

PC817 中文资料

光电耦合器pc817中文资料

PC817光电耦合器广泛用在电脑终端机，可控硅系统设备，测量仪器，影印机，自动售票，家用电器，如风扇，加热器等

电路之间的信号传输，使之前端与负载完全隔离，目的在于增加安全性，减小电路干扰，减化电路设计。

特点：

电流传输比

(CTR: MIN. 50% at IF=5mA ,VCE=5V)

高隔离电压:5000V有效值

紧凑型双列直插封装

公认的UL认证，档案编号E64380

Absolute Maximum Ratings PC817光耦绝对最大额定值

Parameter 参数	Symbol符号	Rating 数值	Unit 单位	
输入侧	Forward current 正向电流	IF	50	mA
	*1Peak forward current 峰值正向电流	IFM	1	A
	Reverse voltage 反向电压	VR	6	V
	Power dissipation 功耗	P	70	mW
输出侧	Collector-emitter voltage 集电极发射极电压	V CEO	35	V
	Emitter-collector voltage 发射极集电极电压	V ECO	6	V
	Collector current 集电极电流	IC	50	mA
	Collector power dissipation 集电极功耗	PC	150	mW
Total power dissipation 总功耗	P tot	200	mW	
*2Isolation voltage 隔离电压	V iso	5 000	Vrms	
Operating temperature 操作温度	T opr	-30 to + 100	℃	
Storage temperature 存储温度	T stg	-55 to + 125	℃	
*3Soldering temperature 焊接温度	T sol	260	℃	

* 1 脉冲宽度≤100ms，占空比:0.001

* 2 40至60%相对湿度，交流1分钟

* 3 10秒

Electro-optical Characteristics 光电特性

Parameter 参数		Symbol 符号	Conditions 测试条件	数值			
				最小	典型	最大	典型
输入侧	Forward voltage 正向电压	V _F	I _F = 20mA	-	1.2	1.4	V
	Peak forward voltage 正向峰值电压	V _{FM}	I _{FM} = 0.5A	-	-	3.0	V
	Reverse current 反向电流	I _R	V _R = 4V	-	-	10	μA
	Terminal capacitance 终端电容	C _t	V = 0, f = 1kHz	-	30	250	pF
输出侧	Collector dark current 集电极暗电流	I _{CEO}	V _{CE} = 20V	-	-	10 ⁻⁷	A
Transfer characteristics 传输特点	*4Current transfer ratio 电流传输比	CTR	I _F = 5mA, V _{CE} = 5V	50	-	600	%
	Collector-emitter saturation voltage 集电极发射极饱和电压	V _{CE(sat)}	I _F = 20mA, I _C = 1mA	-	0.1	0.2	V
	Isolation resistance 隔离电阻	R _{ISO}	DC500V, 40 to 60% RH	5x10 ¹⁰	10 ¹¹	-	Ω
	Floating capacitance 浮动电容	C _f	V = 0, f = 1MHz	-	0.6	1.0	pF
	Cut-off frequency 截止频率	f _c	V _{CE} = 5V, I _C = 2mA, R _L = 100 W, -3dB	-	80	-	kHz
	Response time 响应时间	Rise time 上升时间	t _r	V _{CE} = 2V, I _C = 2mA, R _L = 100 W	-	4	18
Fall time 下降时间		t _f		-	3	18	μs

* 4分类表电流传输比如下所示

Model No. 型号	Rank mark 等级标志	电流传输比CTR (%)
PC817A	A	80 to 160
PC817B	B	130 to 260
PC817C	C	200 to 400
PC817D	D	300 to 600
PC8 * 7AB	A 或 B	80 to 260
PC8 * 7BC	B 或 C	130 to 400
PC8 * 7CD	C 或 D	200 to 600
PC8 * 7AC	A, B 或 C	80 to 400
PC8 * 7BD	B, C 或 D	130 to 600
PC8 * 7AD	A, B, C 或 D	80 to 600
PC8 * 7	A, B, C, D 或 无标记	50 to 600

*: 1或2或3或4

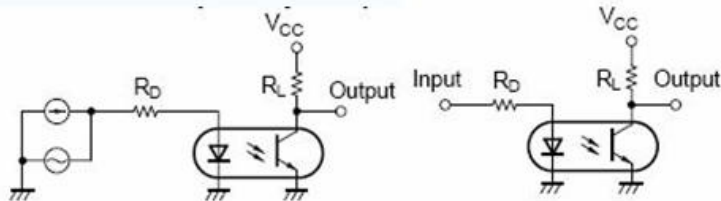


图1 测试电路的频率响应

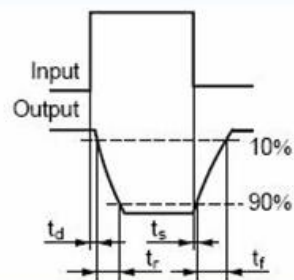
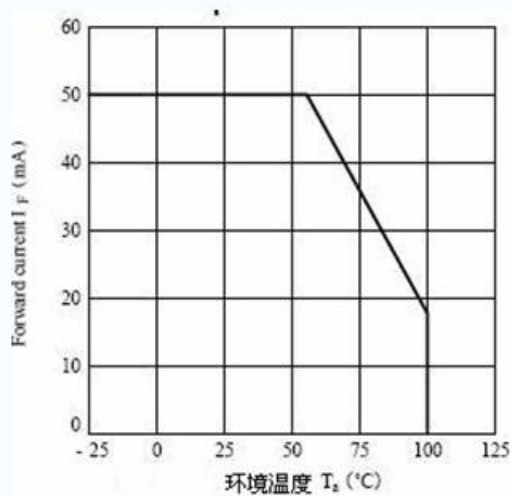
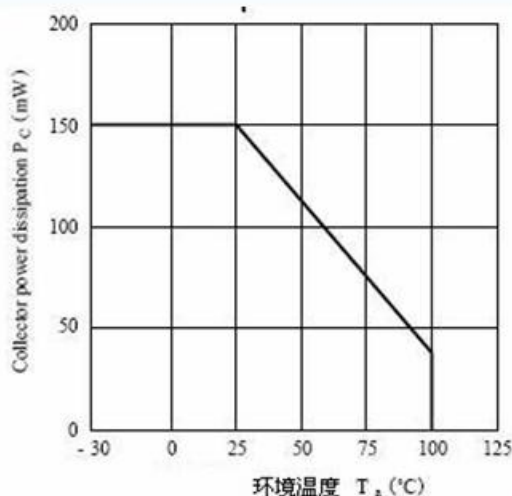


图2测试电路的响应时间

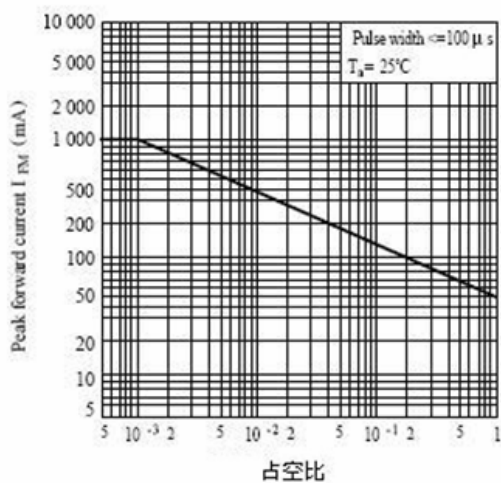
特性曲线图



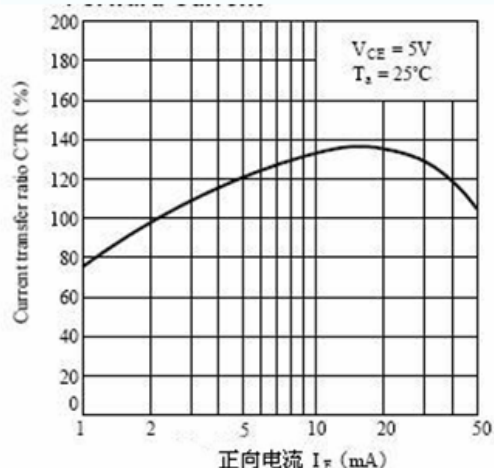
正向电流比(常温)



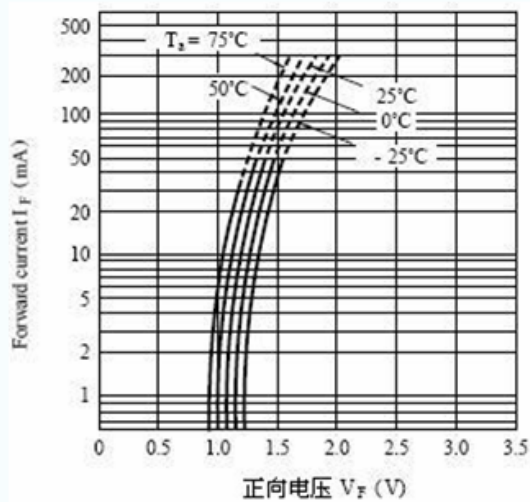
集电极功耗比(常温)



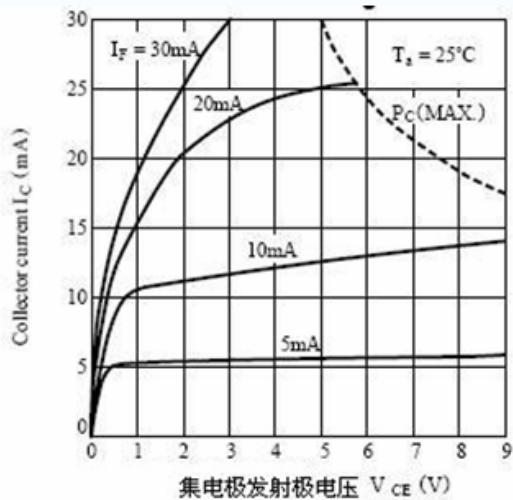
峰值正向电流与占空比



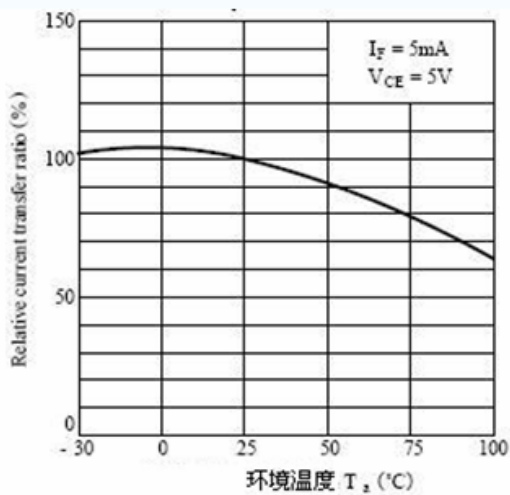
电流传输比比正向电流



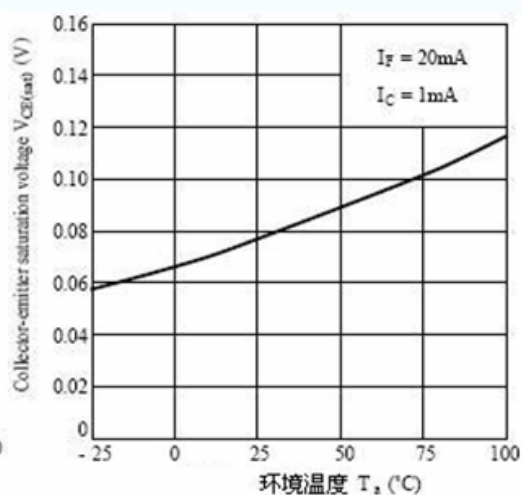
正向电流与正向电压



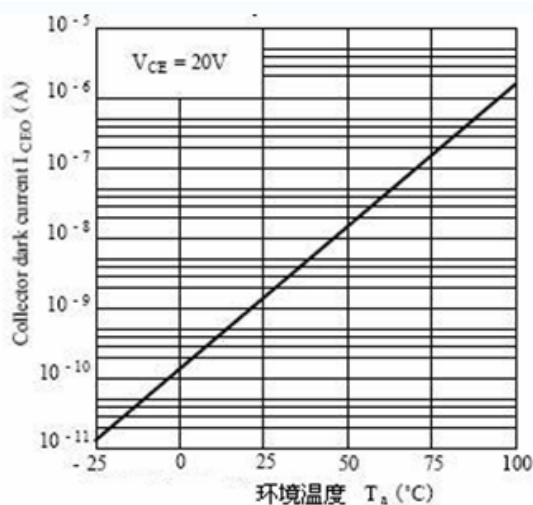
集电极电流比集电极发射极电压



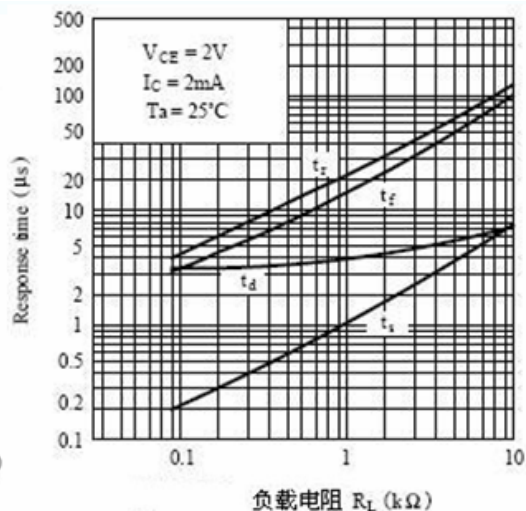
相对比率与电流传输比常温



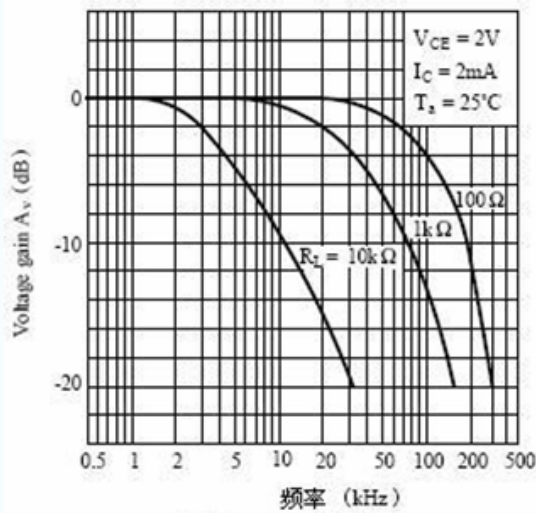
集电极发射极饱和电压与常温



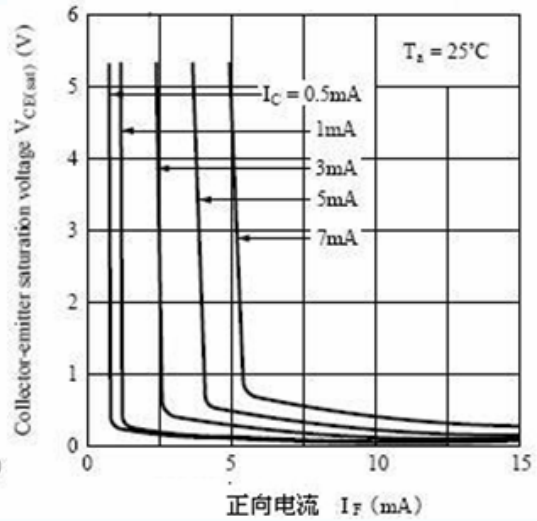
集电极暗电流比常温



响应时间与负载电阻



频率响应



集电极发射极饱和电压与正向电流

应用电路:

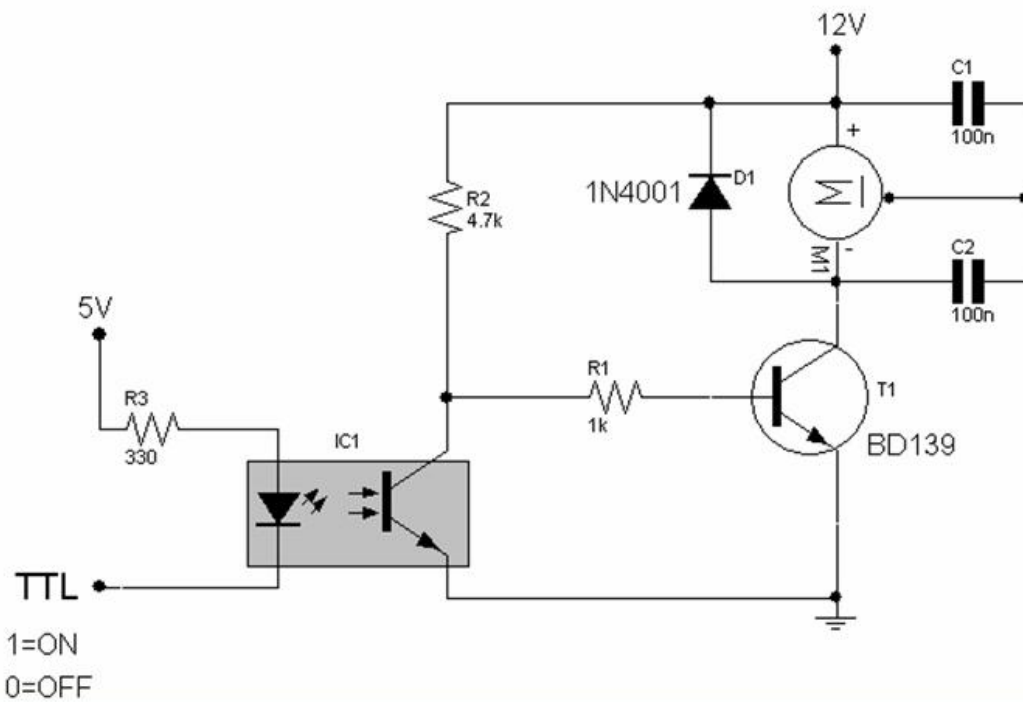


图4 打开或关闭12V直流电动机的TTL控制信号输入电路图

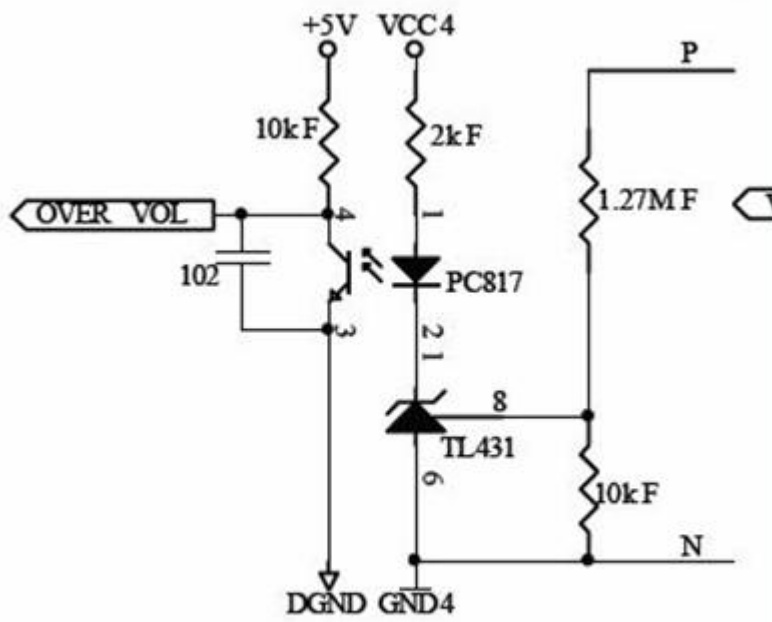
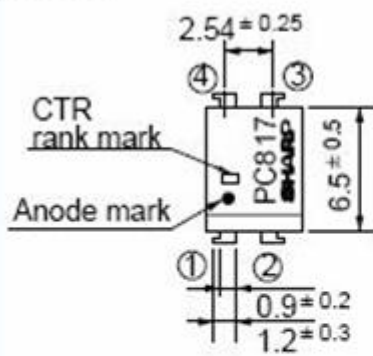


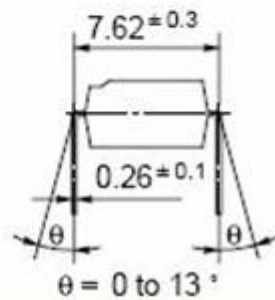
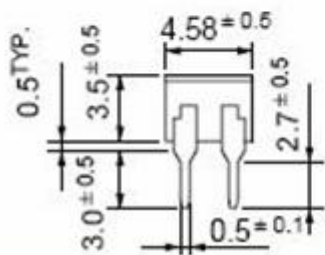
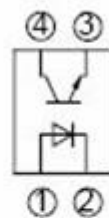
图5 与TL431配合的电源反馈电路

封装尺寸及引脚功能图：

PC817

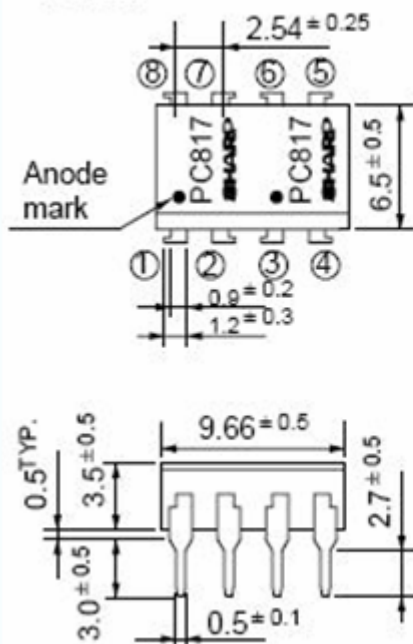


Internal connection diagram

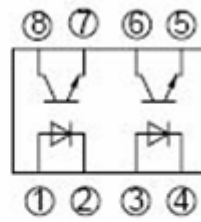


- ① Anode
- ② Cathode
- ③ Emitter
- ④ Collector

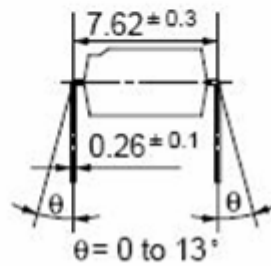
PC827



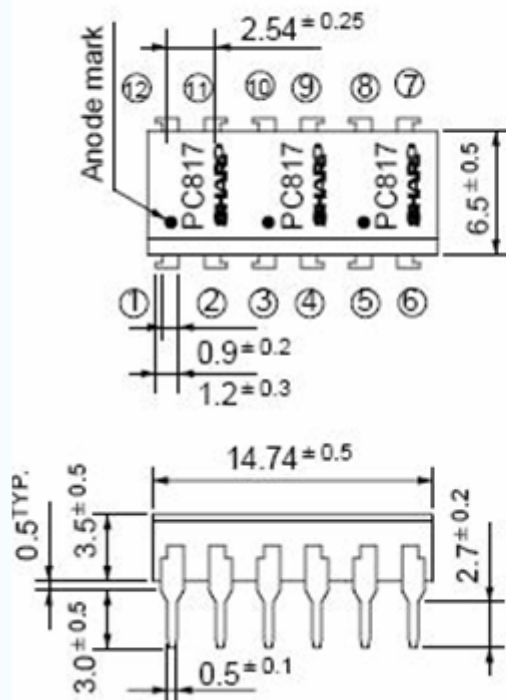
Internal connection diagram



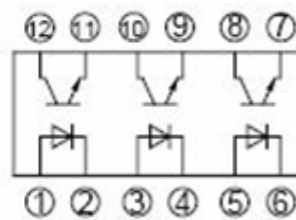
- ①③ Anode
- ②④ Cathode
- ⑤⑦ Emitter
- ⑥⑧ Collector



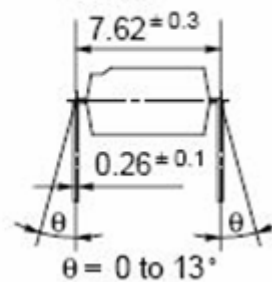
PC837



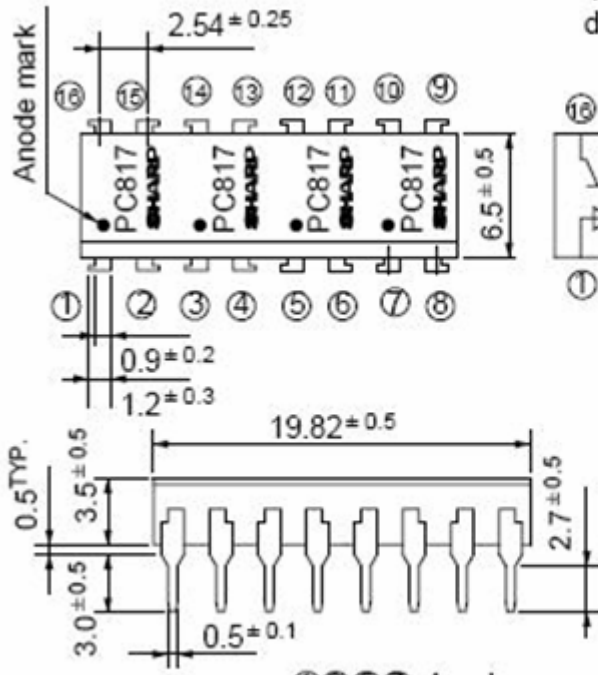
Internal connection diagram



- ①③⑤ Anode
- ②④⑥ Cathode
- ⑦⑨⑪ Emitter
- ⑧⑩⑫ Collector

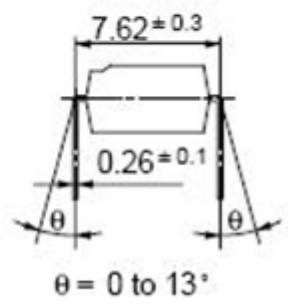
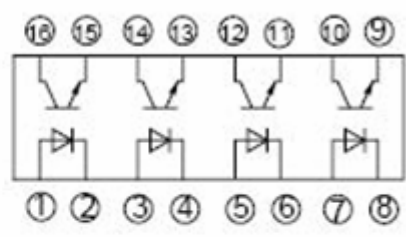


PC847



①③⑤⑦ Anode
②④⑥⑧ Cathode

Internal connection diagram



⑨⑪⑬⑮ Emitter
⑩⑫⑭⑯ Collector