



概述

EL357是一块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。

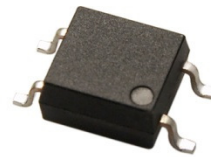
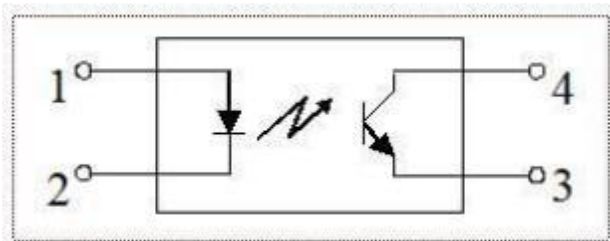
特性

- 电流转换比 (CTR)范围: 80~600% ($I_F=5\text{mA}$, $V_{CE}=5\text{V}$)
- 输入-输出隔离电压($V_{iso}=3750\text{Vrms}$)
- 集电极-发射极击穿电压 $BV_{CEO}\geq 80\text{V}$
- 工作温度: $-55\sim 110^\circ\text{C}$

应用参数

- 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



极限参数($T_a=25^\circ\text{C}$)

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	$^\circ\text{C}$
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_{CEO}	80	V
	发射极-集电极电压	V_{ECO}	7	V
	结温	T_j	125	$^\circ\text{C}$
总功耗		P_{tot}	200	mW
隔离电压		V_{iso}	5000	V_{rms}
工作温度		T_{opr}	$-55\sim 110$	$^\circ\text{C}$
储存温度		T_{stg}	$-55\sim 125$	$^\circ\text{C}$
焊接温度		T_{sol}	260	$^\circ\text{C}$



光电特性(Ta=25 ° C)

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

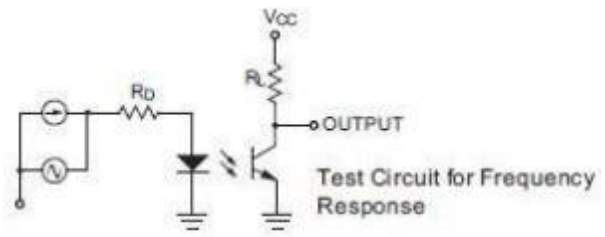
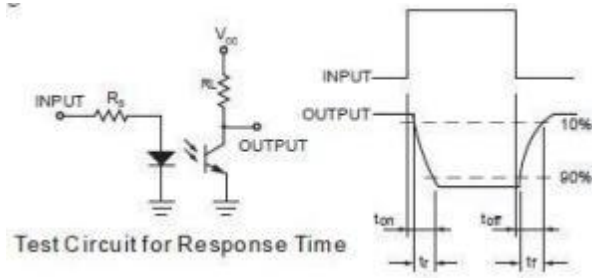
* CTR= $I_C/I_F \times 100\%$

CTR分级表

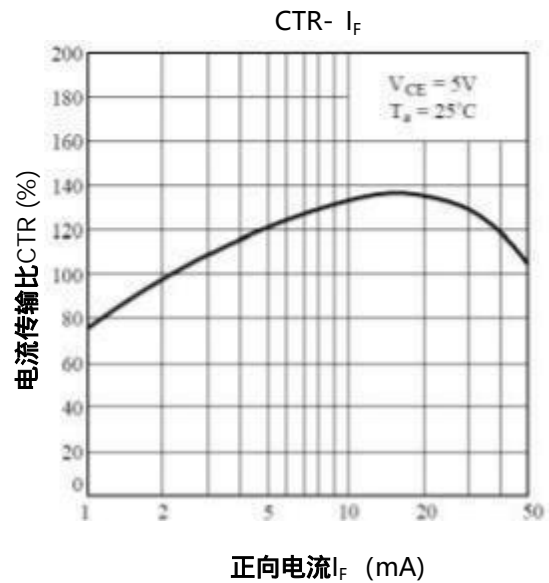
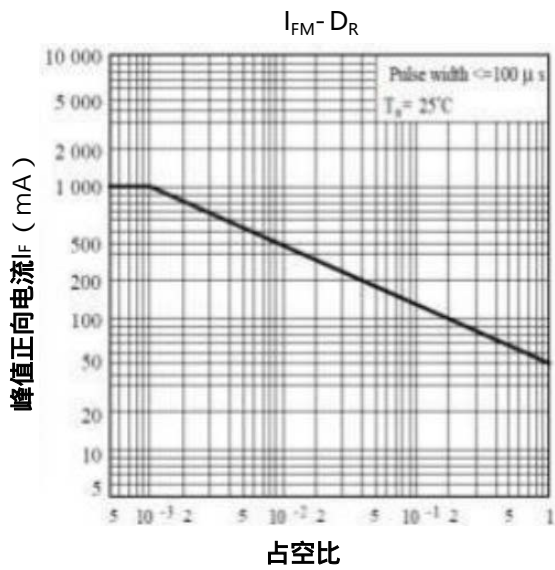
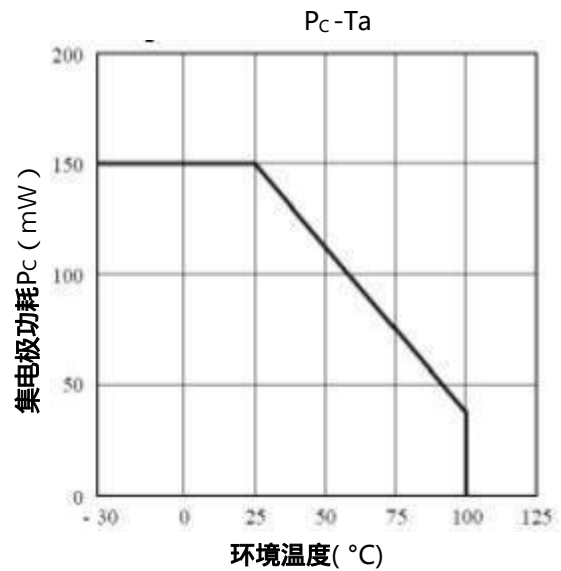
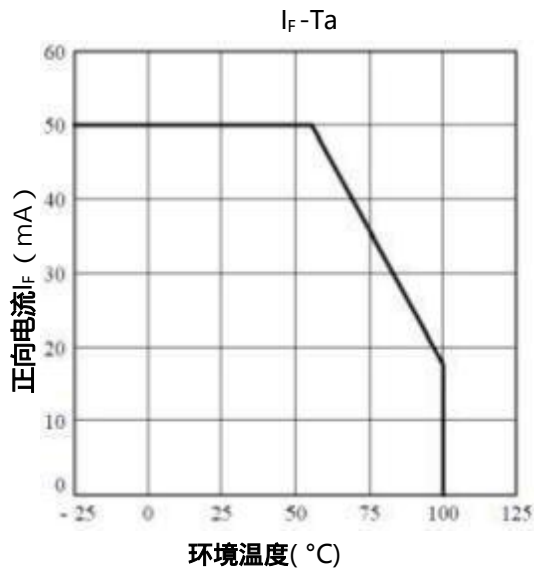
型号分级标准	I_C (mA)		对应CTR (%)	
	$I_F = 5\text{mA}, V_{CE} = 5\text{V}, T_a = 25^\circ\text{C}$		$I_F = 5\text{mA}, V_{CE} = 5\text{V}, T_a = 25^\circ\text{C}$	
	Min	Max	Min	Max
Blank	2.5	30.0	50	600
EL357A	4.0	8.0	80	160
EL357B	6.5	13.0	130	260
EL357C	10.0	20.0	200	400
EL357D	15.0	30.0	300	600
EL357A or B	4.0	13.0	80	160
EL357B or C	6.5	20.0	130	400
EL357C or D	10.0	30.0	200	600
EL357A, B or C	4.0	20.0	80	400
EL357B, C or D	6.5	30.0	130	600
EL357A, B, C or D	4.0	30.0	80	600

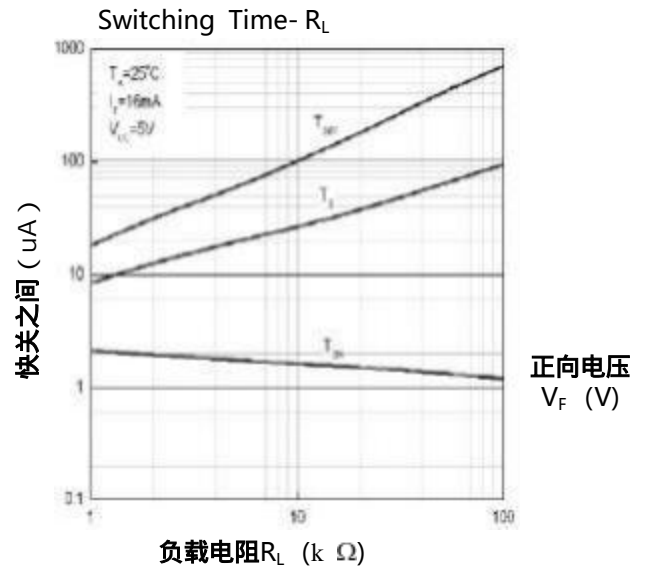
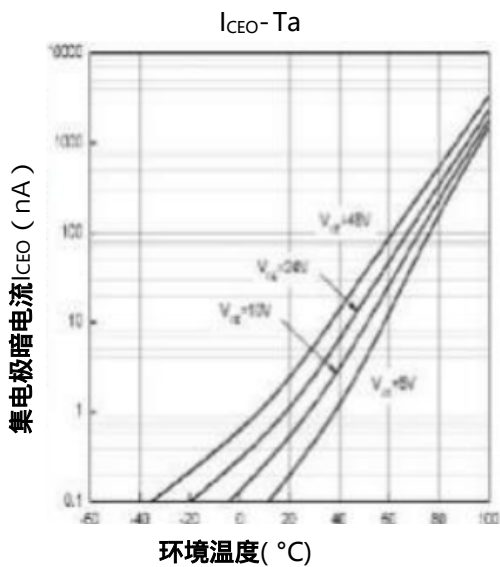
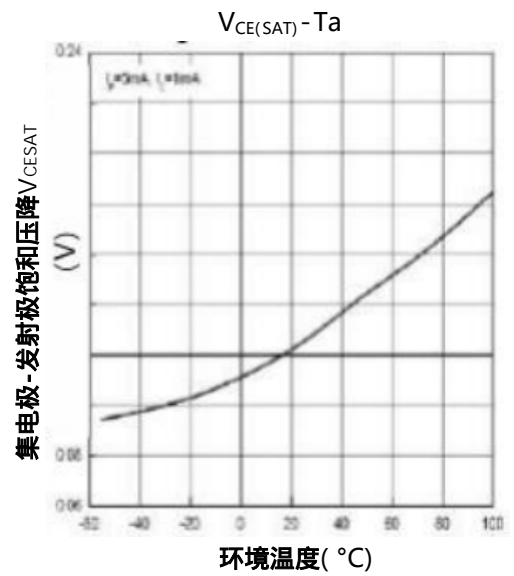
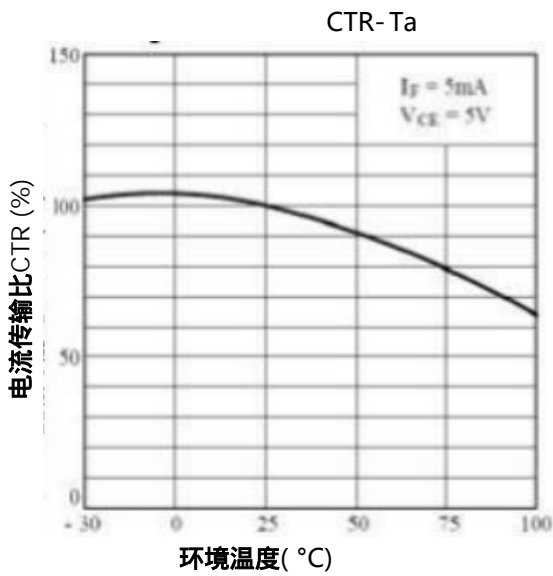
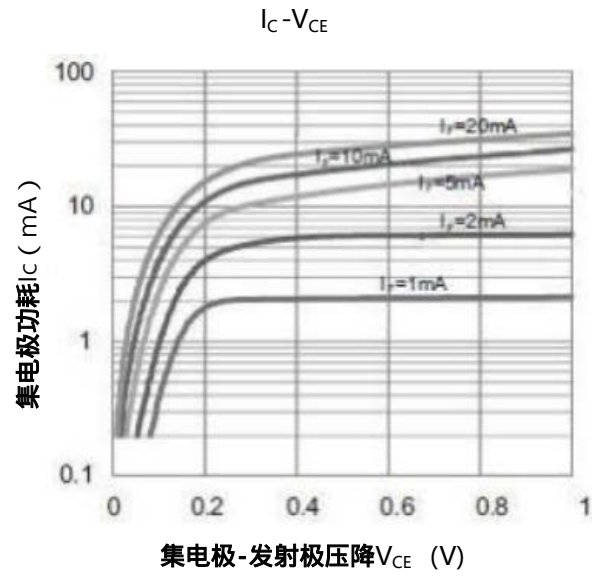
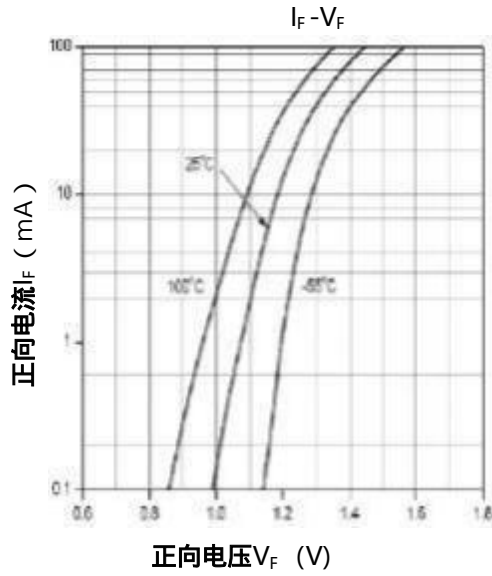


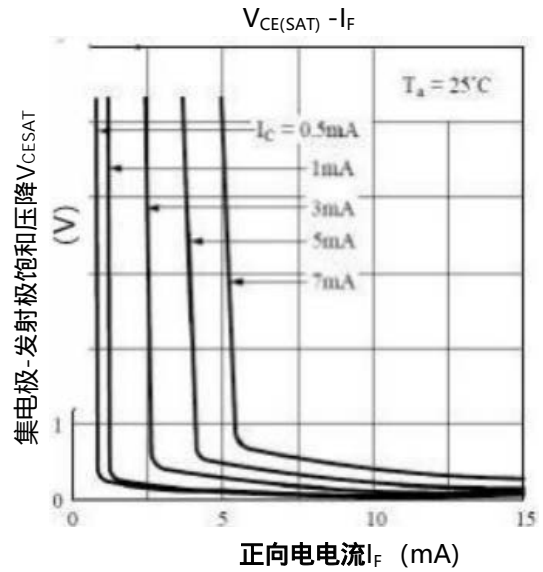
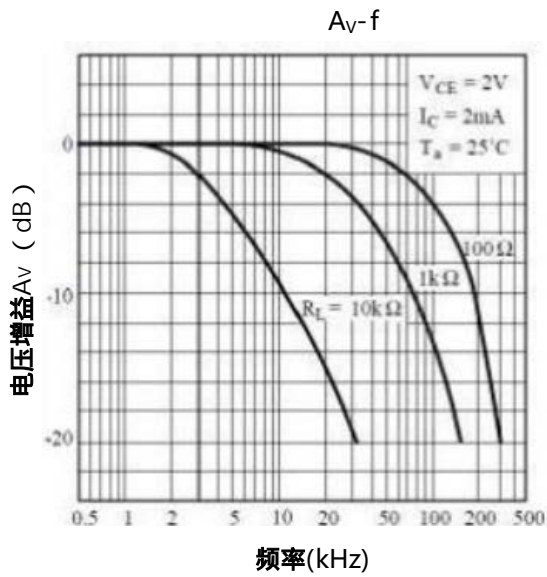
测试电路



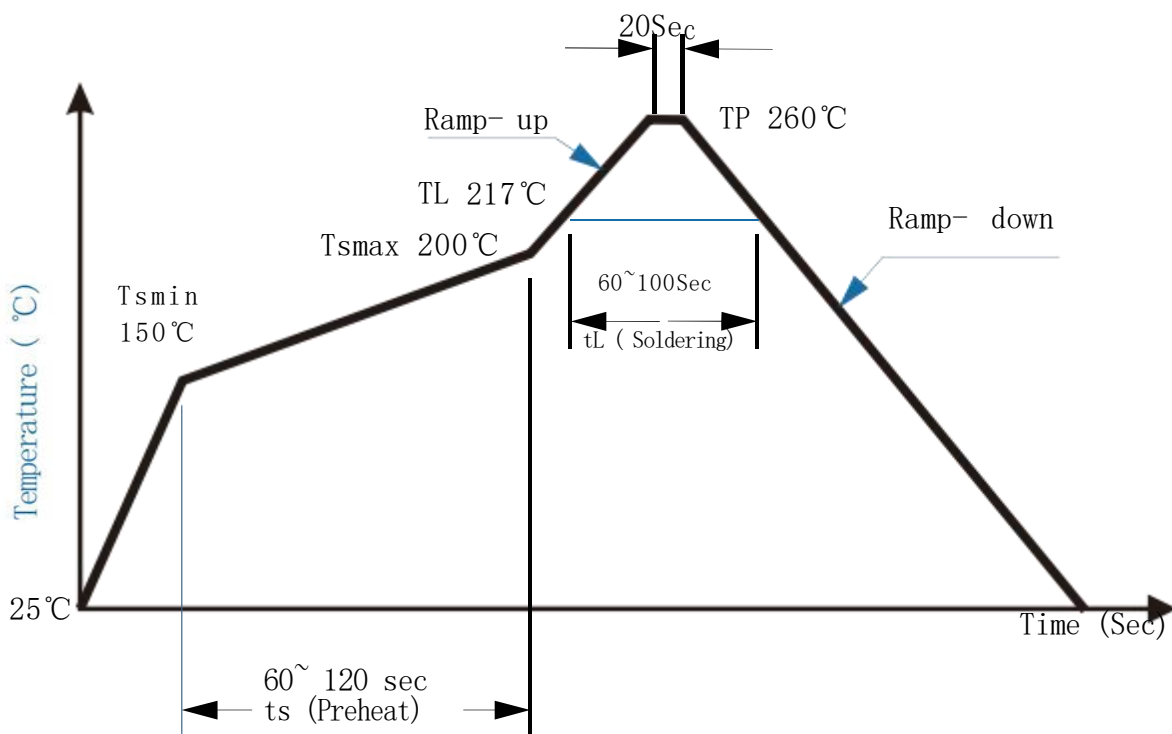
典型特性





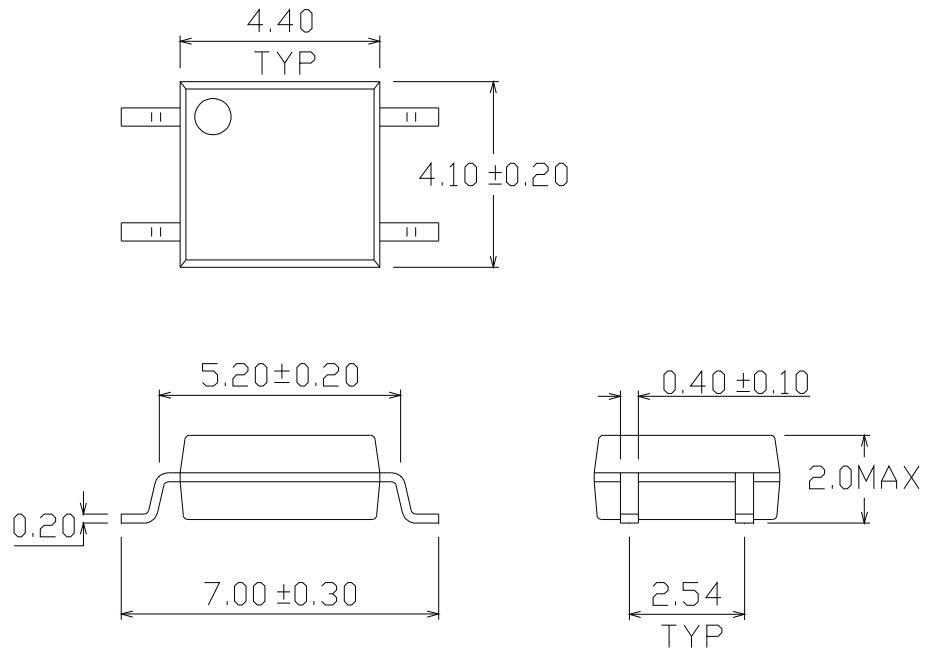


回流焊温度曲线图





外形尺寸 (单位: mm)





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