概述

PC354NJ0000F是一块小外形的贴片光电耦合器件，适合表面贴装生产。PC354NJ0000F是由两个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。

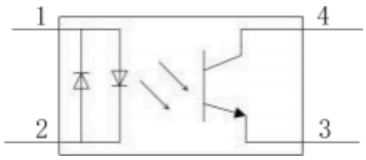
特性

- 电流转换比 (CTR)范围 ≥ 20% (I_F = ±1mA ,V_{CE} =5V)
- 输入-输出隔离电压(Viso=3750Vrms)
- 集电极-发射极击穿电压 BV_{CEO}≥80V
- 工作温度：-55~110° 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



PIN 1

SOP-4

极限参数(Ta=25 ° C)

参数		符号	额定值	单位
发射端	正向电流	I_F	±50	mA
	功耗	P_D	70	mW
	额定值降低因子(在 Ta = 100°C 以上)	P_{DD}	2.9	mW/°C
	热阻(结-环境)	Rth_{J-A}	325	°C/W
	热阻(结-壳)	Rth_{J-C}	200	°C/W
接收端	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
总功耗		Ptot	200	mW
输入输出瞬时耐受电压		Viso	3750	Vrms
工作温度		Topr	-55~+100	°C
存储温度		Tstg	-55~+125	°C
焊接温度		Tsol	260	°C

光电特性(Ta=25 ° C)

参数		符号	条件	最小	典型	最大	单位
发射端	正向电压	V_F	I_F= ±20mA	-	1.2	1.4	V
	终端电容	Ct	V=0,f= 1kHz	-	30	250	pF
接收端	集电极暗电流	I_{CEO}	V_{CE}=20V	-	-	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= 10μA, I_F=0	7	-	-	V
传输特性	电流转换比	CTR*	I_F=± 1mA, V_{CE}=5V	50	-	150	%
	集电极-发射极饱和压降	$V_{CE(sat)}$	I_F=±20mA,I_C= 1mA	-	0. 1	0.2	V
	隔离电阻	R_{ISO}	DC500V ,40~60%R.H.	$5x10^{10}$	$1x10^{11}$	-	Ω
	隔离电容	Cf	V=0, f= 1MHz	-	0.6	1.0	pF
	截止频率	Fc	V_{CE}=5V, I_C=2mA, R_L= 100Ω, -3dB	-	80	-	kHz
	上升时间	Tr	V_{CE}=2V, I_C=2mA,R_L= 100Ω	-	-	18	μs
	下降时间	Tf	V_{CE}=2V, I_C=2mA,R_L= 100Ω	-	-	18	μs

* CTR=I_C/I_Fx 100%

典型特性

测试电路

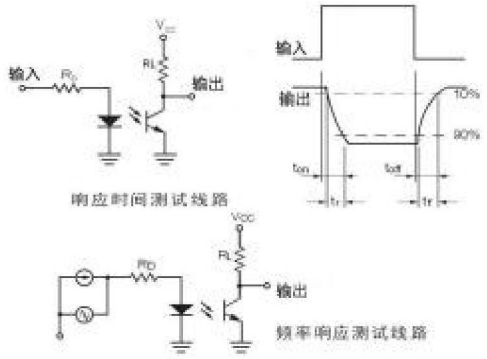


Fig.1 相对电流转换比 vs 正向电流曲线图

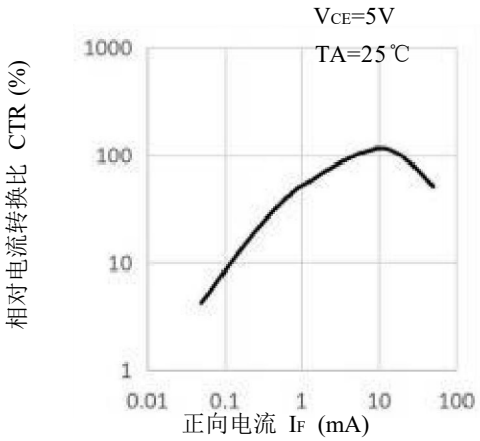


Fig.2 正向电流 vs 正向电压曲线图

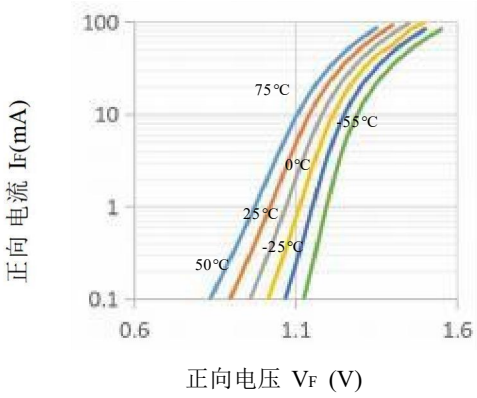


Fig.3 集电极电流 vs 集-发电压曲线图

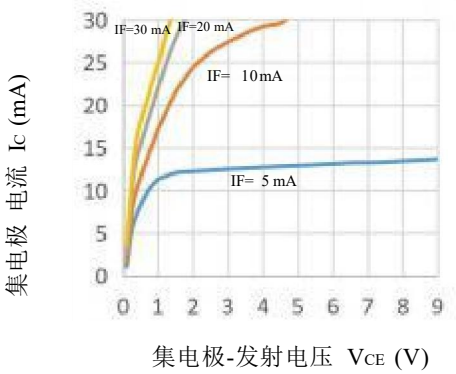


Fig.4 相对电流转换比 vs 环境温度曲线图

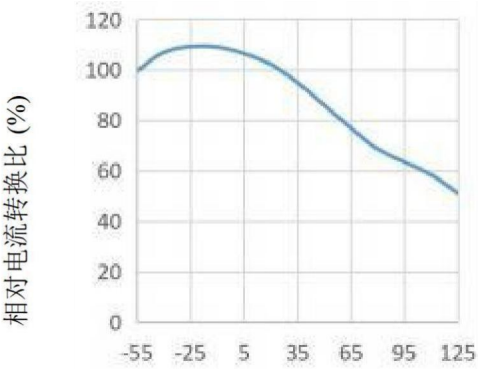


Fig.5 饱和压降 vs 环境温度曲线图

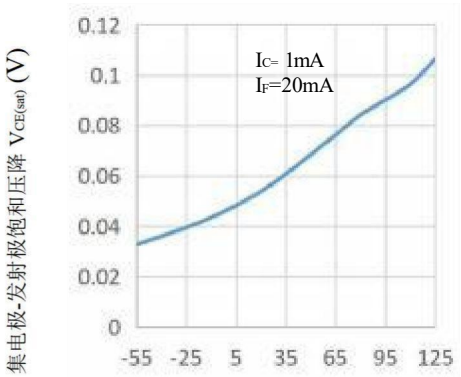


Fig.6 集电极暗电流 vs 环境温度曲线图

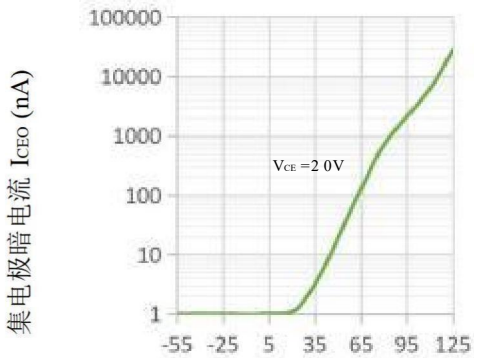


Fig.7 响应时间 vs 负载电阻曲线图

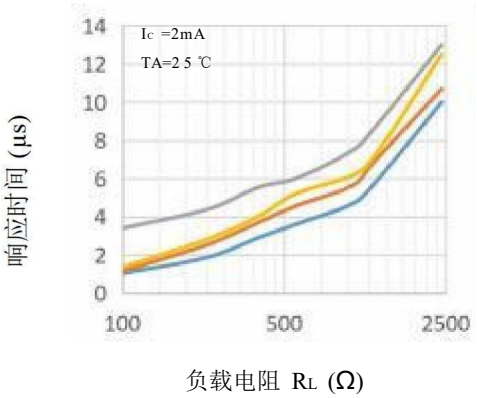


Fig.8 频率响应曲线图

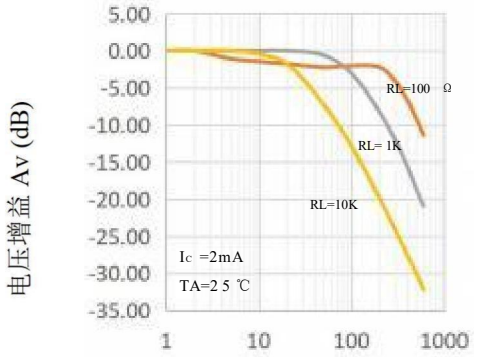
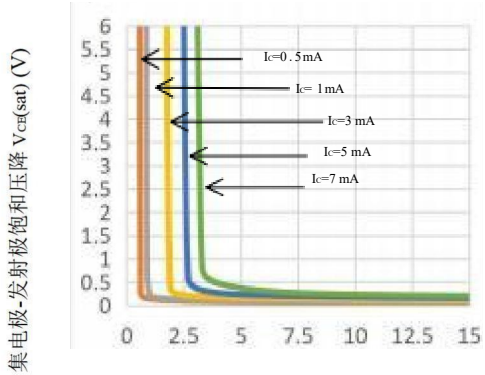
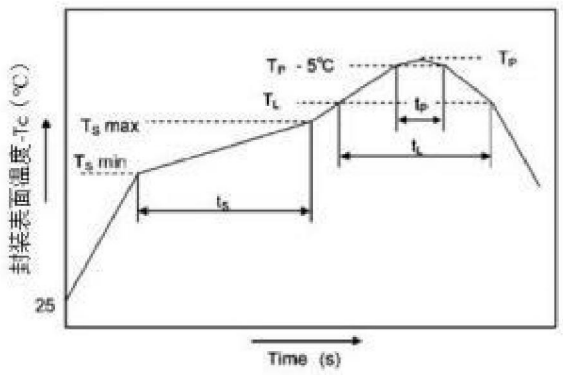


Fig.9 饱和压降 vs 正向电流曲线图

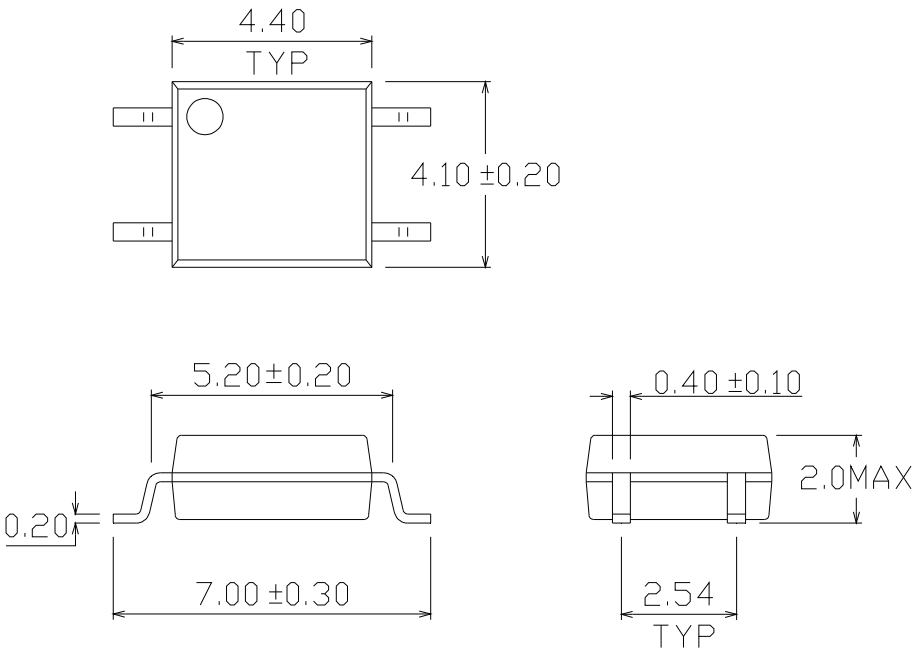


回流焊温度曲线图



	符号	最小值	最大值	单位
预热温度	Ts	150	200	°C
预热时间	ts	60	120	s
升温速率			3	°C/s
液相线温度	TL	217		°C
时间高于 TL	tL	60	150	s
峰值温度	Tp		260	°C
Tc 在(Tp-5)和 Tp 之间的时间	tp		30	s
降温速率			6	°C/s

外形尺寸(单位)



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