



概述

TLP185是一块小外形的贴片光电耦合器件，适合表面贴装生产。TLP185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。

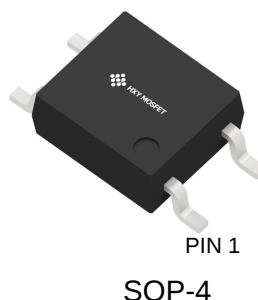
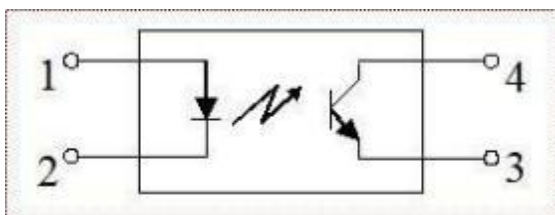
特性

- 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 ($V_{iso}=3750\text{ Vrms}$)
- 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

- 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	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}	3750	Vrms
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 (10s)	$^\circ\text{C}$



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
	输入端电容	C_{in}	$V=0, f=1\text{kHz}$	-	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
	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	$V_{CE}=10\text{V}, I_C=2\text{mA},$ $R_L=100\Omega$	-	3	18	μs
	下降时间	T_f		-	4	18	μs

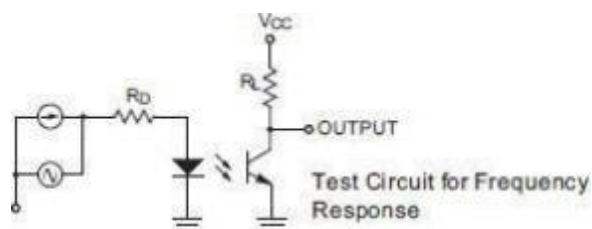
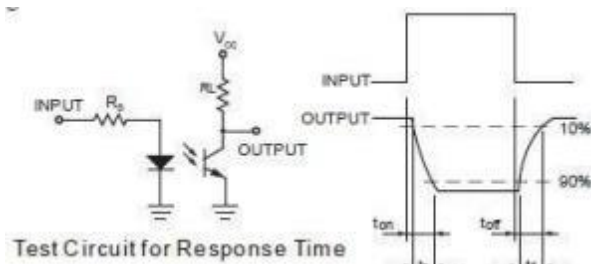
* $CTR=I_C/I_F \times 100\%$

CTR分级表

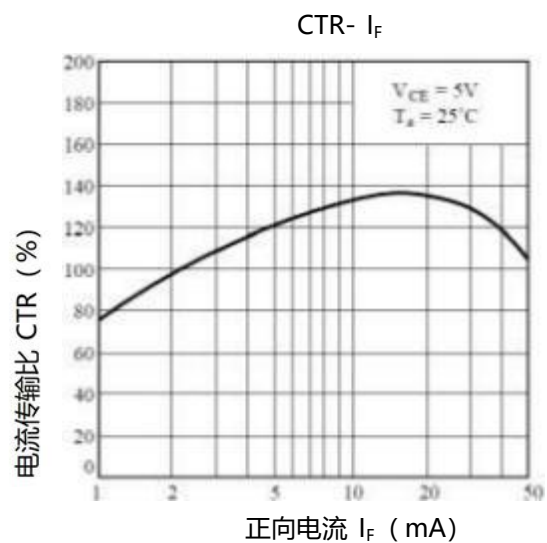
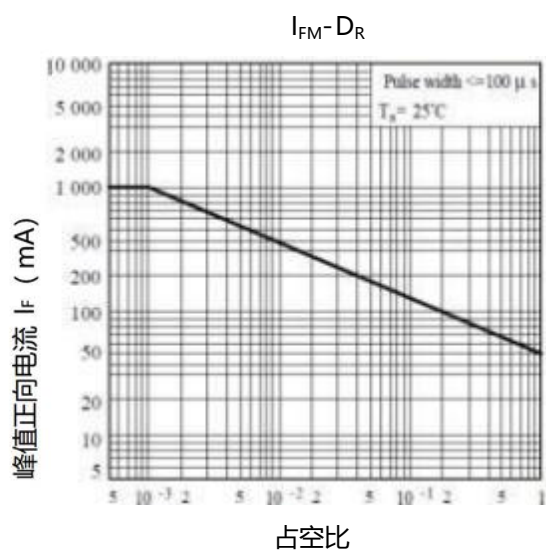
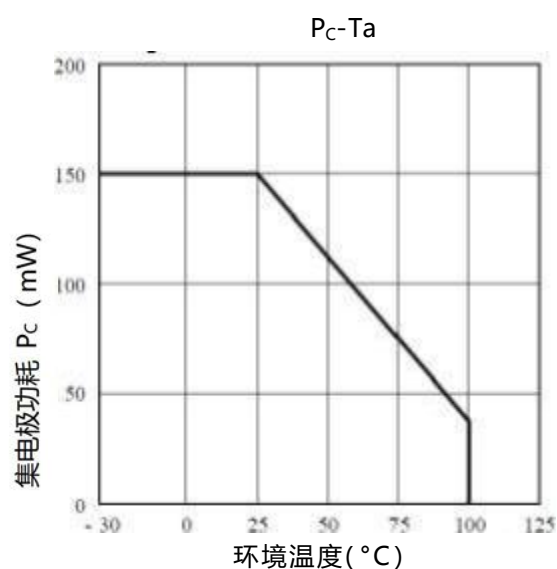
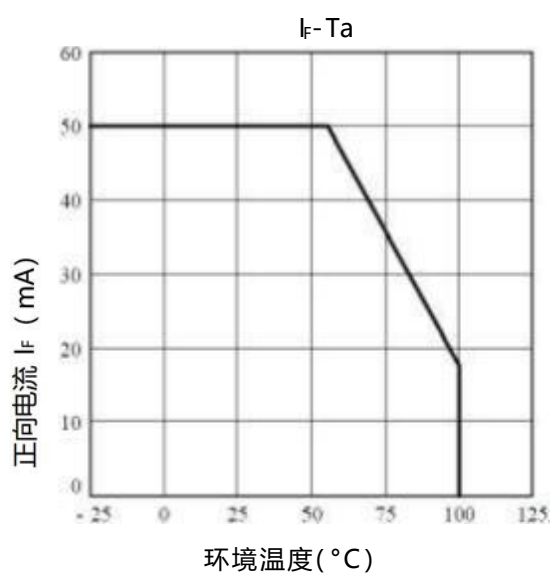
型号	分级标准	电流转换率(%) (I_C/I_F)					
		$I_F=5\text{mA}, V_{CE}=5\text{V}, T_a=25^\circ\text{C}$			$I_F=1\text{mA}, V_{CE}=0.4\text{V}, T_a=25^\circ\text{C}$		
		Min	Type	Max	Min	Type	Max
TLP185	TLP185-S	50	-	600			
	TLP185Y-S	50	-	150			
	TLP185GR-S	100	-	300	-	60	-
	TLP185GB-S	100	-	600	30	-	-
	TLP185GBL-S	200		220			
	TLP185GRL-S	100		200			
	TLP185GRH-S	150		300			
	TLP185GBH-S	200		400			

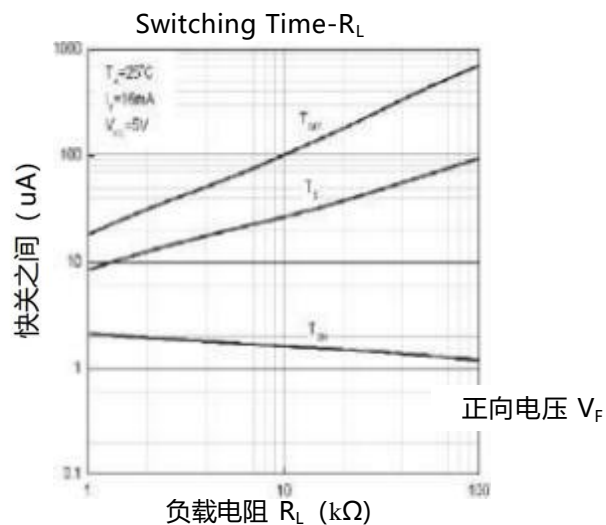
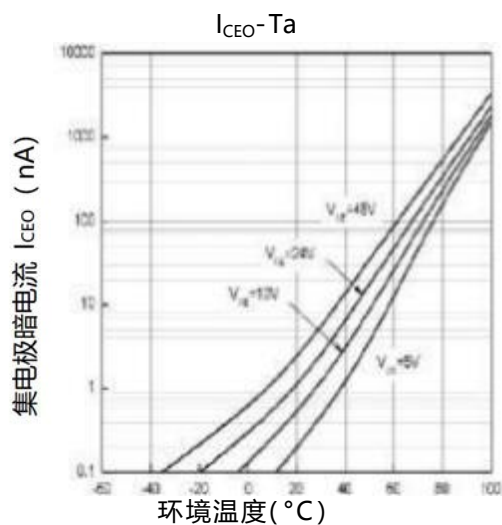
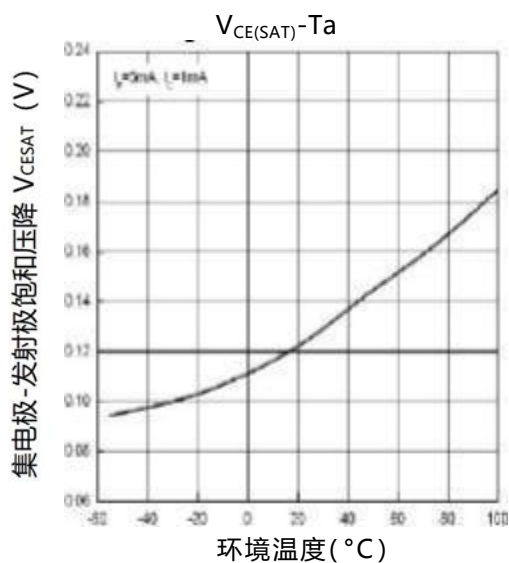
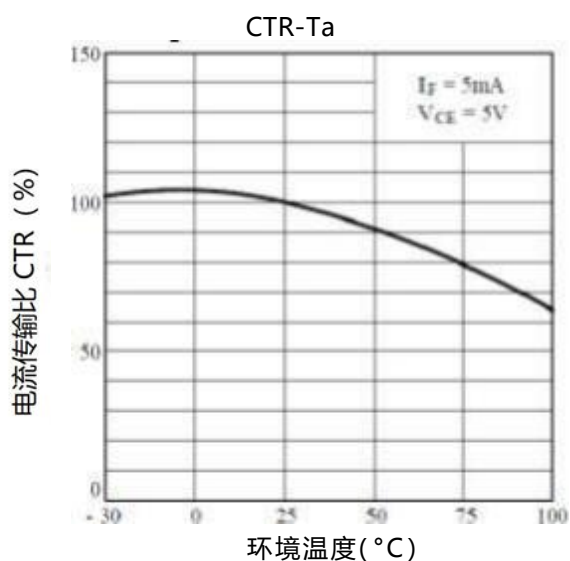
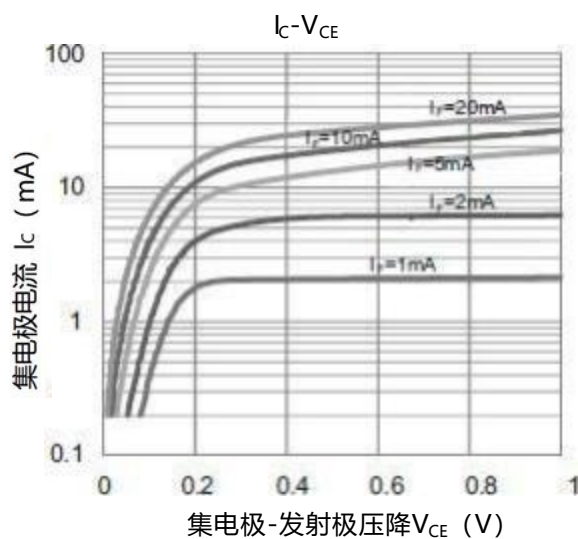
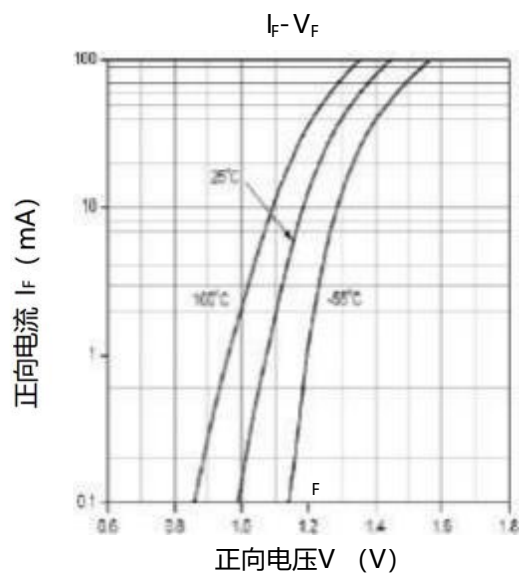


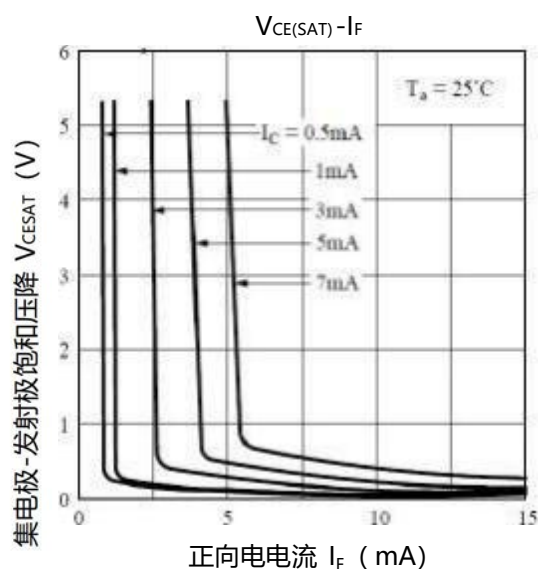
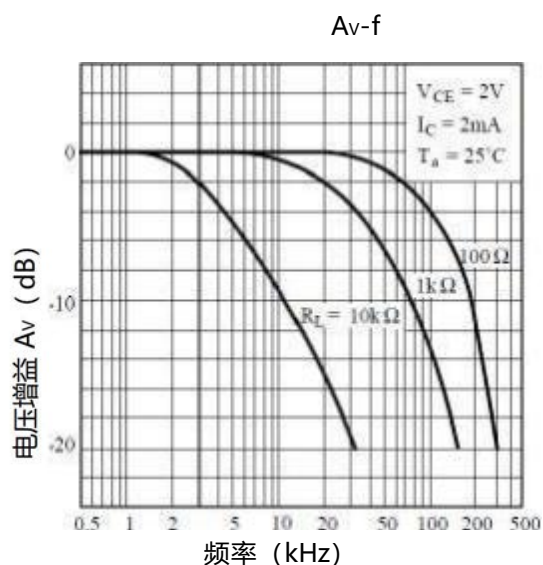
测试电路



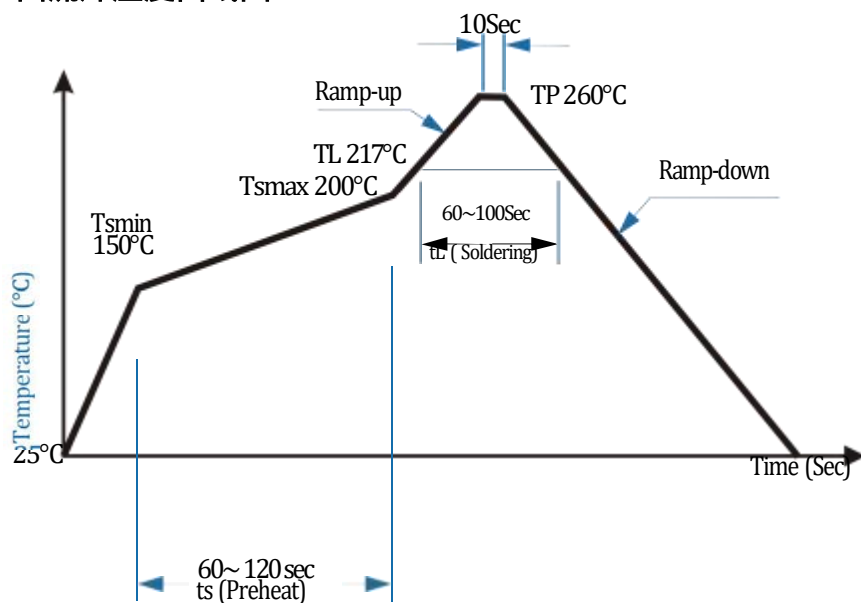
典型特性



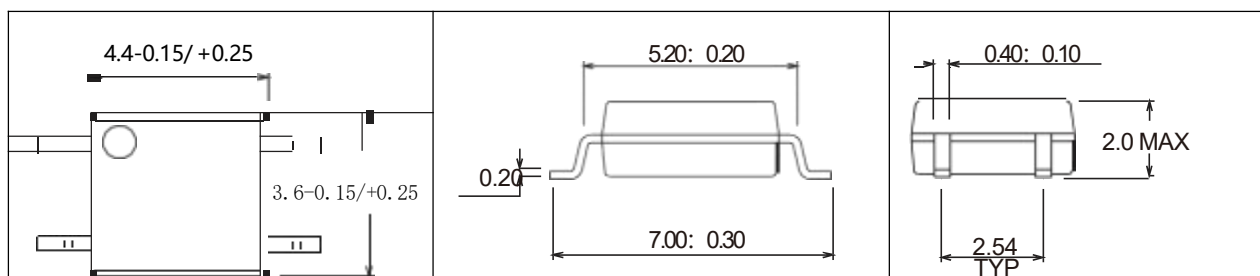




回流焊温度曲线图



外形尺寸





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