

# **KY SPI Training Manual** - Program Edit



### **Program Edit Process**

• KY SPI 编程所需要Gerber和CAD两种file, 均通过ePM导入生成\*.pad,再通过 Ceditor设置测试参数后生成\*.mdb(即机器测试时所需要的job file)





### ePM Process

• ePM编辑流程





### ePM Menu

🔎 🖉 🖉 🔘 🚼 🛃 🦾 🍣 🛢 2 **⊘**G X ¢G 📹 🔠 🕂 🕐 🎊 🛪 🥓 🚰 📑 🚯 🚺 🗲 М X 第二排(从左至右) ٠ 第一排(从左至右,不计算阴影图案) ٠ Board Origin(设定PCB原点) 1. New(建立新程序) 1. Board Size(测量PCB尺寸) 2. Open(打开文件) 2. Teach Part Option(讲授零件选项) 3. Save(保存) 3. CPL Wizard(打开CAD文件) 4. Work Area(工作范围) 4. 5. Gerber(打开Gerber文件) Generate Mask Pin(建立pin) 5. Export CEditor(输出Gerber文件) 6. Fit CAD Centroid Gerber(适合CAD的质心和Gerber) 6. Move Component Center To Gerber 7. 7. Manual Component teach(手动建立元器件) Pattern(移动元器件到PAD的中心) Automatic Teach Part (自动建立元器件) 8. Zoom In(图案放大) 8. 9. Manual Add Footprint(手动增加足迹) Zoom Out(图案缩小) 9. Board Array(连板设定) Zoom Window(缩放窗口) 10. 10. Fit Window(适合窗口) Special Mark(基准点设定) 11. 11. 12. View Preference(查看参考设定) Aperture(孔径设定) 12. Measure Distance(测量距离) 13. Auto Teaching After Generate Mask Pin(在建立足迹以后 13. 14. Hide Top Component(隐藏顶面构成) 自动讲授) Hide Bottom Component(隐藏底面构成) 15. Delete(删除设定) 14. Hide Pin(隐藏pin脚) 16. Move(移动设定) 15. Fill Component(填充构成) 17. Rotate(角度改变) 16. 18. Fill Pin(填pin脚) Mirror(镜像改变) 17. 18. All Object Rotate -90(所有物体-90°) 19. All Object Rotate +90(所有物体+90°) 20. All Object Mirror By X(所有物体X镜像)

Confidential

21.

All Object Mirror By Y(所有物体Y镜像)



### 1. 点击 G 导入Gerber文件

🖾 Select Gerber Folder or Files 🛛 🗙	
	Cerber Import Setting
BOT.xis SA399W0903001.GBX SA399W0903001.GBX SA399W0903001.GBX	File Name     Film Type     Format     Applied Aperture       SA399W0903001,GBX     View File     Solder Mask     RS-274-X     Image: Constraint of the second
TOP.xis	O Check All O Release All
	OK Cancel
文件名: SA399W0903001.GBX	
文件口型: 所有文件 🗸	
Import 取) 即)	

注: File Name:为当前程序名称,必须点 √ Film Type: PCB的工作面. Format:导入的程序格式 Check All:导入程序时进行错误检查 Release All:放弃所有检查 Mirror Bottom Layer:程序导入时进行镜像翻转 Import:在原有的基础上导入程序 Append:多程序导入进行编辑 New&Import;全新的程序导入进行编辑

导入后可以看到软件下方的进度

D:#Job#D98#GBX&CAD#SA399W0903001,GBX

- 97



- 2. 设定PCB尺寸
  - **C** 
    - 按住鼠标左键选取PCB板的尺寸后确定"OK"

0	Set	Board Size		Σ
	Size			
		Width(mm):	0.0	
		Height(mm) :	0.0	
		🗹 Calculat	e Gerber	
_				
	ОK	Apply C	lose Advanced >>	



🔯 Set	Board	Size					×
Size							
	Width(n	nm) :	[	106.54	15		
	Height(r	nm):	[	104.90	)5		
	[	🖌 Cald	culate	Gerbe	er		
OK	Ар	ply	Cl	ose		Advanced >	·>





3. 设定Work Area (Any Shape). ,可以选择规则的矩形(Rectangle)或自己选定任意形状 区域选定之后"OK"

🕲 Set Work Area	×
Section Area	7
Work Area     O Excluded Work Area	
Туре	
<ul> <li>Rectangle</li> <li>Any Shape</li> </ul>	
Color	
Work Area :	
Excluded Area :	
OK Cancel	





NOTE: Any Shape时选定好区域后点击鼠标右键后"Apply"或"Done"



# 4. 点击 🚺 后生成General Mask Pin





### ,选择Gerber对应的CAD档 并编辑

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CPL Viz	ard Step1 - Open File		¢	🕄 CPL
□看: □ BOT.xts □ SA3999 □ SA3999 □ TOP.xts	] GBX&CAD 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Line Feed Replacement Not Use		BT1 BT2 C10 C13 C14 C15 C16 C17 Fc
文件名:	BOT.xls			Char
文件口型:	所有文件	•		:
		Open 取消		

CPL 😳	Step2 - For	at Setting										×
BT1	998-1912	SMT-PAD-1P2X1P8	-NSP YES	90	0.95	-12.61	(1)					-
BT2	998-1912	SMT-PAD-1P2X1P8	-NSP YES	90	0.95	-14.31						-
C10	13880568	CAP-0603-HP95	YES	90	7.168	-4.939						
C13	13280247	CAP-0201 YES	180	12.35	-2.136							
C14	13280247	CAP-0201 YES	180	12.35	-1.556							
C15	13880568	CAP-U6U3-HP95	YES	90	10.906	-5.047						
C16	13650566	CAP-0603-HP95	1E8 270	90 10 200	9.00	-5.05						
	13200121	CAR-0201 1E3	270	10.335	-0.05							-
		Format Setting		1	Define App	lied Line			Spe	ecific Char, —		
	Format Type : Us	er Defined	-	First	Char, of Start L	ine : Em	pty 💌	·	Top Side :	NO		
Cha	ar, Separator : Tal	)	-	Ignor	ed Line from S	tart : 0		Bo	ottorn Side :	YES		
	Setting Unit : inc	h 🖵 (X): 🗆 Co	unter Angle : 🗌	First Char	r, of Ignored Lir	nes : Em	pty 💌		SMT :			-11
	Point Option :	X V D	Angle 0	First	Char. of Last L	ine : Em	ntv 🔻		lla atlana t		ti-t Ni	
	· ····· · · ····		ringio o				P-9	Allow Dup	lication :	Juname 🔄 F	ootprint ivame	e
										👻 All	- Fine	d
No.	Uname	Part	Footprint	Value	e X	Y	Rotation	Side	SMT	Pins	Part ID	
C/S	1	3	0	0	6	7	5	0	0	0		
1(1)	BT1	SMT-PAD-1P2X1			0,95	-12,61	90				(2)	
2(2)	BT2	SMT-PAD-1P2X1			0, 95	-14,31	90					
3(3)	C10	CAP-0603-HP95			7,168	-4,939	90					
4(4)	C13	CAP-0201			12,35	-2,136	180					1
5(5)	C14	CAP-0201			12,35	-1,556	180					
6(6)	C15	CAP-0603-HP95			10,906	-5,047	90					
7(7)	C16	CAP-0603-HP95			9,65	-5, 05	90					
8(8)	C17	CAP-0201			10, 399	-0,85	270					
9(9)	C18	CAP-0201			10,929	-0, 85	270					
Total '	111 Components a	re imported correctly.						ł				
		View	File Apply	/ to Table	Save Set	ting	Load Settin					
			re Item Error	Newly Imp	ort An	nendina l	mport	1.1.1			0	
				nomy mp		ornaling i		+ 270				_
								1				

• 确保 ① 和 ② 所列5项 (Unname,Part,X,Y,Rotati on)一一对应,若不对应, 修改C/S后面对应的数值 (不需要的都改为0).点击 "Apply to Table"后再次 确认.最后点击 "Appending Import"



# 6. 点击 X 将CAD移至对应Gerber中心。按住鼠标左键全选一零件的Mask Pin, 输入该零件的Component Name, 点击 "Apply"

🌑 Match Coords Gerber & D 🗙	
Target Component	
Layer Name : MP_SolderPasteTop	
Component Name : U1	
XY(mm): 13.984 93.442	
Target Gerber Pattern	
XY(mm): 13.984 93.442	
Apply Close	8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9



Note: 若导入时CAD方位与Gerber不对应,我们需要利用Rotation A 或 Mirror 计 功能来编辑此CAD, ٠



C Rotation 🗙			C Lirror	
Select  Select Target All  All by Selected Group  Component Part Footprint  Gerber Object Gerber Aperture Work Area Board Outline  Rotation Angle (Degree) : 90 Counter Angle :  Origin (mm)  Board Origin Counter Angle :  Origin (mm)  Board Origin Center by Selected each objects Center by All Selection  Method Absolute Increment  Rotation Close	1.	勾上Component后点 击"Select Target All" 选择旋转的角度和原 点	Select Select Target All All by Selected Group Component Part Footprint Gerber Object Gerber Aperture Nork Area Board Outline Origin Axis : XAxis YAxis Origin (mm) Board Origin Center by All Selection Mirror Close	1.

- 勾上Component后点 击 "Select Target All"
- 选择镜像的参考轴和 原点



7. 定义每个零件的脚位 🛑 (手动添加)和 🛑 (自动添加2 pin)

🖾 Add Footprint





A. 选择CAD和对应的Mask Pin, 点击"Add Footprint"



B. 在所有多脚位的零件定义完之后,可以使用"Auto Add Footprint" 定义剩下的所有2 Pin的零件,输入所有Pad的尺寸范围后"Execution"

🐼 Automatic Add Footprint(2Pin)						
Pad Option						
Max Length(mm) : 10 Min Length(mm) : 0.1						
Execution OK Cancel						

Selected Component Information Uname : Rotation(Degree) : XY Coords,(mm) : Part Name : Footprint Name : Footprint Grouping Method By Footprint O By Shape Automatic Fit To Mask Pin Show Message Auto Detect Mouse Up Event Add Footprint Close



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### ePM-Step 7

若有零件定义错误或没有对应的CAD,可以重新编辑后自定义



对于(A),点击 给该零件定义Footprint; 框选该零件,输入Uname(B); 点击Add Comp.(C)

🥶 Generate Component 🏾	anually 🔀						
Uname : J6	-						
Rotation(Degree) : 0,0	▼ Pin : 20						
XY Coords,(mm) ÷ 9.073	80.312						
Component Type : 🔾 Chij	p 💿 Other						
Footprint Name : SOIC_20	-						
Part Name: PART1	-						
Value :	-						
🔲 Recognize Only Same Rota	ited Shapes						
🗖 Different Component, Unam	e Group Direction						
Generate Pin Add All Components							
Add & Move Next	Add Comp,						
Delete Edit							
Close	]						



8. PCB连板设定。点击 🛄, 选择"Manual Add", 在红色区域输入相应的信息

🛱 Board Array 🔀	🕲 Block Generation 🛛 🗙	Teasure Distance
	Start Point Origin : Zero Origin X Distance (mm) : 0.0	Clicked Point     Gerber Object     Gerber Object Start Point
	Y Number :     2       Y Distance (mm) :     15.72       Y Distance (mm) :     0.0       Rotation :     0	OK Apply Cancel
(-18,796, -24,702) mm     ↓     ↓     ↓     Find       Variable     Coords.     Coords.     Rotation Origin     Rotation     Skip     Work Area Order       Name     X (mm)     Y (mm)     Rotation Origin     Rotation     Skip     Order	OK Cancel	
Panel Width : 106.545       Panel Height : 104.905       Work Area Order : 0        Image: One Board         Reorder Name       Manual Add       Auto Add       Delete       Apply       OK       Close	在选择X,Y Distance时,一般选 择Gerber Center,手动量取对 应拼板的距离后"OK"	

**9 9** 

-



🙄 Board Array								×
		Piodei - Piodei	T <b>Pi</b> ock3 <b>I</b> ¶iock3 <b>I</b>	lo dkō	lockô			
		Plock7 T Plock8	ilibak9 ilibak10 ili	bok11	odc12			
		(109,418, -4,963)	mm 🔗	P	۶			
	1	7	(		-	All	▼ Find	t
Name	Coords. X (mm)	Coords. Y (mm)	Rotation Origin		Rotation	Skip	Work Area Order	
Block1	0.0	0.0	Components Center	-	0	-	0	-
Block2	15.72	0.0	Components Center		0	-	0	=
Block3	31.44	0.0	Components Center	-	0	-	0	
Block4	47.16	0.0	Components Center	-	0	-	0	
Block5	62.88	0.0	Components Center	-	0		0	
Block6	78.6	0.0	Components Center	-	0		0	-
Panel Width	: 106.545	Panel Height	: 104.905 Worl	k Area Ord	er: 0		ne Board	
Reorder	Name M	anual Add	Auto Add Dele	te A	pply	OK	Close	

### 连板做好后如图所示.



• 若有不规则的连板(如有180°的旋转的连板),则需再次定义一次不规则的连板设定



C	Block Generation
E:	Start Point
	Origin : Zero Origin 🗨
	X Distance (mm) : 0.0 ↔
	Y Distance (mm) : 0.0 ↔
Γ	Array
	X Number : 6
	Y Number : 2
2	X Distance (mm) : 15.72
	Y Distance (mm) : -51.633 ↔
	3. Rotation : 180 💌
	Rotation Origin : Components Center 🔽
_	OK Cancel

- 设置好X,Y方向连板 的数量;
- 量测好X,Y方向的距 离;
- 3. 选择旋转的角度;
- 若有需要,可以选择 旋转的原点 (NOTE::所有步骤 原点必须一样)





🕲 Block Generati	on	Þ
Start Point		
5. Origin :	Block1	•
X Distance (mm) :	1.068	La
6. Y Distance (mm) :	-17.846	l+-J
Array		
× Number :	6	
Y Number :	2	
X Distance (mm) :	15.72	
V Distance (mm) :	-51.633	┝┥
Potetion (	190	
Retetion Origin :	Componente Contor	-
	Components Center	
ОК	Cancel	









通过"Recorder Name"功能可以重新定义各连板的Array Number





所有步骤完成后点击"**OK**"后,连 板制作完成。可以对比生成的连板 与原**Gerber**是否一致



9. 生成Fiducial Mark, 点击 4





🛱 Generate Special Iark 🛛 🗙	st						E	×
Property	Туре	Region	Shape	Width (mm)	Height (mm)	Coords. X(mm)	▼ Find Coords. Y(mm)	
Uname : FIDU5	Fiducial	Panel	Circle	1	1	2.25	96.904	
Mount Side : FBONT	Fiducial	Panel	Circle	1	1	104.295	8.001	
	Fiducial	Panel	Circle	1	1	2.25	8.001	-
Mark Type Fiducial O Skip		i unor		1		104.233	30.304	
Panel     O Board	Generate	Edit	Delete F	iducial	Save As	]		
Feature (mm)			Close					
▲ Shape : Circle 🗨								
Width: 1.0								
Height: 1.0	Α.	选	择Ma	rk的	形状;			
Rotation : 0.0	B.	用	鼠标	<b>拒</b> 选习	対応自	句Mar	'k	
Location (mm) X : 104.295 Y : 96.904		后	, 点 i	击" <b>(</b>	Sene	ratior	า"	
B Generation Close								

如左图示,四个Fiducial Mark已生成



10.	保存ePM程式	3	生成*.epm文件&导出到Ceditor	。 全国生成*.pa	ad文件
-----	---------	---	----------------------	---------------	------

Informatio

Save

i

口看: 🚅	i Kyspi-8L353 🗸 🗸	6668	<u></u>
Cookie:	3		
Deskto Corverito	0		
My Doc	uments		
📑 Start M	enu		
📑 Start M	enu		
📑 Start M	enu		
CT Start M	SA399W0903001.epm		
Start M 文件名: 文件口型:	SA399W0903001.epm Easy Part Mounter Design Files (+,epm)		

== 1099P3 == 201010	3 BMC1010274-TT.pad
EPM	
GRR	
image	400002
Vision	1099P1 20101028
2件名:	SA399VV0903001.pad
文件口型:	CEditor (*,pad)
	Export 取消

X



### **Ceditor Process**





## Ceditor

• 从ePM导出\*.pad文件会直接导入Ceditor,选择对应用户&密码进入Ceditor.





1. PCB Setting

PCB Setting			×	
-PCB Informatio	n		1	
PCB <u>N</u> ame A	5A399W0903001		4	A. 依次输入PCB Name (程式名)
Size <u>X</u> Size <u>Y</u>	104.905	Wieth		Size X,Y(PCB 尺寸) 钢板厚度
Mask Thickness	120 [	[um] Length		
PCB Weight	1 0	[9]		
<u>C</u> omment				
B Array No of Array	1 Fiducial	Count 4	E	3. 输入Array & Fiducial 的数量
🗖 Auto update Siz	e Lib. Ar	pply Cancel		



### 2. Fiducial Mark 的定义



如上图下拉菜单选择"Fiducial" 定义对角的两个Fiducial Mark(黄色) 不需要的Fiducial Mark将其Unused掉(灰色)





# 3. 恢复 🕞 · 至红色的PAD, 框选所需测试的PAD后, 点击左边的"Edit", 设置 Tolerance





## 体积的定义

- 用true 3D profilometry方式,Koh Young可测量PCB Solder paste的真正的体积,而不像大概或简化的近似值
- Koh Young计算出每个Solder paste的像素高度,合算每像素的单位体积:





体积100%的定义







\* Stencil mask孔的大小

面积 = X X Y = 50 um X 50 um = 2500 um2

\* 基准体积100%

体积 = 面积 X Stencil Mask厚度 = X x Y x T

= 50 um x 50 um x 120um = 300000um3

\* 检测的体积结果

Ex) 如果测量的体积是280000um3,

(测量的体积 / 基准体积) x 100 = (280000 / 300000) x 100 = 93.33 % 如果Mask厚度不同,体积%值将会改变

- 体积 = 面积 x Stencil Mask厚度 = X x Y x T
  - = 50 um x 50 um x 100um = 250000um3

250000um3是体积100%

如果测量的体积是280000um3, (280000 / 250000) x 100 = 112 %



### 不良错误类型

- 体积错误(多锡/少锡)
- 偏位(Offset)错误(在X & Y轴上)
- 连桥错误
- 高度错误
- 形状错误
- 面积错误

错误和警告表示用户输入值超过每个不良错误类型的容 许范围



不良错误列子













体积多锡/少锡错误意味着基于基准volume 100%,pad上的检测volume量过于/低于容许 范围设置值(%)。

警告率是错误percentage的警告范围,它通知用 户pad以后可能会变为错误。

Ex) 多锡错误 = 160 %

多锡警告率 = 10%

多锡警告率是从150%到160%



Change	PAD Insp	rection	Condition	
				Calculate
✓ ¥olume	t Unit			
Excessive	Error			160 %
Insufficient	Error			70 %
Warning D	able	1		10 *
waning is	ado			1 10 4
Positio	n <u>Unit</u>			-
A Position	Enor			/5%
Y Position	Error			75 %
Warning R	atio 7			10 %
✓ Bridge	[um]		Dural Manda	
Height 25	Distance	00 -	Dual Mode	
noight [ 23	uscance 3		Head Rotation	ı
Height	[um] Mil			
. Trangenet				
Stencil 10	0   L. H.	50 U. H	250 War	ning 20
Stencil 10	0   L. H.	50 U. H	. 250 War	ning 20
Stencil 10		<mark>50 и.н</mark> rea Г 9	. 250 Wan	ning 20
Stencil 10 Shape Bal(um) 18	0   L. H.	50 U.H	. 250 Warn imear 4X(%) 200	ning 20
Stencil 10 Shape Bal(um) 18	0   L. H. Min(%)	50 U.H rea [ 5 50 M/	. 250 Warn	ning 20 Panel
Stencil 10 Shape Bal(um) 18 Copland	0   L. H. Min(%)	50 U. н rea Г s Г 50 м/	. 250 Warn	Panel
Stencil 10 Shape Bal(um) 18 Copland Height	0   L. H. Min(%) srity Erro t	50 U.H rea [ 5 50 M/ pr 10 um	. 250 Warn mear AX(%) 200 Warning 2 um	Panel No. 1
Stencil 10 Shape Bal(um) 18 Copland Height Offset	0 L.H. Min(%) arity Erro t	50 U.H rea [ 5 50 M/ 50 m/ 10 um	250         Warning           Warning         2           2         um	Panel No. 1
Stencil 10 Shape Bal(um) 18 Copland Height Offset Tor	0   L. H. Min(%) arity Erro t t p Area	50 U. H rea [ 5 50 M/ 50 m/ 10 um 10 um 30 %	Warning 2 um 2 um 2 um	Panel No. 1
Stencil 10 Shape Bal(um) 18 Copland Height Offset Toj Change Ont	0 L.H. Min(%) arity Erro t t p Area	50 U. H rea 50 M/ 50 M/ 0 10 um 10 um 30 %	Warning Warning 2 um 2 um	Panel No. 1
Stencil 10 Stencil 10 Shape Bal(um) 18 Copland Height Offset Top Change Opt	0 L. H. Min(%) arity Erro t p Area	50 U. H rea 50 M/ 50 M/ 0 um 10 um 30 %	Warning Warning 2 um 2 um	Panel No. 1
Stencil 10 Stencil 10 Shape Bal(um) 18 Copland Height Offset Top Change Opt • One Pad	0 L.H. Min(%) arity Erro t Erro t From Erro t Erro t Height	50 U. H rea	x(%) 200 Warning 2 um 2 um 2 um	Panel No. 1
Stencil 10 Stencil 10 Shape Bal(um) 18 Copland Heighl Offsel Top Change Opt One Pad Selected Pad	0 L.H. Min(%) arity Erro t Erro t P Area	50 U. H rea 50 M/ 50 M/ 0 r 10 um 10 um 30 %	Marning Warning 2 um 2 um 2 um 2 copian	Panel No. 1
Stencil 10 Stencil 10 Shape Bal(um) 18 Copland Height Offsel Top Change Opt One Pad Selected Pads All Pads Same Pads	0 L.H. Min(%) arity Erro t t p Area	50 U. H rea 50 M/ 50 M/ 0 r 10 um 10 um 30 %	x(%) 200 Warning 2 um 2 um 2 um 2 um	Panel No. 1 Default
Stencil 10 Stencil 10 Shape Bal(um) 18 Copland Height Goffsel Top Change Opt One Pad Selected Pads Same Pads	0 L.H. Min(%) arrity Erro t t t Volume Height A.85. TD Name StepZoon	50 U. H rea 50 M/ 50 M/ 50 m/ 10 um 10 um 30 % Positi Positi Positi Positi Positi Positi Positi Dual	x(%) 200 Warning 2 um 2 um 2 um	Panel No. 1 Default
Stencil 10 Stencil 10 Shape Bal(um) 18 Copland F Gopland F Heighl F Offsel Top Change Opt One Pad Selected Pads C All Pads Same Pads Component	0 L.H. Min(%) arity Erro t t P Area Volume Height A.85, I D Name	50 U. H rea 50 M/ 50 M/ 50 m/ 10 um 10 um 30 %	x(%) 200 Warning 2 um 2 um 2 um	Panel No. 1 Default
Stencil 10 Stencil 10 Shape Bal(um) 18 Copland F Gopland F Heighl F Offsel Top Change Opt One Pad Cone Pad Call Pads Same Pads Component Name	0 L. H. Min(%) arity Erro t t P Area Min(%) arity Erro t t t D Area D Name StepZoon	50 U. H rea 50 M/ 50 M/ 0 r 10 um 10 um 30 % Positi F H.R. Stenc Dual Pin Nu	Marning Warning 2 um 2 um 2 um 2 um 1 □ Panel mber	Panel No. 1 Default
Stencil 10 Stencil 10 Shape Bal(um) 18 Copland F Copland F Gopland F G Gopland F	0 L. H. Min(%) arity Erro t t P Area P Area M Volume Height Height A.85, I D Name StepZoon ID Part SOIC8_02A	50 U. H rea 50 M/ 50	Marning Warning 2 um 2 um 2 um 2 um 1 □ Panel mber Edit LIB	Panel No. 1 Default



不良类型 – 偏位错误

偏位错误意味着基于pad大小, solder paste deposit中心和pad的中心之间的offset超过容许范围设置值(%)。

Ex) Pad大小 X = 1 mm

X偏位错误 = 75 %





change	FAD III	spec	tion	Cond	ition	
					F	Calculate
V Yolume		Init				
Excessive	Effor .					160 %
Insufficient	Error					70 %
Warning R	atio 📊					10 %
Positio	n U	Init				
× Position	Error 🗔					75 %
Y Position	Error 🗔					75 %
Warning R	atio 👖					10 %
Height	[um]					
Stencil 10 Shape Bal(um) 18 Copland Heigh Coffse To	0   L. H.   0   Min( srity   t   t   t   t	Mil         50           Area         %)         5           %)         5         5           Error         10         10           30         30         30	U.H. Fs 50 MA um um	250 mear (%) Warning 2 2	0 Warr 200	Panel No. 1
Stenci 10 Stenci 10 Bal(um) 18 Copland Heigh Offse To Change Opt	0   L. H.   0   Min( arity   t   p Area	Mil         50           Area         %)           %)         5           Error         10           10         30	U. H. 50 MA um um	250 mear (%) Warning 2 2 2	7 Warr 200	Panel No. 1
Stencil 10 Stencil 10 Bal(um) 18 Copland Copland Heigh Offse To Change Opt One Pad	0   L. H.   Min( arity   t.   p Area   Volum	Mil 50 Area %) ₹ Error 10 10 30	U.H. 50 MA um wm %	250 mear X(%) Warning 2 2 2 2	200 2 um 2 um	Panel No. 1
Stencil 10 Stencil 10 Shape Bal(um) 18 Gopland Gopland Gopland To Change Opt One Pad Selected Pad	0 L.H. Min( arity t F t F t Heigt	Mill         50           Area         80           %)         5           Error         10           10         30           me         10	U.H. 50 MA um wm %	250 mear (%) \ Warning 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	200 um um	Panel No. 1
Stencil 10 Stencil 10 Shape Bal(um) 18 Copland Heigh Offse To Change Opl One Pad Selected Pad All Pads	0   L. H.   Min( strity   t   p Area   Heigt A.85 D N.	Mill         50           Area         80         5           %)         5         5           10         10         30           10         30         5	U.H. 50 MA um um %	Varning	200 200 um um idge oplan	Panel No. 1
Stencil 10 Stencil 10 Bal(um) 18 Copland Copland Field Field Copland	0   L. H. Min( arity t   t   t   t   t   t   t   t   t   t	Mill         50           Area         80           %)         5           Error         10           10         30           ame         10           some         10           imme         10           imme         10	U. H. 50 MA um um % Positic Shape H.R. Stend Dual	ZSC mear X(%)     Varning     2     2     2     C	200 2 um 2 um 1 dge oplan anel	Panel No. 1 Default
Stencil 10 Stencil 10 Bal(um) 18 Copland F Gopland F Heigh F Offse To Change Opl One Pad Selected Pads Camponent	0   L. H.   0   L. H.   Min( arity   t   t   P Area   Volur Heigt Heigt ID N.   Step2	Mill         50           Area         80           %)         3           10         10           30         30           ne         10           it         10           it         10           it         10           it         10	U. H. So MA um um % Positic Shape H.R. Stenci Dual	250     mear     X(%)     Varning     2     2     2     2     1     C	200 2 um 1 um 1 dge 1 pplan	Panel No. 1 Default
Stencil 10 Stencil 10 Bal(um) 18 Copland F Gopland F Heigh F Offse To Change Opt One Pad Selected Pad Selected Pads Same Pads Component Name	0 L.H. Min( arity t F t F t F t F t F t F t F t F t F t F	Mill         50           Area         80           %)         5           Error         10           10         30           ne         7           imme         7           imme         7           imme         7	U. H. So MA um um % Positic Shape H.R. Stend Dual	Varning 22 22 22 22 20 20 20 20 20 20 20 20 20	200 2 um 1 um 1 dge pplan anel	Panel No. 1 Default



### 不良类型 – 连桥错误





### 不良类型 – 高度错误





不良类型 – 形状错误

Calculate

160 %

70 %

10 %

75 %

75 %

10 %

20

Panel

No. 1

Default

OK

Cancel

Warning

Edit LIB

2 um

2 um



<侧面>



不良类型 – 面积错误





### 4. 给有不同检测要求的Pads分组,设定其特定的检测Tolerance

Change PAD Inspection Condition  Very Yolume Unit Excessive Enor Insufficient Enor Warning Ratio Very Position Enor Very Posit	ID :63 Comp ID:U1_A1 (BGA-22×15-232-P5- Panel :1 Type :RECT × Pos :87.084 Y Pos :7.963 Size× :0.274 SizeY :0.274 Area :100%	<ol> <li>选择特定的Pads(例如右 图所以的U1),点击"Edit", 设置其检测参数;</li> <li>在"Group"下方输入该组 的名称(如U1),点 击"ADD".</li> </ol>
Height         80         Distance         300         Head Rotation           Height         80         Distance         300         Head Rotation           Stenci         120         L.H.         50         U.H.         250           Sape         Sape         Area         Min(%)         50         MAX(%)         200           Coplanarity         Error         Warning         No.         1           Value         20         4         No.         1           Offset         10         um         2         um           Top Area         50         %	Volume :True E.W/E :150/170 I.W/E :70/ 50 Offset :True X W:0.49(179%) X E:0.5(182%) Y W:1.00(365%) Y E:0.5(182%) Bridge :True 80/300 Shape :True 50/180/200	<b>Remark:</b> 可以根据实际需要设置 多个Group
Change Opt. O one Pad Steined Pad Al Pad Same Pad D Name Sand D Name Sand D Name Sand D Name D Name Sand D Name D N	Cop. : False Dual :True Head R.:False S/L/U/W : 120/50/250/20 Head R.:False 1 Edit Group U1 ADD U1 U1 Exec Delete	



### 5. 保存Job file

👪 Edit Component	ID						
<u>F</u> ile <u>T</u> ools							
P 🖉 🦉	≥ <u>_</u> <u>_</u>	I 🖓 - 🗌	1 Pad Search	<u>U</u> nselect All	Same Parts	▼ Select	Unused
Pad							
ID :17 Comp ID:J6_1	Select Job F	ile					? 🗙
Panel :1 Type :RECT X Pos :86,298	保存在( <u>t</u> ):	Dop 105		•	+ 🗈 💣	IIII <b>*</b>	
Y POS :22.648 SizeX :0.8 SizeY :0.46		©⊇QC ॼ111.mdb					
Area :100% 0.3680	我最近的文档						
Volume :True E.W/E :150/170	桌面						
I.W/E :70/ 50 Offset :True X W:0.49(61%)							
X E:0.5(63%) Y W:1.00(217%)	我的文档						
Bridge :True 80/300							
Shape :True 50/180/200	我的电脑						
Dual :False Head R.:False	<u></u>						
S/L/U/W : 120/50/250/20	网上邻居						
Head R.:False		文件名 (M):	SA399W0903001		-	保存	Ŧ (S)
Edit		保存类型 ( <u>t</u> ):	*. mdb		•	取	消
Group							
J6 ADD							//