VIL	LOW Level Input Voltage	VDD = 15V	7.0	7.0	5.5	7.0	V
			0	0	5.5	0	
			11.0	11.0	8.2	1.0	
IIN	Input Current	VDD-VSS = 15V	-0.1	-10	-0.1	-0.1	μA
			.1	10^{-5}	1		
			0.1	10^{-5}	0.1	0.1	

AC Electrical Characteristics 交流电气特性:

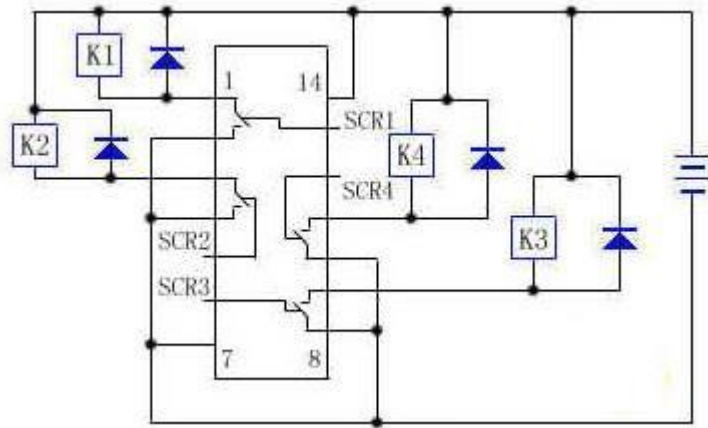
Sym	Parameter 参数	Conditions 条件	最小	典型	最大	Units 单位
		VC = VDD, CL = 50 pF, (Figure 1)RL = 200k				
tPHL	Propagation Delay Time Signal Input to Signal Output	VDD = 5V		2	5	ns
tPLH	信号输入到信号输出传递延迟时间	VDD = 10V		5	5	
		VDD = 15V		1	2	
				0	5	

RL = 1.0kΩ, CL = 50pF, (Figure 2, Figure 3)

	Propagation Delay		1	
tPZH	Time Control Input	VDD = 5V	2	
	to Signal Output		5	
tPZL	High Impedance to	VDD = 10V	6	ns
	Logical Level		0	
		VDD = 15V	5	
			0	
		RL = 1.0kΩ, CL = 50pF		
	Propagation Delay		1	
	Time Control Input	VDD = 5V	2	
	to Signal Output		5	
	Logical Level to	VDD = 10V	6	ns
	High Impedance		0	
	Sine Wave	VDD = 15V	5	
	Distortion		0	
	Frequency	VC = VDD = 5V, VSS = -5V RL = 10 kΩ,	0.	%
	Response-Switch	VIS = 5Vp-p, f= 1 kHz, (Figure 4)	1	
	“ON” (Frequency	VC = VDD = 5V, VSS = -5V, RL = 1 kΩ,	4	
	at -3 dB)	VIS = 5Vp-p, 20 Log10 VOS/VOS (1	0	MHz
		kHz)-dB,(Figure 4)		
tPHZ		VDD = 5.0V, VCC = VSS = -5.0V, RL = 1	1.	
		kΩ, VIS = 5.0Vp-p, 20 Log10, VOS/VIS =	2	
		-50 dB, (Figure 4)	5	
tPLZ	Feedthrough —	VDD=VC(A) =5.0V; VSS = VC(B) = 5.0V,	0.	
	Switch “OFF”	RL1kΩ, VIS(A) = 5.0Vp-p, 20 Log10,	9	MHz
	(Frequency at -50	VOS(B)/VIS(A) = -50dB (Figure 5)		
	dB) Crosstalk			
	Between Any Two	VDD =10V,RL=10kΩ,	1	
	Switches	RIN=1.0kΩ,VCC=10V Square Wave, CL	5	mVp-p
	(Frequency at -50	=50pF(Figure 6)	0	
	dB) Crosstalk;	RL=1.0kΩ, CL=50pF, (Figure 7)VOS(f) = ½ VOS(1.0 kHz)		
	Control Input to		6.	
	Signal Output	VDD = 5.0V	0	
	Maximum Control			
	Input	VDD = 10V	8.	MHz
			0	
		VDD = 15V	8.	
			5	
CIS	Signal Input		8.	pF
	Capacitance 信号		0	
	输入电容			
COS	Signal Output		8.	pF
	Capacitance 信号	VDD = 10V	0	
	输出电容			

CIO	Feedthrough				
S	Capacitance	馈电	VC = 0V	0.	pF
	容			5	
	Control	Input			
CIN	Capacitance	控制		5.	7.
	输入电容			0	5
					pF

应用举例：



CD4066是四双向模拟开关驱动继电器应用电路

CD4066 是四双向模拟开关，集成块 SCR1~SCR4 为控制端，用于控制四双向模拟开关的通断。当 SCR1 接高电平时，集成块①、②脚导通，+12V→K1→集成块①、②脚→电源负极使 K1 吸合；反之当 SCR1 输入低电平时，集成块①、②脚开路，K1 失电释放，SCR2~SCR4 输入高电平或低电平时状态与 SCR1 相同。