PC357

DC Input Photo Transistor Coupler

概述

PC357是一块小外形的贴片光电耦合器件，适合表面贴装生产。PC357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。

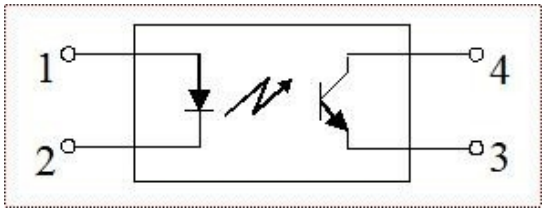
特性

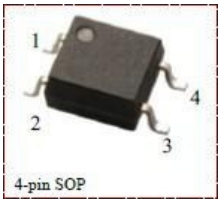
- 电流转换比 (CTR)范围: 50~600% （I_F =5mA ,V_{CE} =5V）
- 输入-输出隔离电压 (Viso=3750 Vrms)
- 集电极-发射极击穿电压 BV_{CEO}≥80V
- 工作温度：-55~110° C
- UL 认证（NO.:E497745）
- 符合 EU REACH 和 RoHS
- CQC 认证（NO:CQC20001238559）

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°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	Tj	125	°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	Tj	125	°C
总功耗		Ptot	200	mW
隔离电压		Viso	3750	Vrms
工作温度		Topr	-55~+110	°C
储存温度		Tstg	-55~+125	°C
焊接温度		Tsol	260	°C

光电特性 (Ta=25°C)

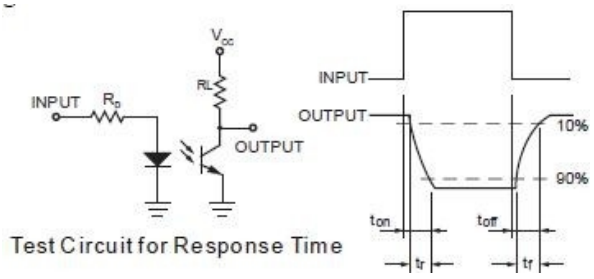
Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit
输入	正向电压	V_F	I_F=20mA		1.2	1.4	V
	反向电流	I_R	V_R=5V	-	-	10	μA
	终端电容	C_t	V=0, f=1kHz	-	30	250	pF
输出	集电极暗电流	I_{CEO}	V_{CE}=70V	-	-	100	nA
	集电极-发射极击穿电压	BV_{CEO}	I_C=0.1mA, I_F=0	80	-	-	V
	发射极-集电极击穿电压	BV_{ECO}	I_E=0.1mA, I_F=0	7	-	-	V
传输特性	电流转换比	CTR	I_F=5mA, V_{CE}=5V	50	-	600	%
	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}	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
	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}=10V, I_C=2mA, R_L=100Ω	-	4	18	μs
	下降时间	Tf		-	3	18	μs

* CTR=I_C/I_F x 100%

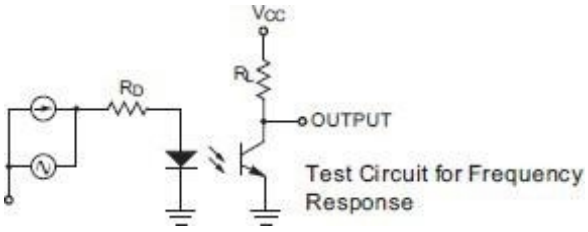
CTR 分级表

型号	分级标准	I_C(mA)		对应 CTR (%)	
		I_F = 5mA, V_{CE} = 5V, Ta = 25°C		I_F = 5mA, V_{CE} = 5V, Ta = 25°C	
		Min	Max	Min	Max
CYPC357	Blank	2.5	30.0	50	600
	A	4.0	8.0	80	160
	B	6.5	13.0	130	260
	C	10.0	20.0	200	400
	D	15.0	30.0	300	600
	A or B	4.0	13.0	80	160
	B or C	6.5	20.0	130	400
	C or D	10.0	30.0	200	600
	A.B or C	4.0	20.0	80	400
	B,C or D	6.5	30.0	130	600
	A,B,C or D	4.0	30.0	80	600

测试电路

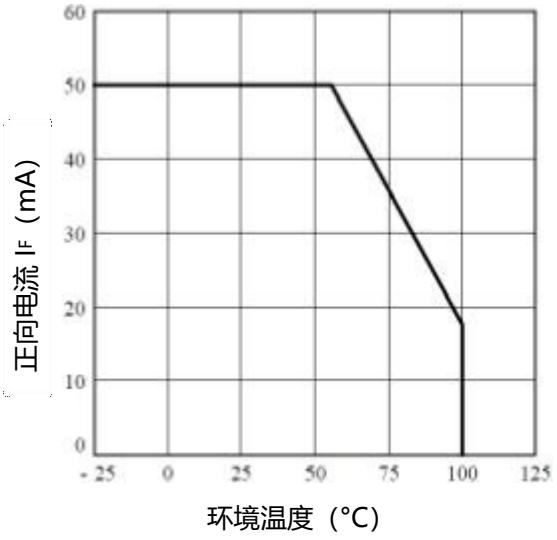


Test Circuit for Response Time

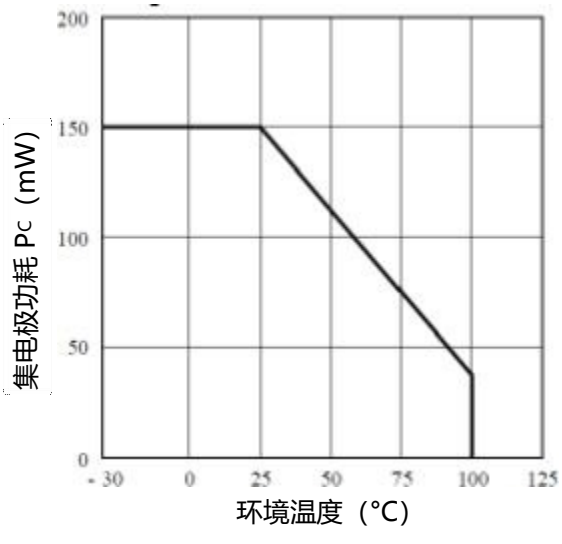


Test Circuit for Frequency Response

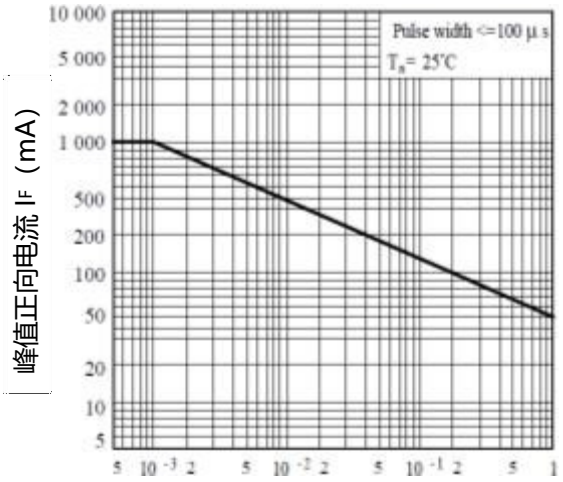
I_F-Ta



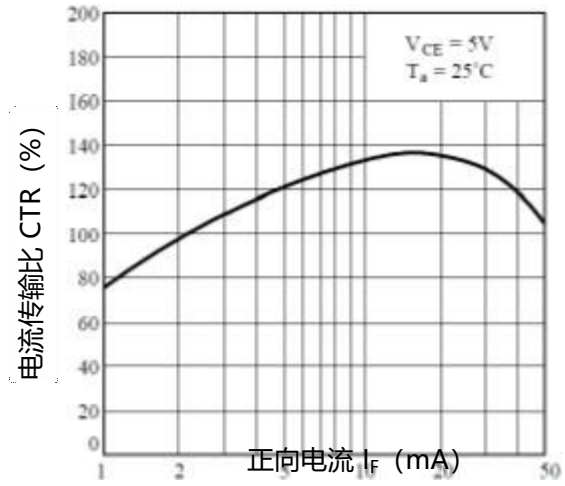
P_C-Ta



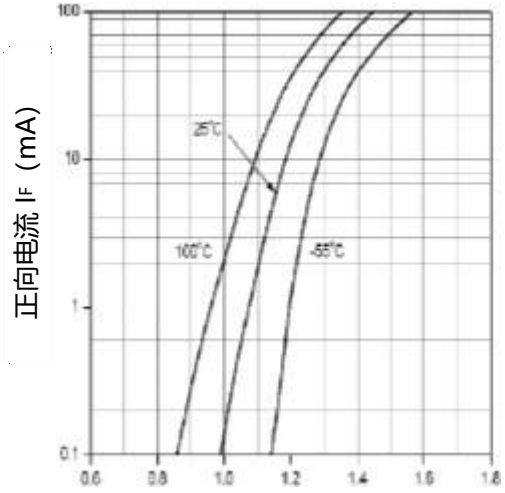
I_{FM}-D_R



CTR- I_F

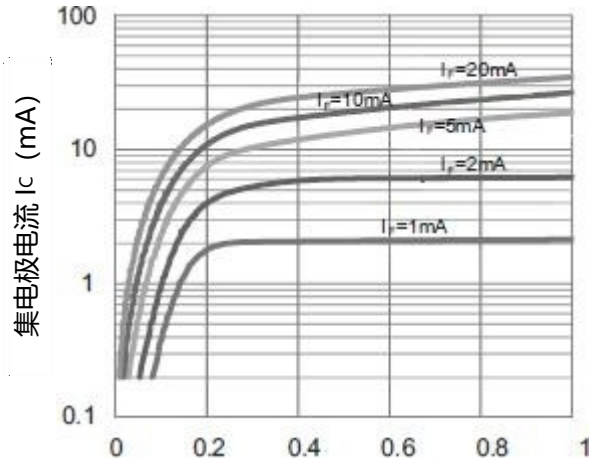


I_F-V_F



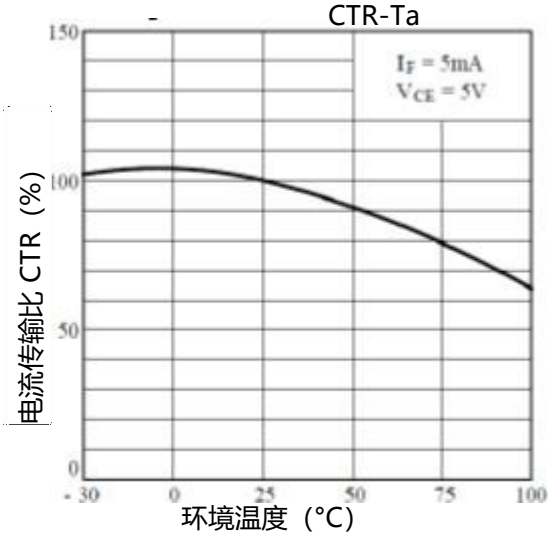
正向电压 V_F（V）

I_C-V_{CE}



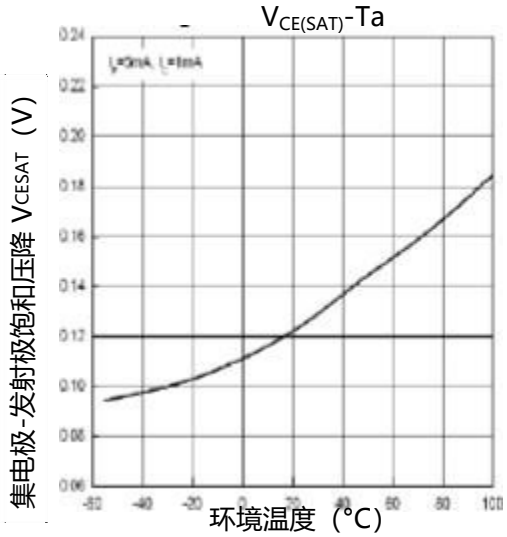
集电极-发射极压降 V_{CE}（V）

CTR-Ta



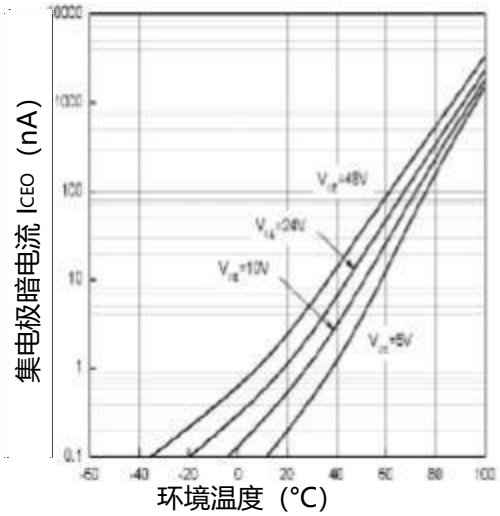
环境温度（°C）

$V_{CE(SAT)}$-Ta



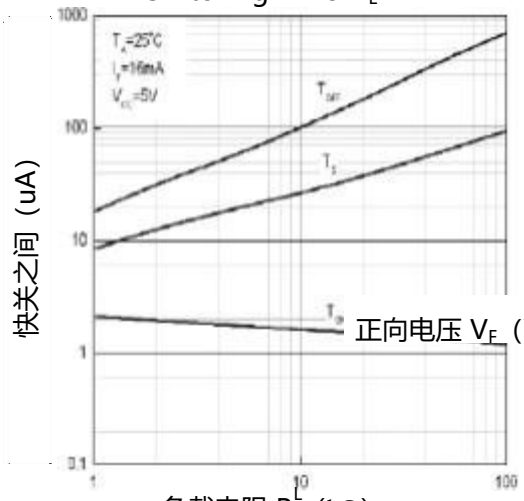
环境温度（°C）

I_{CEO}-Ta



环境温度（°C）

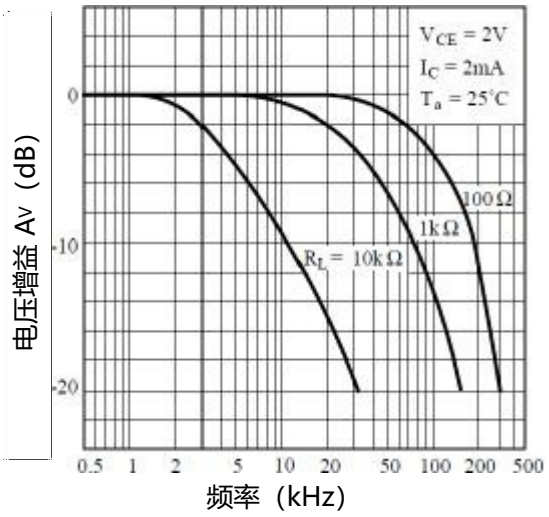
Switching Time-R_L



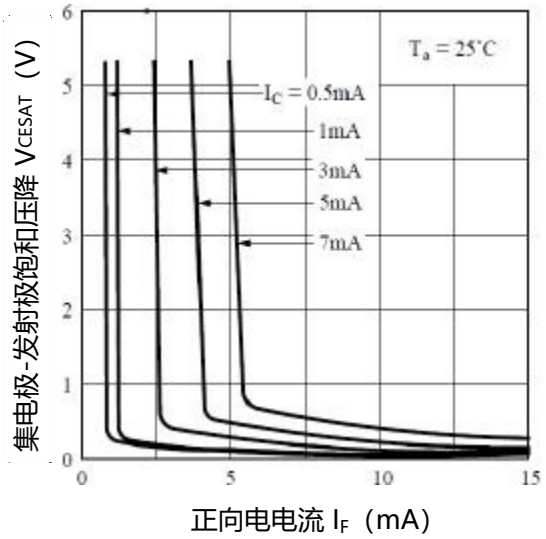
负载电阻 R_L（kΩ）

正向电压 V_F（V）

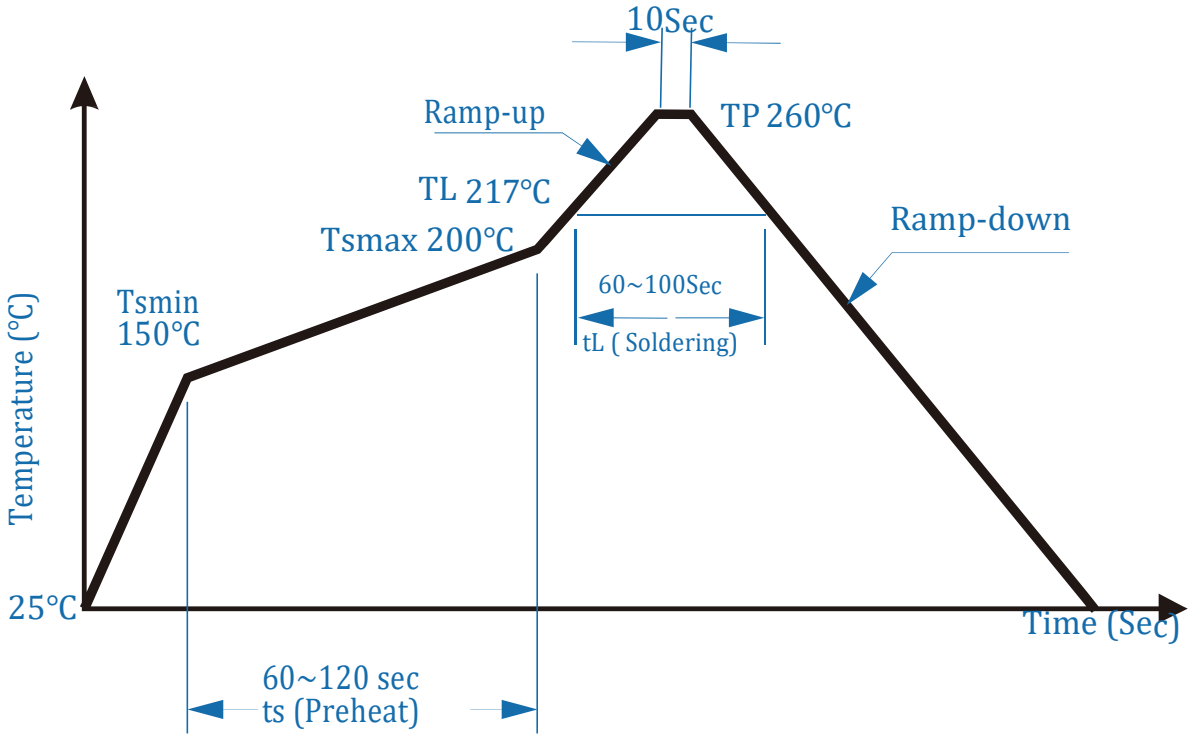
A_V-f



$V_{CE(SAT)}$-I_F

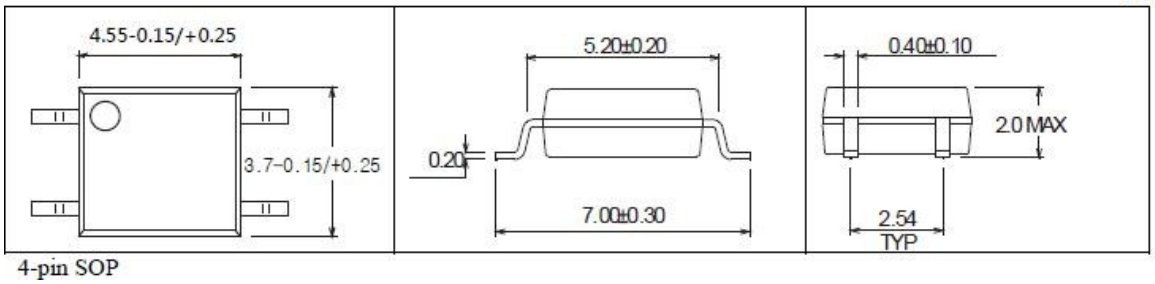


回流焊温度曲线图



外形尺寸

Unit: mm

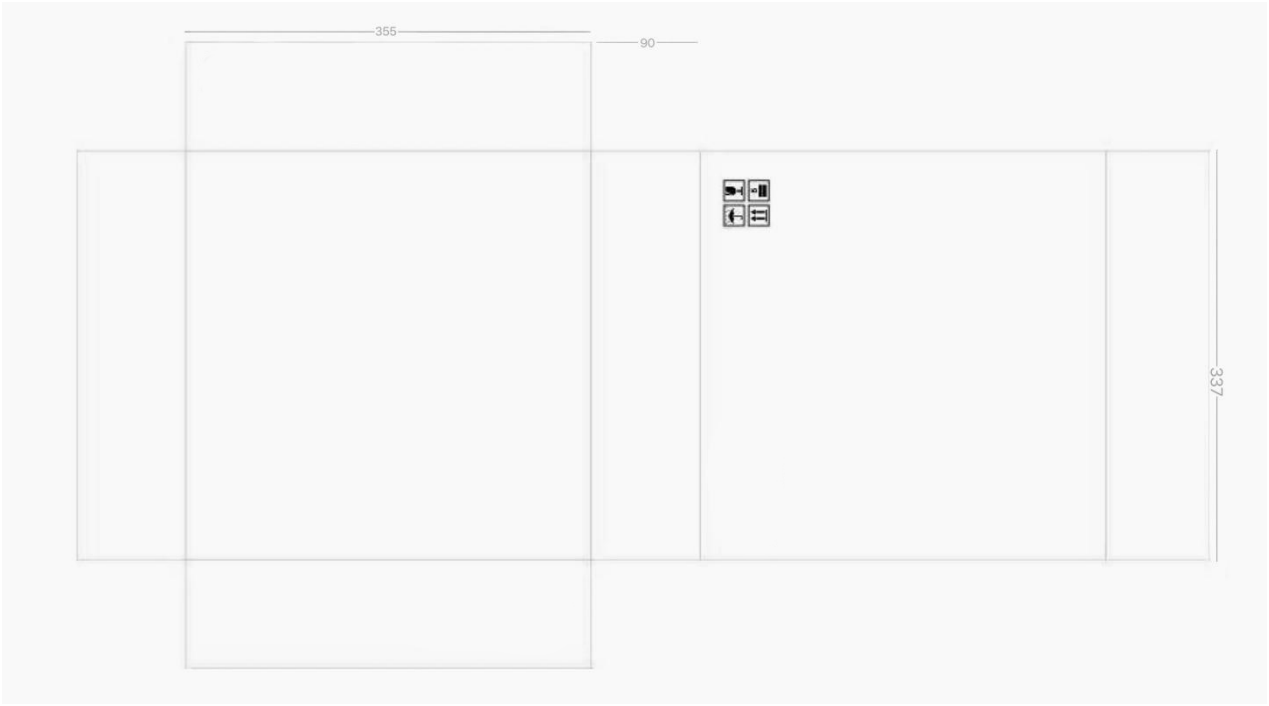


4-pin SOP

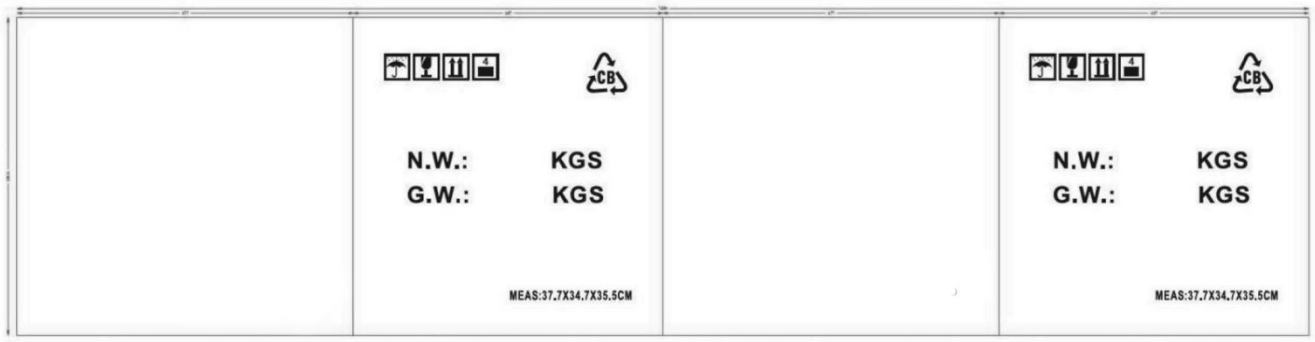
包装

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

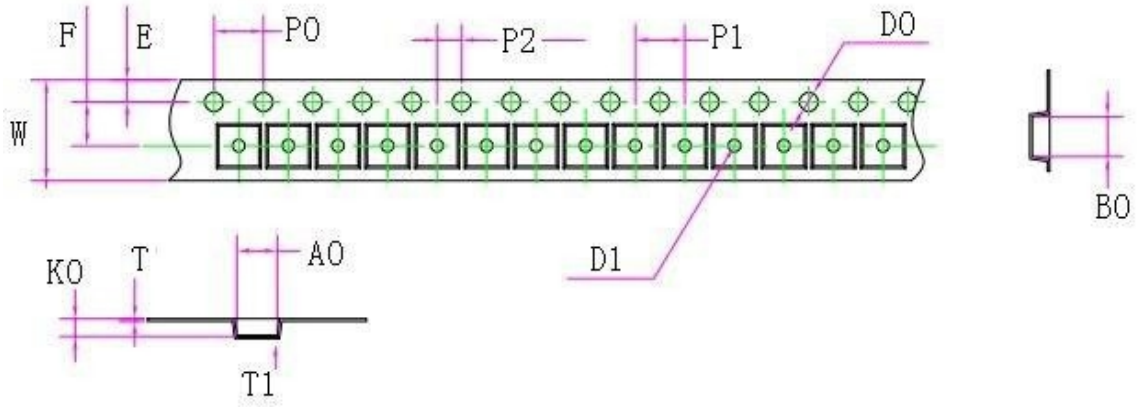
1) 内盒尺寸



2) 外箱尺寸



编带尺寸



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

Contact Information

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The product specification aims to provide users with a reference regarding various product parameters, performance, and usage. It presents certain aspects of the product's performance in graphical form and is intended solely for users to select product and make product comparisons, enabling users to better understand and evaluate the characteristics and advantages of the product. It does not constitute any commitment, warranty, or guarantee.

The product parameters described in the product specification are numerical values, characteristics, and functions obtained through actual testing or theoretical calculations of the product in an independent or ideal state. Due to the complexity of product applications and variations in test conditions and equipment, there may be slight fluctuations in parameter test values. TANI shall not guarantee that the actual performance of the product when installed in the customer's system or equipment will be entirely consistent with the product specification, especially concerning dynamic parameters. It is recommended that users consult with professionals for product selection and system design. Users should also thoroughly validate and assess whether the actual parameters and performance when installed in their respective systems or equipment meet their requirements or expectations. Additionally, users should exercise caution in verifying product compatibility issues, and TANI assumes no responsibility for the application of the product. TANI strives to provide accurate and up -to- date information to the best of our ability. However, due to technical, human, or other reasons, TANI cannot guarantee that the information provided in the product specification is entirely accurate and error-free. TANI shall not be held responsible for any losses or damages resulting from the use or reliance on any information in these product specifications.

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