- **特点(Features):**

1.电流转换比(CTR: 最小. 50% 工作条件 I_F=5mA, V_{CE}=5V) Current transfer ratio (Min 50% Working condition I_F=5mA, V_{CE}=5V)

2.绝缘电压：(V_{ISO}=5,000Vrms) Isolation Voltage = 5,000Vrms

3.响应时间 (tr: TYP. 4μs),工作条件 V_{CE}=10V, I_C=2mA, R_L=100 Ω)
Response Time (tr: TYP. 4μs),working condition V_{CE}=10V, I_C=2mA, R_L=100 Ω)

4. UL 认可（NO:E343249）UL approval (NO: E343249)

5.VDE 认可（NO:40038417）VDE approval (NO: 40038417)

6.本产品符合 ROHS 及 REACH 相关法规要求。Our products conform to the requirements of the ROHS and REACH the relevant laws and regulations.

- **说明 (Description)**

1.PC-817 系列光耦合器的组成是：由一个 GaAs 的发射管和一个 NPN 的晶体管组成
PC-817 photocoupler consist of one piece of GaAs emitter and one piece of NPN transistor

2.PC-817 的引脚中心距是 2.54mm Pin pitch of PC-817 is 2.54mm

- **应用范围 (Applications)**

1. 电脑. Computer terminals
2. 器具的应用，测量仪器. System appliances, measuring instruments
3. 贮存器，复印机，自动售货机. Registers, copiers, automatic vending machines
4. 家用电器，如风扇加热器等. Electric home appliances, such as fan heaters, etc.
5. 信号传输系统. Signal transmission between circuits of different potentials and impedance.

- 最大绝对额定值 (常温=25℃) **Absolute Maximum Ratings**(Ta=25℃)

参数 Parameter		符号 Symbol	额定值 Rated Value	单位 Unit
输入 Inout	顺向电流 Forward Current	I_F	50	mA
	逆向电压 Reverse Voltage	V_R	6	V
	功消耗率 Power Dissipation	P	70	mW
输出 Output	集极与射极电压 Collector-Emitter Voltage	V_{CEO}	85	V
	射极与集极电压 Emitter- Collector Voltage	V_{ECO}	6	
	集极电流 Collector Current	I_C	50	mA
	消耗功率 Collector Power Dissipation	P_C	150	mW
总功率消耗 Collector Power Dissipation		P_{tot}	200	mW
*1 绝缘电压 Insulation Voltage		V_{iso}	5,000	Vrms
最大绝缘电压 Rated impulse isolation voltage		V_{IOTM}	6,000	V
额定脉冲绝缘电压 Rated repetitive peak isolation voltage		V_{IORM}	630	V
工作温度 Operating Temperature		T_{opr}	-40 to + 110	℃
存贮温度 Storage Temperature		T_{stg}	-55 to + 125	
*2 焊锡温度 Soldering Temperature		T_{sol}	260	

*1. 交流测试，时间 1 分钟，湿度. =40~60% AC Test, 1 minute, humidity = 40~60%
如下是绝缘测试的方法. Isolation voltage shall be measured using the following method.:
(1) 将产品的两端短路。Short between anode and cathode on the primary side and between collector and emitter on the secondary side
(2) 测试绝缘电压时无电流通过。The isolation voltage tester with zero-cross circuit shall be used
(3) 测试时加正弦波形电压。The waveform of applied voltage shall be a sine wave

*2. 锡焊时间为 10 秒 soldering time is 10 seconds

● **光电特性(常温=25℃) Electro-Optical Characteristics** (Ta=25℃)

参数 Parameter		符号 Symbol	条件 Condition	最小 Min	中.Medium	最 大 Max	单位 Unit
输入 Input	顺向电压 Forward Voltage	V_F	I_F=20mA	---	1.2	1.4	V
	逆向电流 Reverse Current	I_R	V_R=4V	---	---	10	μA
	集极电容 Terminal Capacitance	C_t	V=0, f=1MHz	---	30	250	pF
输出 Output	集极至射极电流 Collector Dark Current	I_{CEO}	V_{CE}=70V, I_F=0	---	---	100	nA
	集极与射极衰减电压 Collector-Emitter Breakdown Voltage	BV_{CEO}	I_C=0.1mA I_F=0	85	---	---	V
	射极与集极衰减电压 Emitter-Collector Breakdown Voltage	BV_{ECO}	I_E=10μA I_F=0	6	---	---	V
传输特性 Transforming Characteristics	集极电流 Collector Current	Ic	IF=5mA VCE=5V	2.5	---	30	mA
	*1 电流转换比 Current Transfer Ratio	CTR		50	---	600	%
	集极与射极饱和电压 Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_F=20mA I_C= 1mA	---	0.1	0.2	V
	绝缘阻抗 Isolation Resistance	R_{iso}	DC500V 40~60%R.H.	5×10^{10}	1×10^{11}	---	Ω
	电容量 Floating capacitance	C_f	V=0, f=1MHz	---	0.5	---	pF
	转换频率 Cut-off Frequency	f_c	V_{CE}=5V, I_C=2mA R_L=100Ω, -3dB	---	80	---	kHz
	上升时间 Rise Time(Rise)	t_r	V_{CE}=2V, I_C=2mA R_L=100Ω	---	4	15	μs
	下降时间 Fall Time(Fall)	t_f		---	3	15	μs

注：电流转换比 Current Conversion Ratio = I_C / I_F × 100%

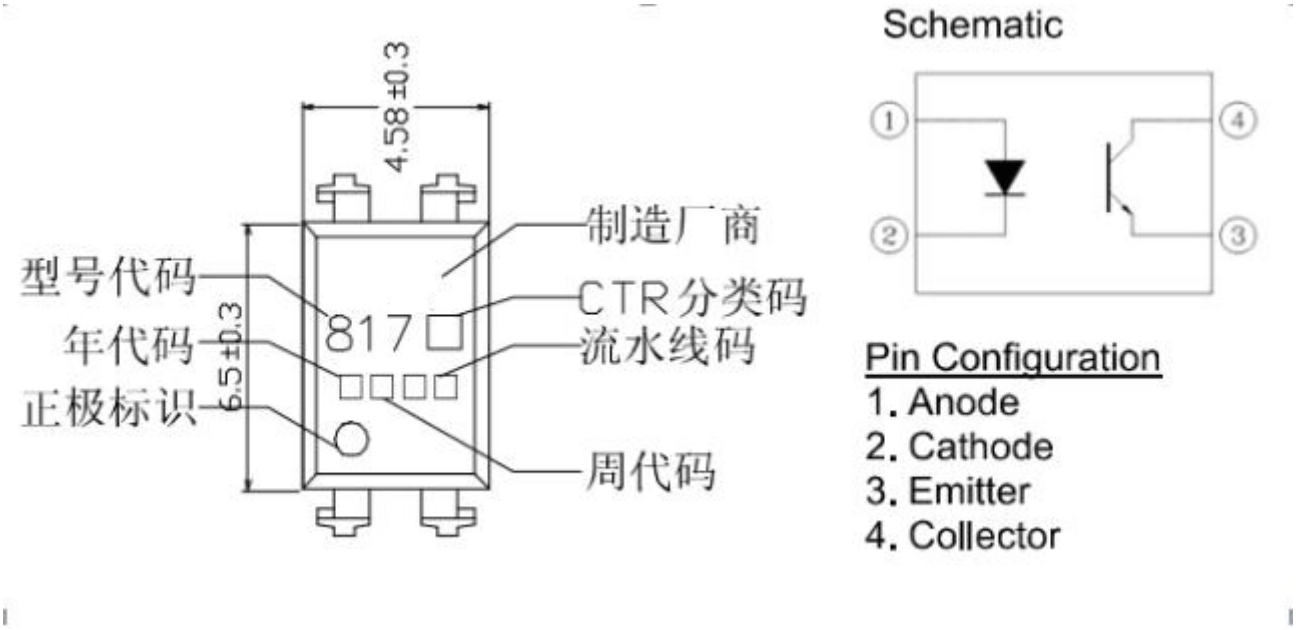
● **电流转换比的等级分类 Rank table of current transfer ratio**

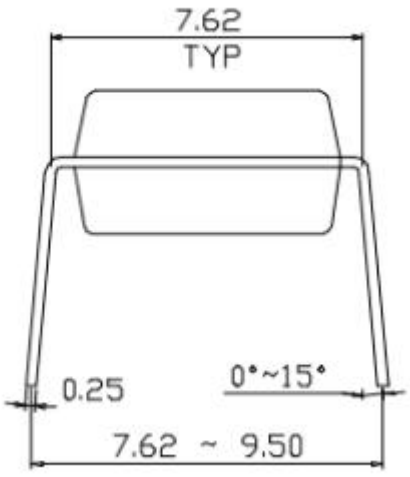
等级标示 Rank Mark	最小.Min (%)	最大.Max (%)
L	50	100
A	80	160
B	130	260
C	200	400
D	300	600
A or B or C or D	50	600

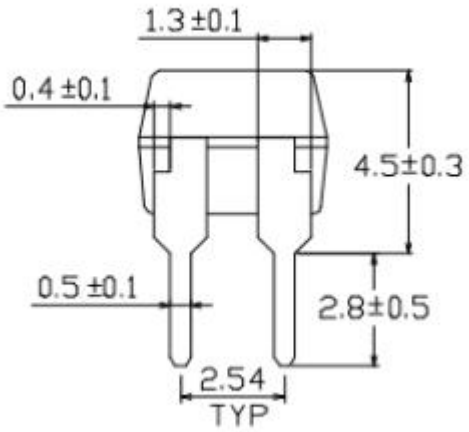
说 明： 工作条件: I_F=5mA, V_{CE}=5V, T_a=25℃.

Note: Working condition: I_F=5mA, V_{CE}=5V, T_a=25℃.

● **外形尺寸 Outer Dimension**







- 特性曲线 **Characteristics Curves**

Fig.1 Forword Current vs. Ambient Temperatute

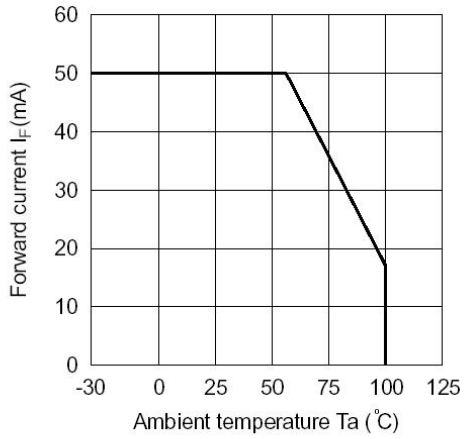


Fig.2 Collector Power Dissiption vs. Ambient Temperature

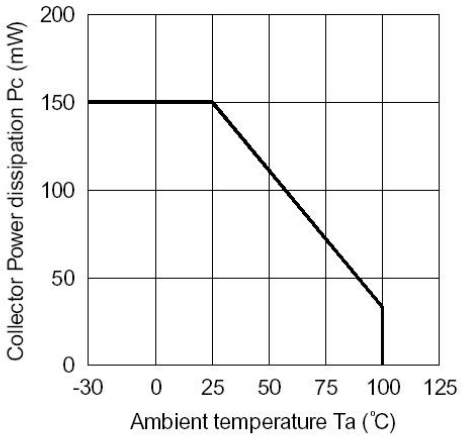


Fig.3 Collector-emitter Saturation Voltage vs. Forward Current

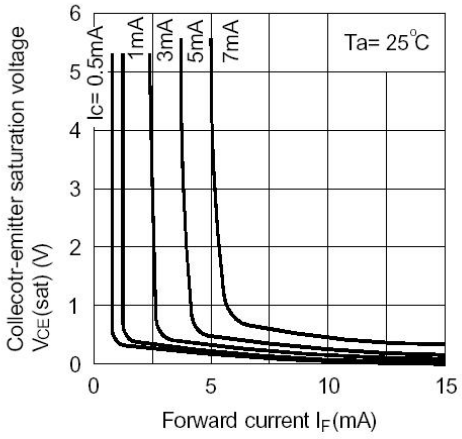


Fig.4 Forward Current vs. Forward Voltage

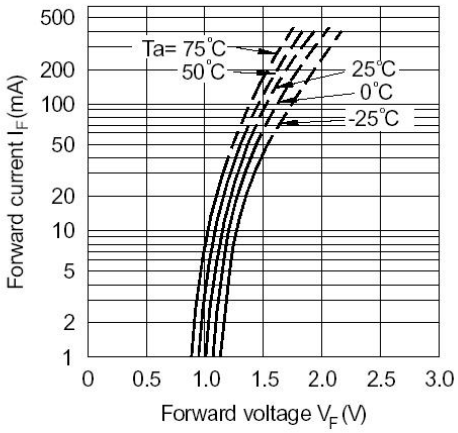


Fig.5 Current Transfer Ratio vs. Forward Current

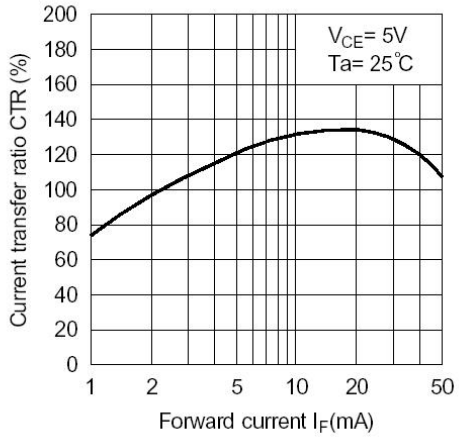
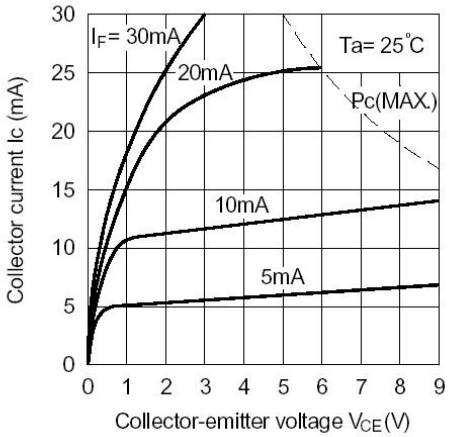


Fig.6 Collector Current vs. Collector-emitter Voltage



- 特性曲线 **Characteristics Curves**

Fig.7 Relative Current Transfer Ratio vs. Ambient Temperature

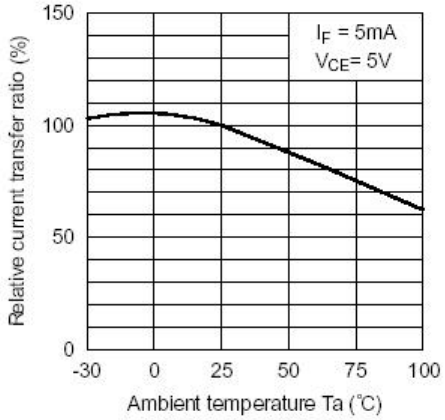


Fig.8 Collector-emitter Saturation Voltage vs. Ambient Temperature

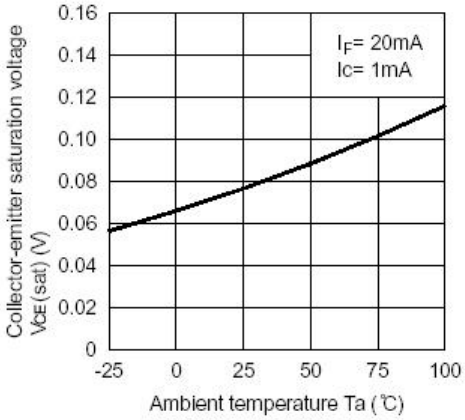


Fig.9 Collector Dark Current vs. Ambient Temperature

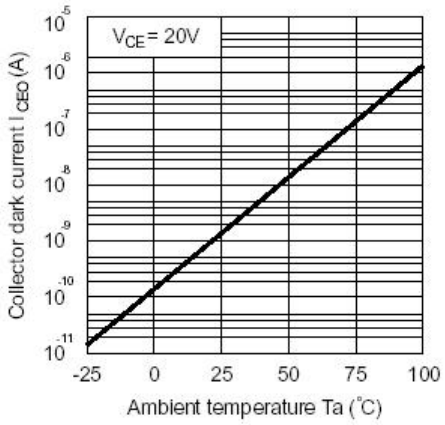


Fig.10 Response Time vs. Load Resistance

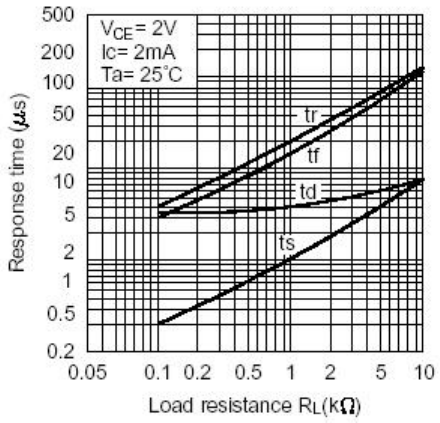
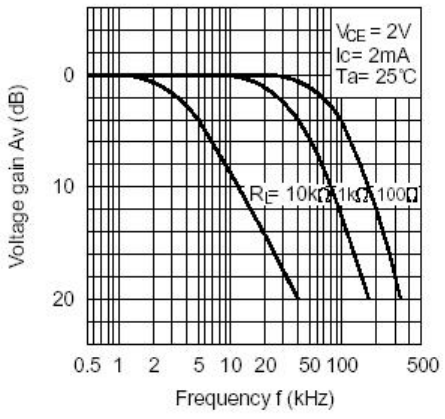
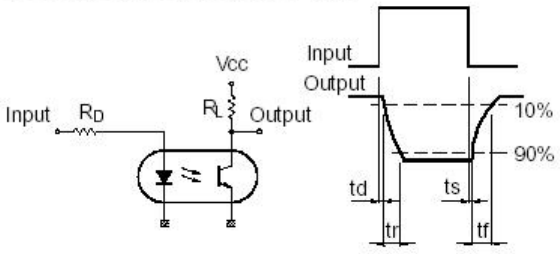


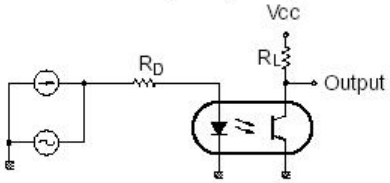
Fig.11 Frequency Response



Test Circuit for Response Time



Test Circuit for Frequency Response



● 可靠性测试 Reliability test

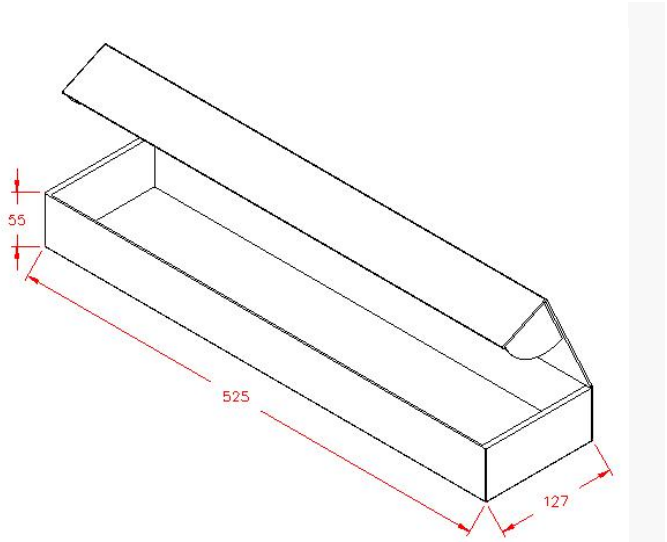
分类 Classification	测试项目 Test Item	参考标准 Reference Standard	测试条件 Test Conditions	结果 Result
耐性测试 Endurance Test	寿命测试 Operation Life	MIL-STD-750:1026 MIL-STD-883:1005 JIS C 7021 :B-1	连接功率是 If=50mA， 在室温下测试时间为 1000 小时 Connect with a power If=50mA Ta=Under room temperature Test time=1,000hrs	0/20
	高温高湿循环 High Temperature High Humidity Reverse Bias (H3TRB)	JIS C 7021 :B-11	Ta=+85℃±5℃, RH=85% PTR=VCE 绝对最大额定值*80% 测试时间=1000hrs PTR=V CE absolute max rating*80% Test time=1000hrs	0/20
	高温循环 High Temperature Reverse Bias (HTRB)	JIS C 7021 :B- 8	Ta=+105℃±5℃ PTR=VCE 绝对最大额定值 测试时间=1000hrs PTR=V CE absolute max rating Test time=1000hrs	0/20
	高温存贮 High Temperature Storage	MIL-STD-883:1008 JIS C 7021 :B-10	高温=+125℃±5℃ 测试时间=1,000hrs High Ta=+125℃±5℃ Test time=1,000hrs	0/20
	低温存贮 Low Temperature Storage	JIS-C-7021 :B-12	低温=-55℃±5℃ 测试时间=1,000hrs Low Ta=-55℃±5℃ Test time=1,000hrs	0/20
	高压加速寿命试验 Auto clave	JESD 22-A102-B	P=15PSIG, Ta=121℃ 条件. =100%RH, 48hrs Humi. =100%RH, 48hrs	0/20
环境测试 Environmental Tes	温度循环 Temperature Cycling	MIL-STD-202:107D MIL-STD-750:1051 MIL-STD-883:1010 JIS C 7021 :A-4	125℃ ~25℃ ~-55℃ ~ 25℃ 30min 5min 30min 5min 测试时间=20cycle Test Time=20cycle	0/20
	冷热冲击 Thermal Shock	MIL-STD-202:107D MIL-STD-750:1051 MIL-STD-883:1011	125℃ ~-55℃ 20min 20min 测试时间=20cycle Test Time=20cycle	0/20
	焊锡实验 Solder Resistance	MIL-STD-202:201A MIL-STD-750:2031 JIS C 7021 :A-1	工作温度：260℃, 在 10±1 秒内 Ta = 260 ± 3° C t (dwell) = 10 ± 1 sec	0/20
	沾锡实验 Solder Ability	MIL-S-883:2003 JIS C 7021 :A-2	沾锡测试：230℃,在 5±1 秒之内 Ta = 230 ± 3 ° C t (dwell) = 5 ± 1 sec	0/20

● 可靠性判定标准 Reliability decision criteria

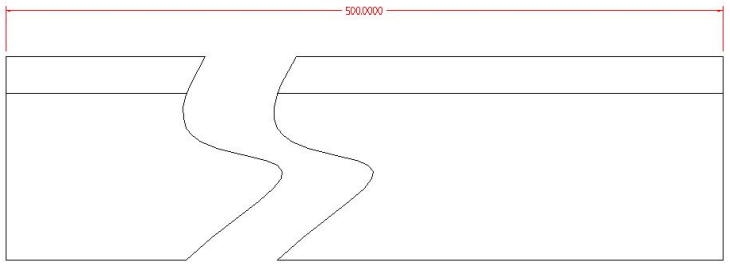
符号 Symbol	测试条件 Measuring conditions	失效标准判定 Measuring conditions
VF (V)	If=20mA	Over Ux1.0
Ir(uA)	Vr=4V	Over Ux1.0
CTR(%)	If=5mA, VCE=5V	Shift>1.2
VCE(sat)	IF=20mA, IC= 1mA	Over Ux1.0
BVCEO	IC=0.1mA, IF=0	Over Lx1.0
BVECO	IE=10μA, IF=0	Over Lx1.0

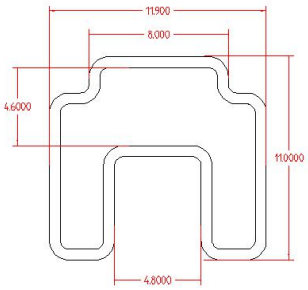
● 包装纸箱尺寸（mm）

Packaging Box Dimensions (Units: mm)



● Packaging Tube Dimensions (Units: mm)





注： Notes:

1、每包装管装 100PCS Every packaging tubes of 100 PCS

2、每内盒装 50 管 Each box 50 tube inside

3、每外箱装十盒 10 boxes per carton pack

4、包装若有调整，恕不另行通知 Specifications are subject to change without notice.