

● 说明

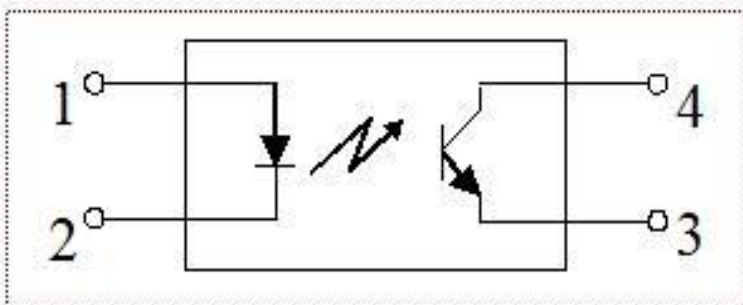
EL357是一款小外形的贴片光电耦合器件，适合表面贴装生产。EL357 是由一个砷化镓发光二极管和一个光电晶体管组成的光电耦合器，它的体积比 DIP 小，适用于高密度表面贴装应用，如可编程控制器等。

● 应用范围

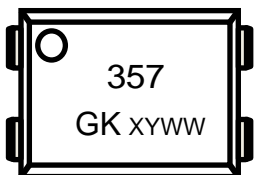
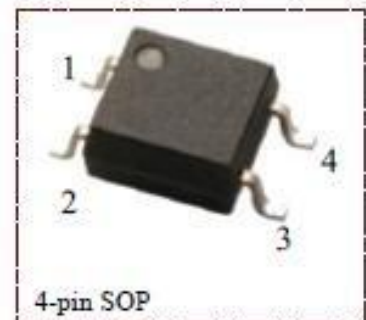
- 开关电源，智能电表
- 工业控制，测量仪器
- 办公设备，比如复印机
- 家用电器，比如空调、风扇、热水器等

● 结构原理图和封装：

结构原理



封装外形



● The "x" in the printed word represents the product segment: A、B、C、D or others

印字中的“x”代表产品 CTR 分档：A、B、C、D 等

● "Y " represents the year; "WW" represents the week

印字中“ Y ”代表年份；“WW”代表星期

● The "GK" in the printed word represents the product brand

印字中的“GK”代表产品品牌

EL357

● 最大绝对额定值 (常温=25°C)

| 参数 | | 符号 | 额定值 | 单位 |
|------|-----------|-----------|------|----|
| 输入 | 正向电流 | I_F | 50 | mA |
| | 正向脉冲电流 | I_{FP} | 1 | A |
| | 反向电压 | V_R | 6 | V |
| | 功耗 | P | 70 | mW |
| | 结温 | T_j | 125 | °C |
| 输出 | 集电极功耗 | P_c | 150 | mW |
| | 集电极电流 | I_c | 50 | mA |
| | 集电极-发射极电压 | V_{CE0} | 80 | V |
| | 发射极-集电极电压 | V_{ECO} | 7 | V |
| | 结温 | T_j | 125 | °C |
| 总功耗 | P_{tot} | 200 | mW | |
| 隔离电压 | Viso | 5000 | Vrms | |
| 工作温度 | Topr | -55~+110 | °C | |
| 储存温度 | Tstg | -55~+125 | °C | |
| 焊接温度 | Tsol | 260 | °C | |

● 光电特性 (常温=25°C)

| Parameter | | Symbol | Condition | Min. | Typ. | Max. | Unit |
|-----------|-------------|---------------|--|--------------------|------|------|----------|
| 输入 | 正向电压 | V_F | $I_F=20mA$ | | 1.2 | 1.4 | V |
| | 反向电流 | I_R | $V_R=5V$ | - | - | 10 | μA |
| | 终端电容 | C_t | $V=0, f=1kHz$ | - | 30 | 250 | pF |
| 输出 | 集电极暗电流 | I_{CEO} | $V_{CE}=70V$ | - | - | 100 | nA |
| | 集电极-发射极击穿电压 | BV_{CEO} | $I_c=0.1mA, I_F=0$ | 80 | - | - | V |
| | 发射极-集电极击穿电压 | BV_{ECO} | $I_E=0.1mA, I_F=0$ | 7 | - | - | V |
| 传输特性 | 电流转换比 | CTR | $I_F=5mA, V_{CE}=5V$ | 50 | - | 400 | % |
| | 饱和压降 | $V_{CE(sat)}$ | $I_F=20mA, I_c=1mA$ | - | 0.1 | 0.2 | V |
| | 集电极-发射极饱和压降 | R_{ISO} | DC1000V, 40~60%R.H. | 1×10^{11} | - | - | Ω |
| | 隔离电容 | C_f | $V=0, f=1MHz$ | - | 0.6 | 1.0 | pF |
| | 集电极-发射极电容 | C_{CE} | $V=0, f=1MHz$ | | 10 | | pF |
| | 截止频率 | F_c | $V_{CE}=5V, I_c=2mA,$ $R_L=100\Omega, -3dB$ | - | 80 | - | kHz |
| 开关时间 | 上升时间 | T_r | $V_{CE}=10V, I_c=2mA,$ $R_L=100\Omega$ | - | 4 | 18 | μs |
| | 下降时间 | T_f | | - | 3 | 18 | μs |

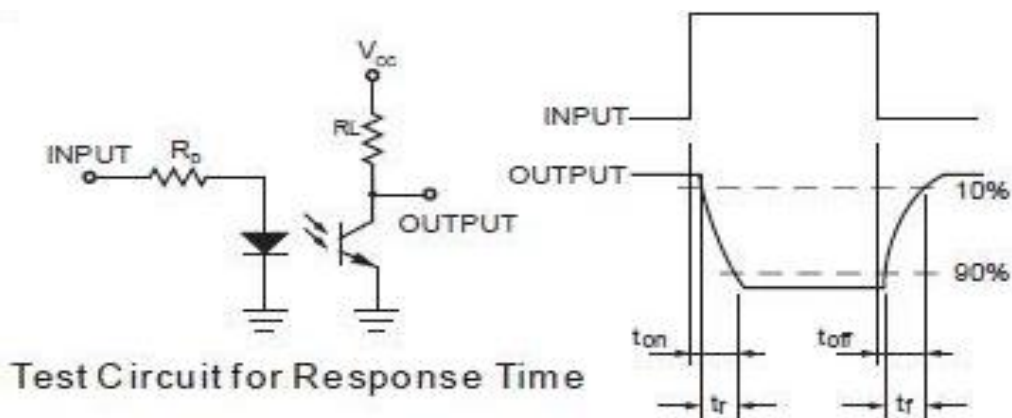
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● 电流转换比（CTR）的等级分类

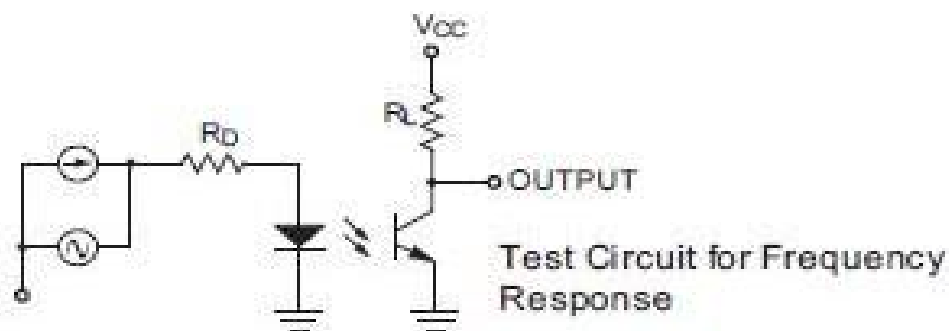
电流转换比 $CTR = I_C / I_F \times 100\%$

| 型号 | 分级标准 | I_C (mA) | | 对应 CTR (%) | |
|-------|------------|--|------|--|-----|
| | | $I_F = 5\text{mA}, V_{CE} = 5\text{V}, T_a = 25^\circ\text{C}$ | | $I_F = 5\text{mA}, V_{CE} = 5\text{V}, T_a = 25^\circ\text{C}$ | |
| | | Min | Max | Min | Max |
| EL357 | Blank | 2.5 | 30.0 | 50 | 600 |
| | A | 4.0 | 8.0 | 80 | 160 |
| | B | 6.5 | 13.0 | 130 | 260 |
| | C | 10.0 | 20.0 | 200 | 400 |
| | D | 15.0 | 30.0 | 300 | 600 |
| | A or B | 4.0 | 13.0 | 80 | 160 |
| | B or C | 6.5 | 20.0 | 130 | 400 |
| | C or D | 10.0 | 30.0 | 200 | 600 |
| | A,B or C | 4.0 | 20.0 | 80 | 400 |
| | B,C or D | 6.5 | 30.0 | 130 | 600 |
| | A,B,C or D | 4.0 | 30.0 | 80 | 600 |

● 测试电路

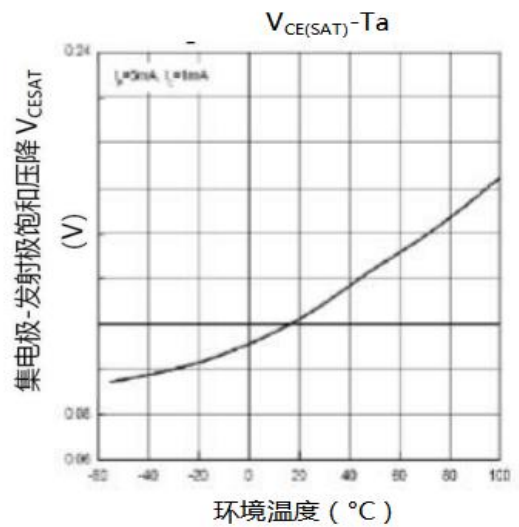
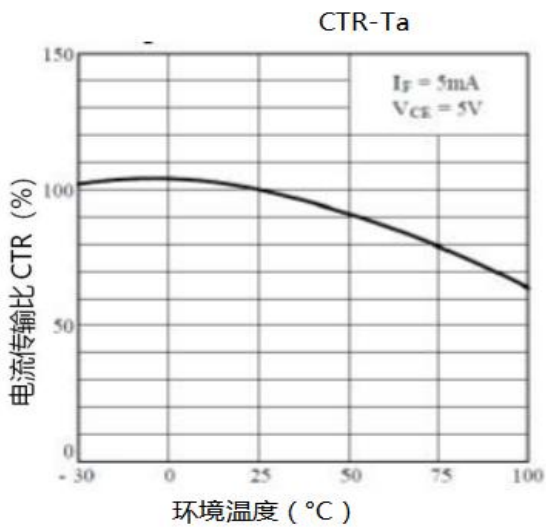
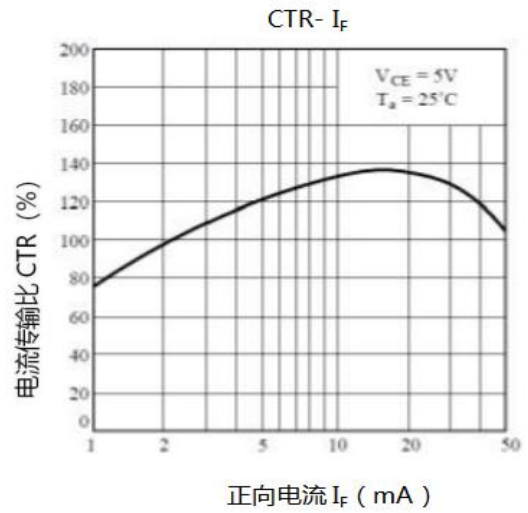
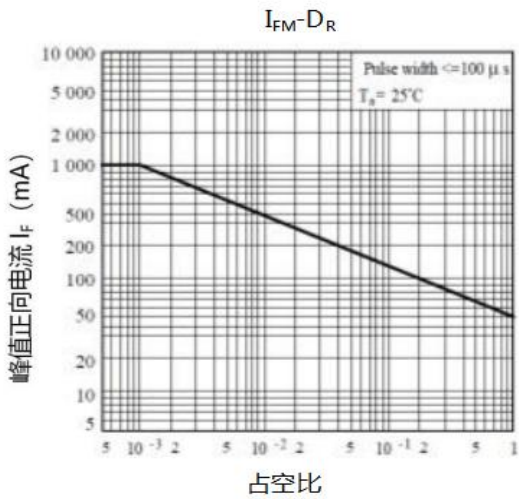
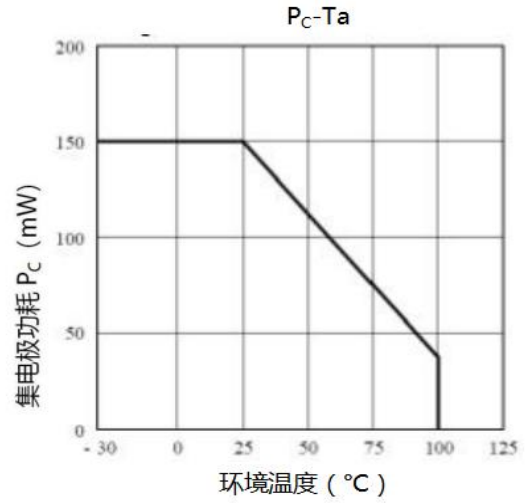
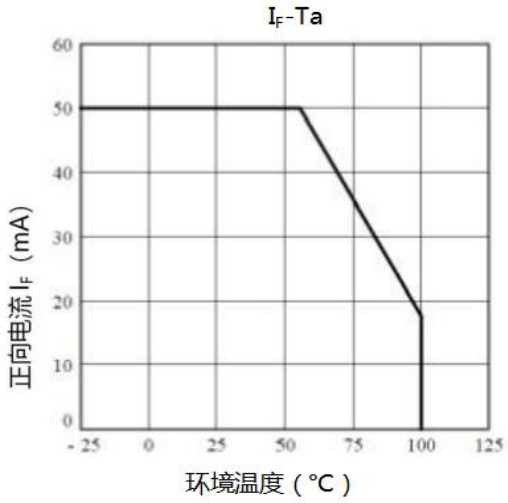


Test Circuit for Response Time

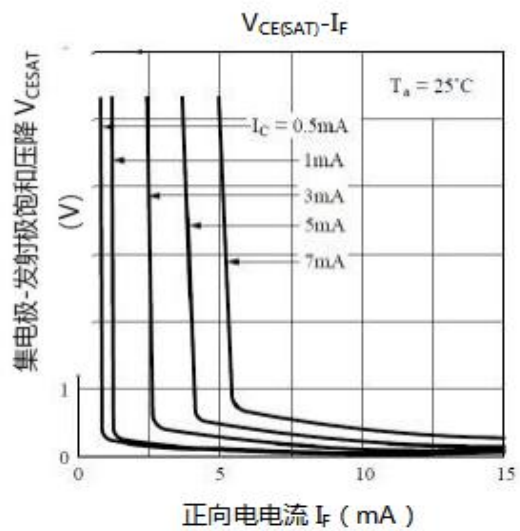
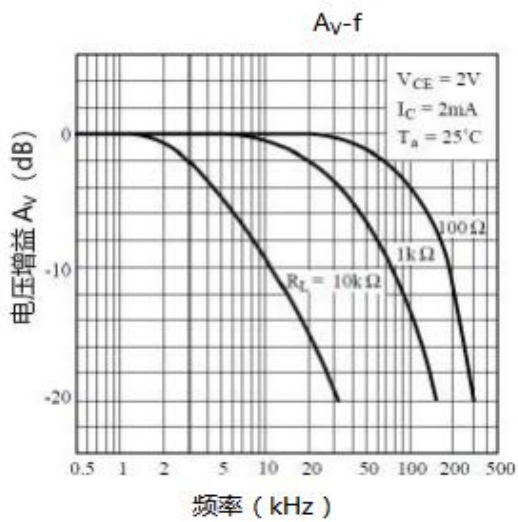
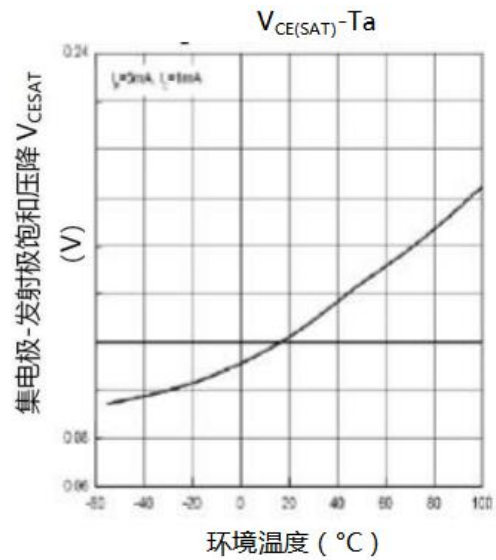
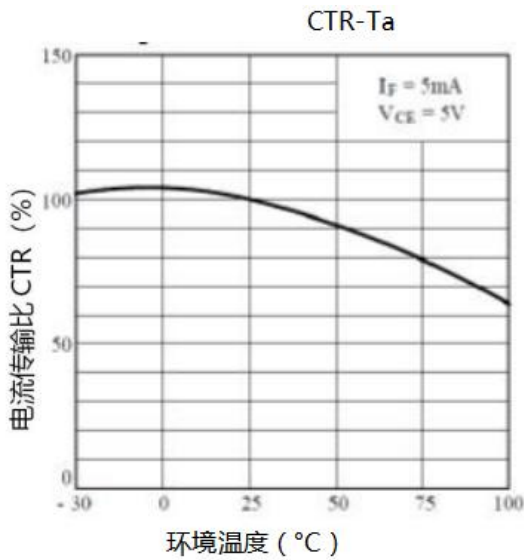
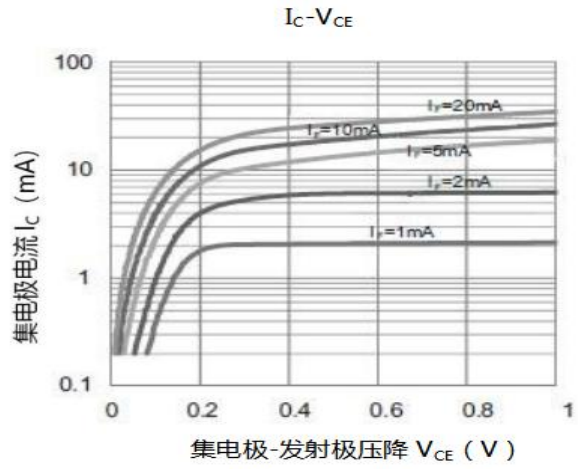
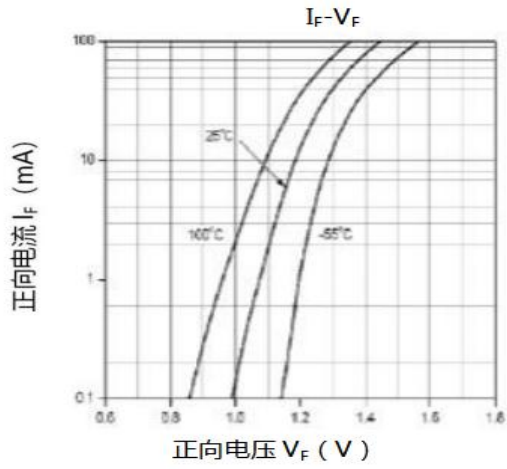


Test Circuit for Frequency Response

RATING AND CHARACTERISTIC CURVES (EL357)

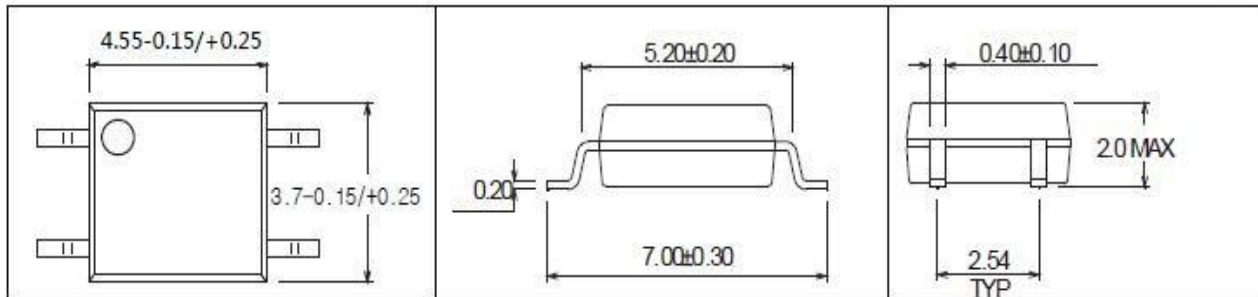


RATING AND CHARACTERISTIC CURVES (EL357)



Outline Dimensions 外形尺寸

Unit: mm



4-pin SOP