



## 概述

TLP181是一块小外形的贴片光电耦合器件，适合表面贴装生产。TLP181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。

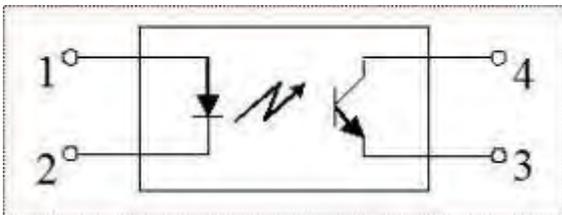
## 特性

- 电流转换比 (CTR)范围: 50~600% ( $I_F=5\text{mA}$ ,  $V_{CE}=5\text{V}$ )
- 输入-输出隔离电压 ( $V_{iso}=3750\text{V}_{rms}$ )
- 集电极-发射极击穿电压  $BV_{CEO}\geq 80\text{V}$

## 应用

- 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



## 绝对最大额定值 ( $T_a=25^\circ\text{C}$ )

	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	$V_R$	5	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		$V_{iso}$	3750	$V_{rms}$
工作温度		$T_{opr}$	$0\sim+70$	$^\circ\text{C}$
储存温度		$T_{stg}$	$-55\sim+125$	$^\circ\text{C}$
焊接温度		$T_{sol}$	240(10s)	$^\circ\text{C}$



光电特性 (Ta=25°C)

参数		符号	条件	最小	额定	最大	单位
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	$\mu\text{A}$
	输入端电容	$C_{in}$	$V=0, f=1\text{MHz}$	-	30	-	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	-	600	%
	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.	$1 \times 10^{11}$	-	-	$\Omega$
	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
	输入-输出电容	$C_s$	$V=0, f=1\text{MHz}$	-	0.8	-	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	$T_r$	$V_{CE}=10\text{V}, I_C=2\text{mA}, R_L=100\Omega$	-	-	12	$\mu\text{s}$
	下降时间	$T_f$		-	-	12	$\mu\text{s}$
	开启时间	$T_{on}$		-	-	12	$\mu\text{s}$
	关断时间	$T_{off}$		-	-	12	$\mu\text{s}$

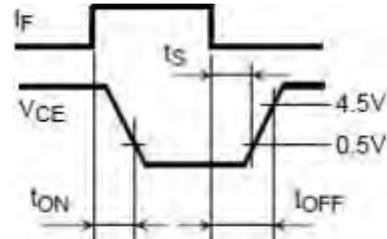
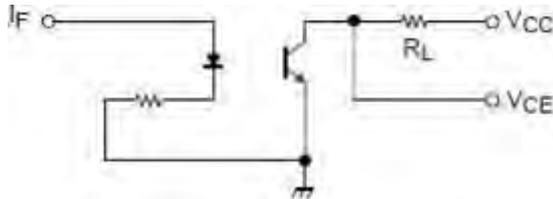
\*  $CTR=I_C/I_F \times 100\%$

CTR分级表

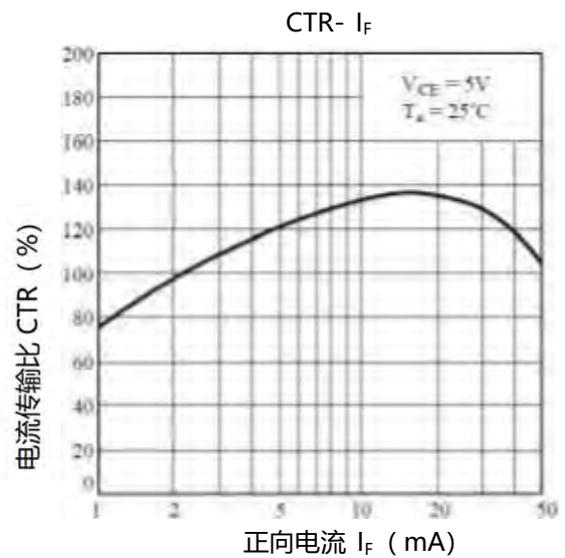
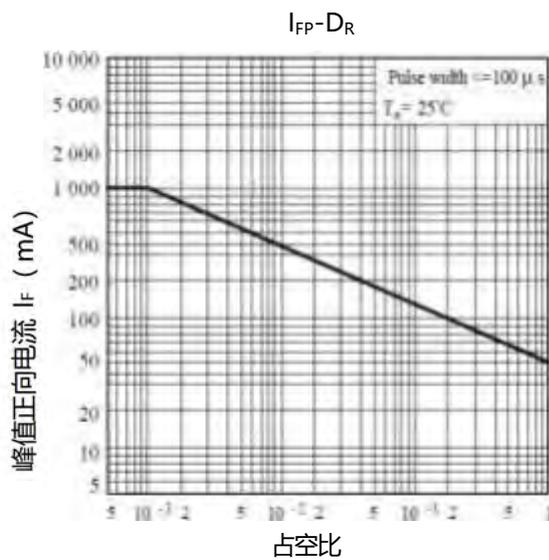
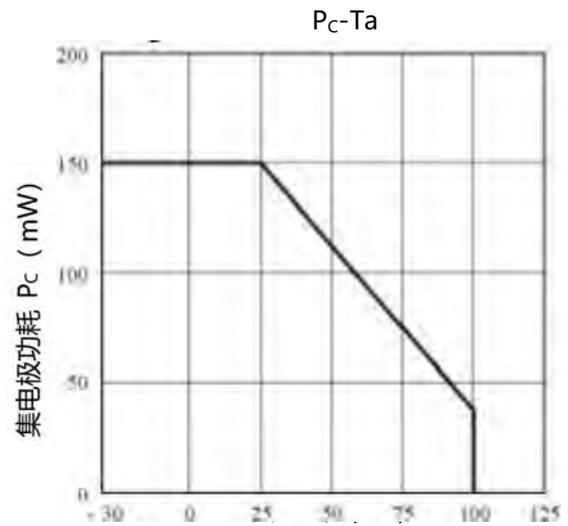
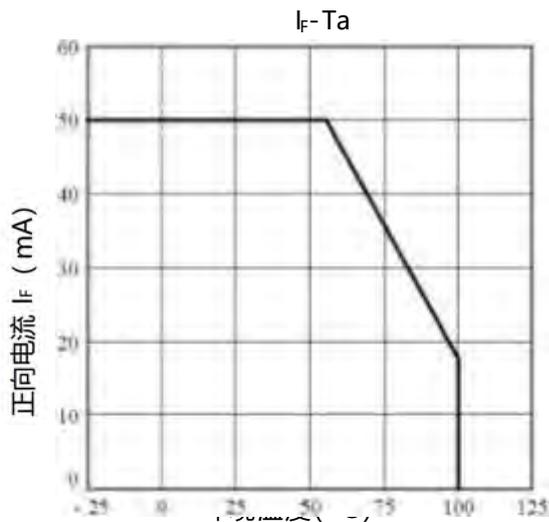
型号	分级标准	电流转换率 (%) ( $I_C/I_F$ )			印字
		$I_F = 5\text{mA}, V_{CE} = 5\text{V}, T_a = 25^\circ\text{C}$			
		Min	Type	Max	
TLP181	Blank	50	-	600	BLANK, Y, GB, GR, BL
	Y	50		150	Y
	GR	100	-	300	GR
	GB	100	-	600	GB
	BL	200	-	600	BL

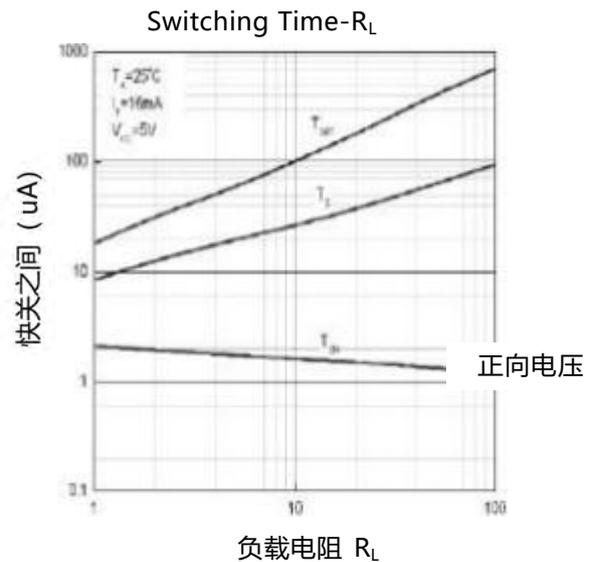
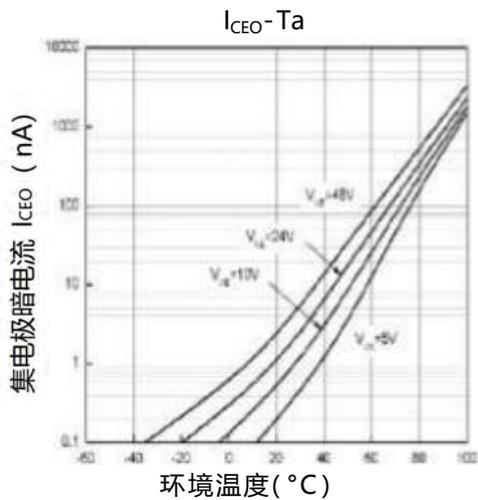
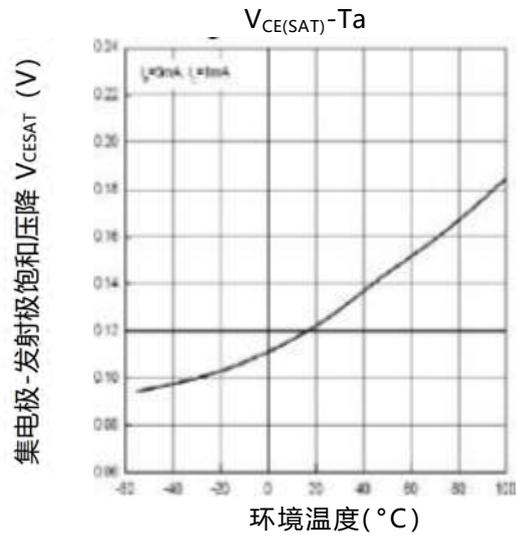
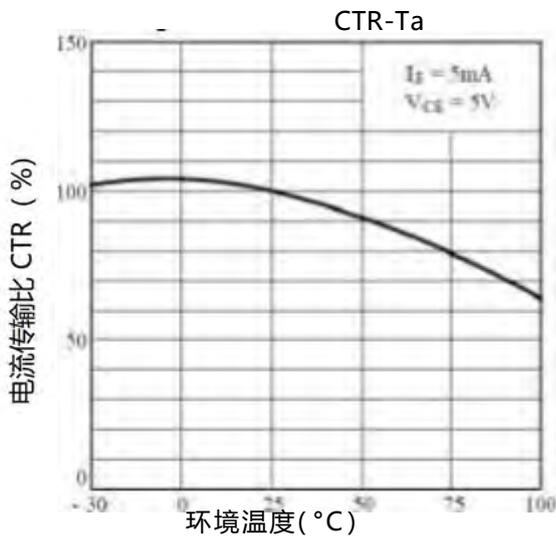
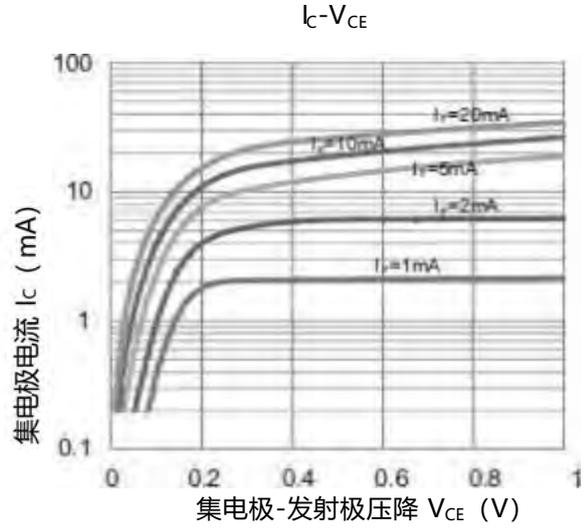
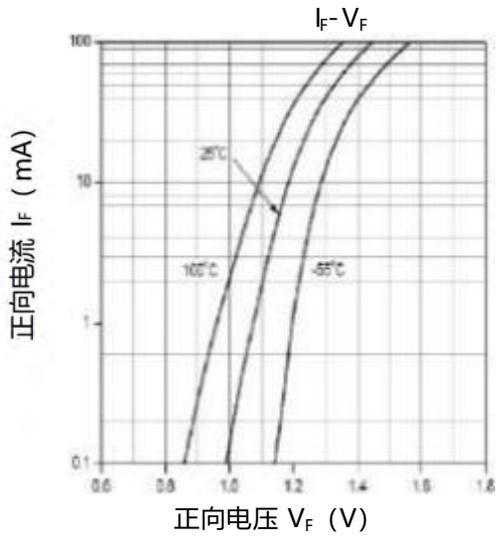


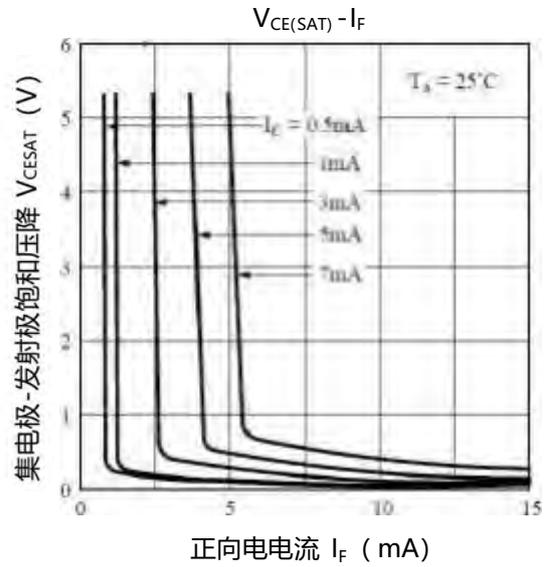
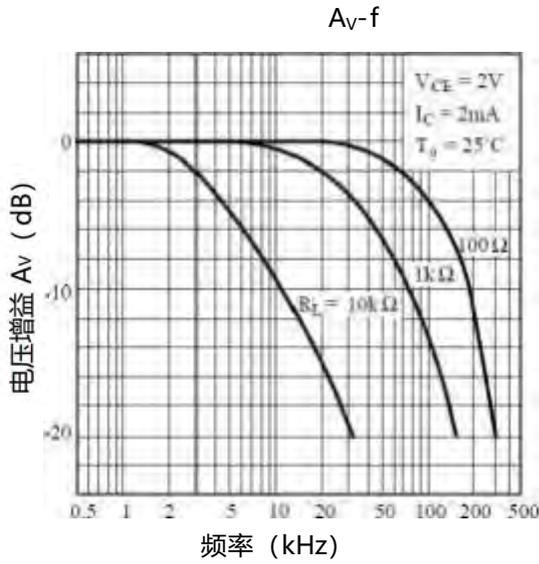
### 测试电路



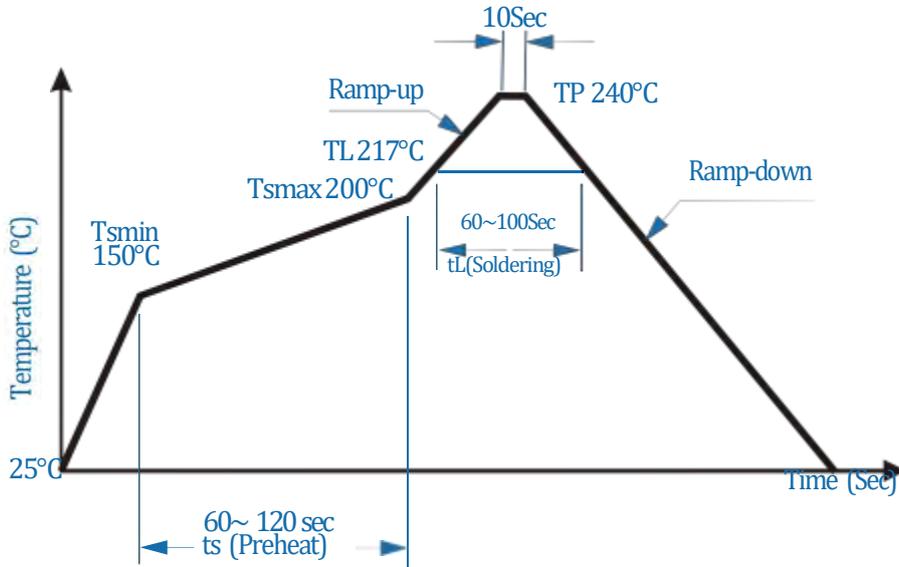
### 典型特性



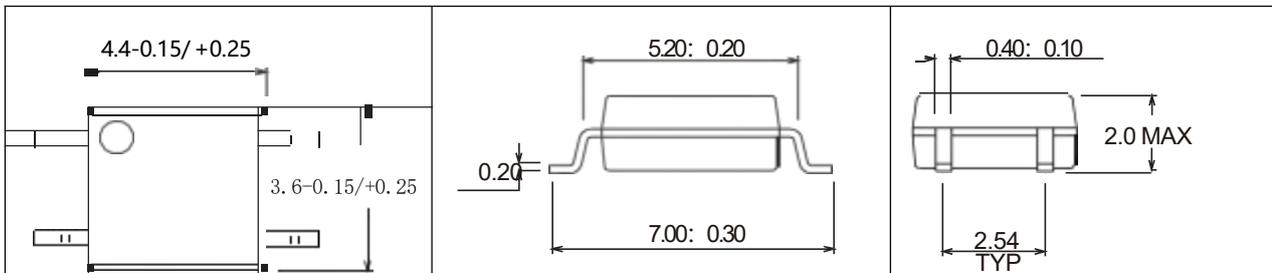




### 回流焊温度曲线图



### 外形尺寸





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