概述

CYPS2701是一块小外形的贴片光电耦合器件，适合表面贴装生产。CYPS2701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。

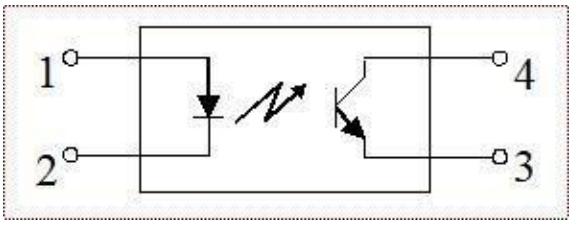
特性

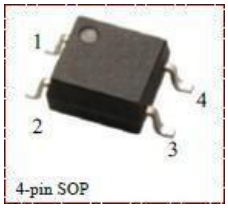
- 电流转换比 (CTR)范围: 50~300% （I_F =5mA ,V_{CE} =5V）
- 输入-输出隔离电压 (Viso=3750 Vrms)
- 集电极-发射极击穿电压 BV_{CEO}≥80V
- 工作温度：-55~110° C
- UL 认证（NO.:E497745）
- 符合 EU REACH 和 RoHS
- CQC 认证（NO:CQC20001238559）

Applications

- 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 (Ta=25℃)

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
	功耗降额	Δ P_D/° C	0.8	mW/℃
	功耗	P_D	80	mW/ch
	结温	Tj	125	℃
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	Tj	25	℃
总功耗		Ptot	200	mW
隔离电压		Viso	3750	Vrms
工作温度		Topr	-55~+110	℃
储存温度		Tstg	-55~+150	℃
焊接温度		Tsol	260(10s)	℃

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光电特性 (Ta=25°C)

Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit
输入	正向电压	V_F	I_F=5mA		1.1	1.4	V
	反向电流	I_R	V_R=5V			5	μA
	输入端电容	C_{in}	V=0, f=1MHz	-	30		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	100	300	%
	集电极-发射极饱和压降	$V_{CE(sat)}$	I_F=10mA, I_C=2mA			0.3	V
	隔离电阻	R_{ISO}	DC1000V, 40~60%R.H.	$1x10^{11}$			Ω
	隔离电容	Cf	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
	输入-输出电容	C_S	V=0, f=1MHz		0.8		pF
	截止频率	Fc	V_{CE}=5V, I_C=2mA, R_L=100Ω, -3dB		80		kHz
开关时间	上升时间	Tr	V_{CE}=5V, I_C=2mA, R_L=100Ω	-	3		μs
	下降时间	Tf			5		μs

* CTR=I_C/I_F x 100%

CTR 分级表

型号	分级标准	电流转换率(%)(I_C/I_F)		
		I_F = 5mA, V_{CE} = 5V, Ta = 25°C		
		Min	Type	Max
CYPS2701	M	50	-	150
	P	150	-	300
	L	200	-	350
	K	300	-	450
	LK	400	-	600

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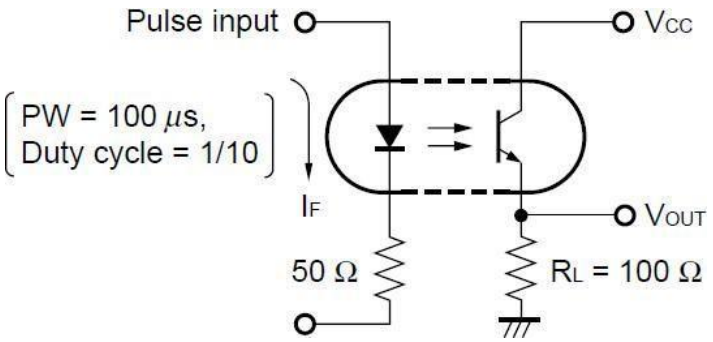
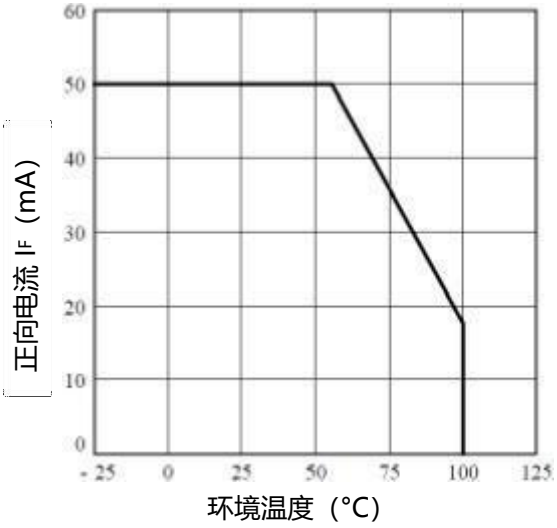
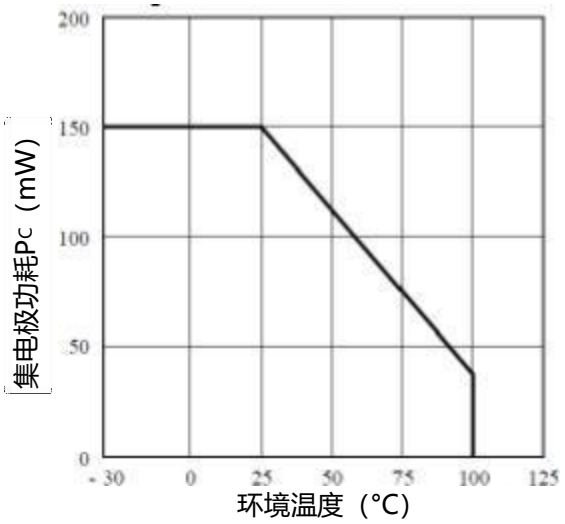
测试电路



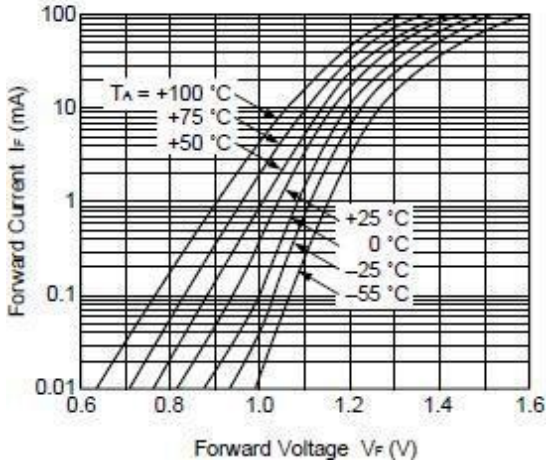
I_F-Ta



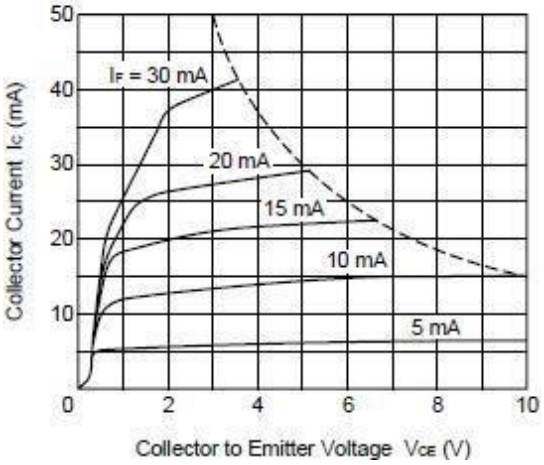
P_C-Ta



FORWARD CURRENT vs.
FORWARD VOLTAGE



COLLECTOR CURRENT vs.
COLLECTOR TO EMITTER VOLTAGE



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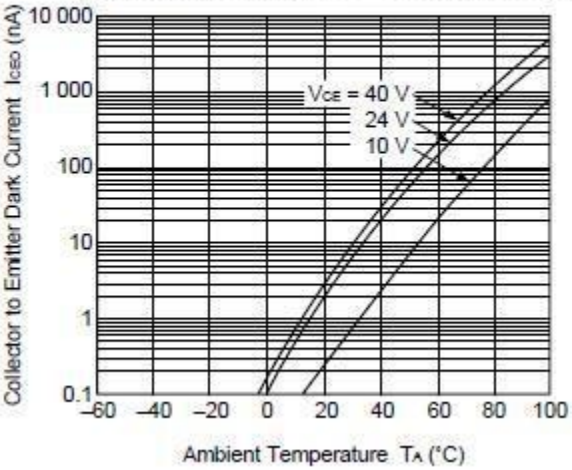
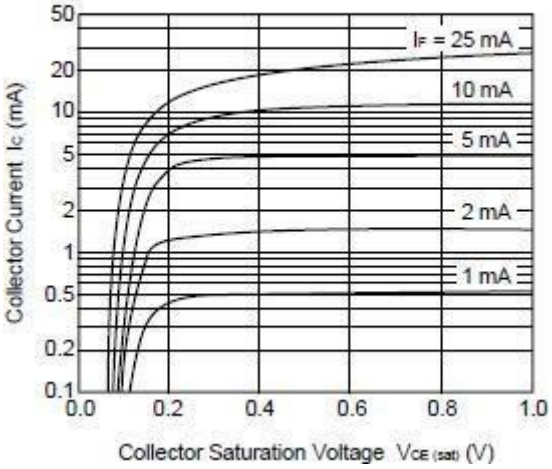
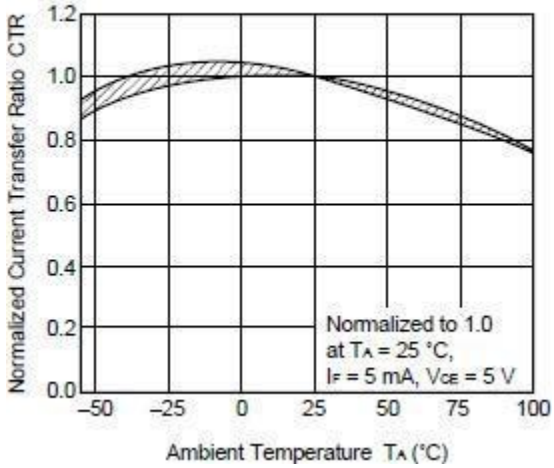
COLLECTOR TO EMITTER DARK CURRENT vs. AMBIENT TEMPERATURE



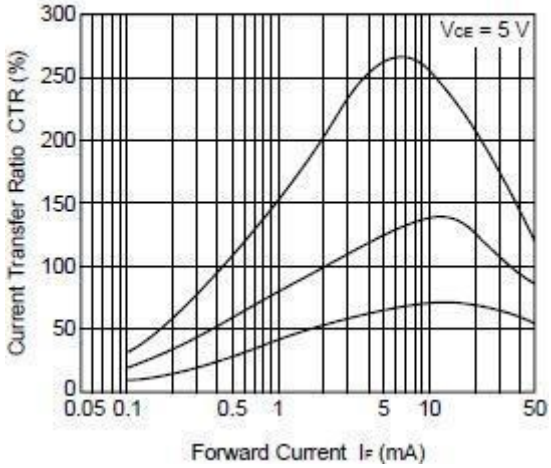
COLLECTOR CURRENT vs. COLLECTOR SATURATION VOLTAGE



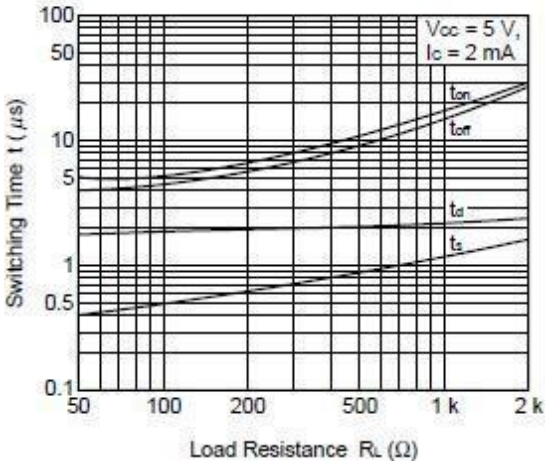
NORMALIZED CURRENT TRANSFER RATIO vs. AMBIENT TEMPERATURE



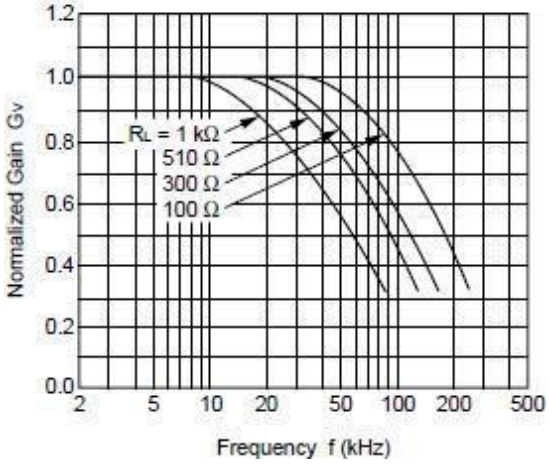
CURRENT TRANSFER RATIO vs. FORWARD CURRENT

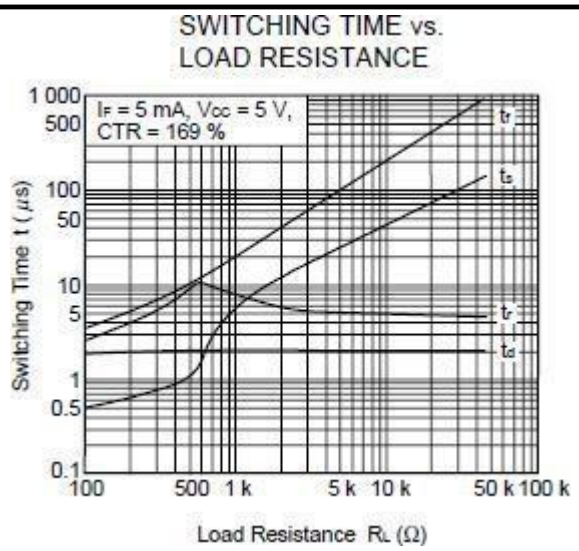


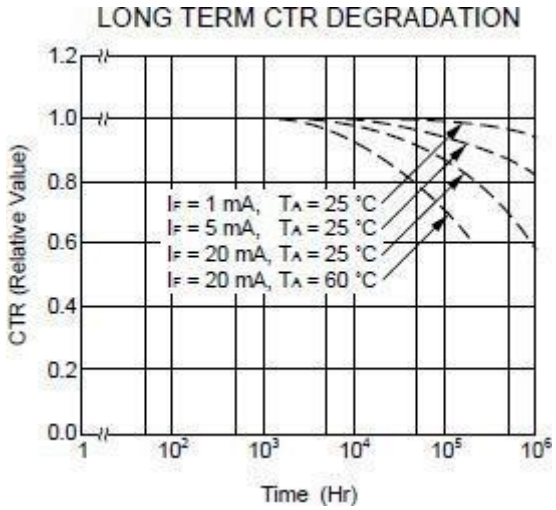
SWITCHING TIME vs. LOAD RESISTANCE



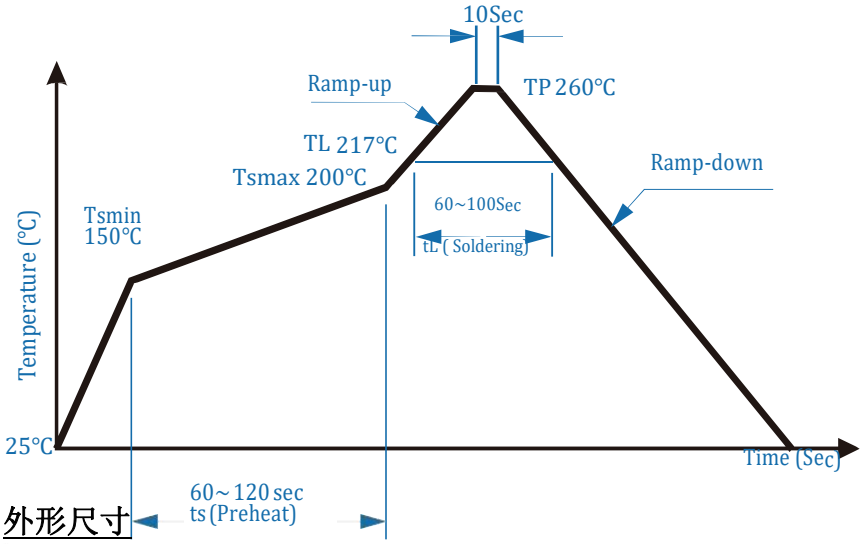
FREQUENCY RESPONSE



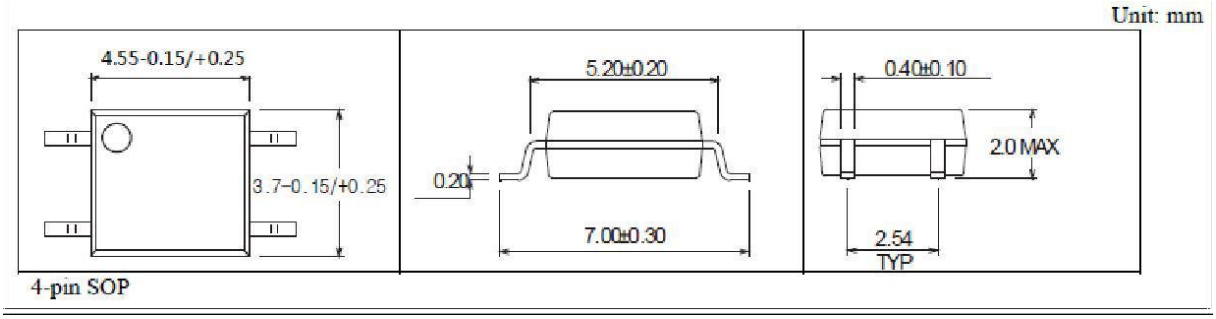




回流焊温度曲线图



外形尺寸

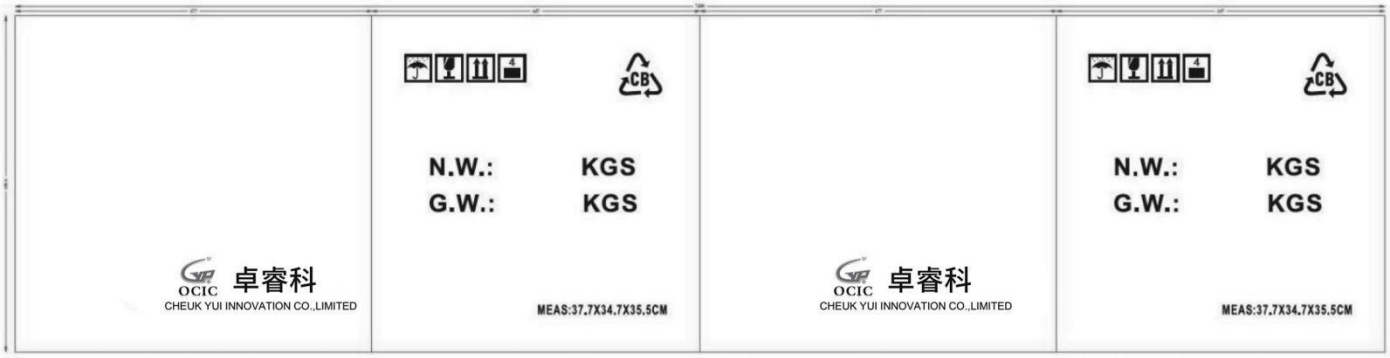


包装

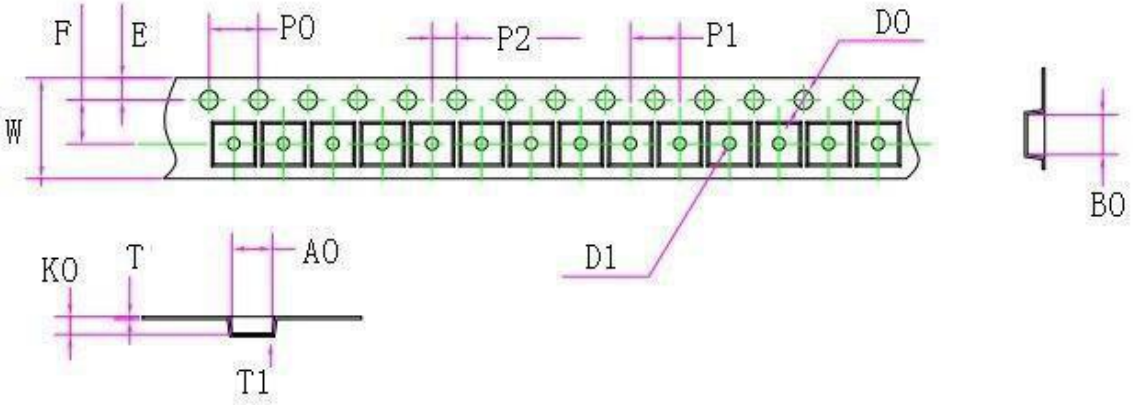
封装形式	包装方式	盘数量	盒数量	箱数量	静电袋	盒规格	箱规格
SOP4	卷盘 (ϕ330mm)	3000PCS/盘	15000PCS/盒	60000PCS/箱	-	355*90*337mm	377*347*355mm

1) 内盒尺寸

2) 外箱尺寸



编带尺寸



W	12.00±0.10
E	1.75±0.10
F	5.50±0.05
D0	1.50+0.10/-0
D1	1.50+0.10/-0
P0	4.00±0.10
P1	8.00±0.10
P2	2.00±0.10
A0	3.90±0.10
B0	7.38±0.10
K0	2.50±0.10
T	0.2±0.05
T1	0.10min
10*P0	40.00±0.20

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