

致尊敬的顾客

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瑞萨电子公司网址：<http://www.renesas.com>

2010年4月1日
瑞萨电子公司

【发行】瑞萨电子公司（<http://www.renesas.com>）

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二极管

标准卷带规格

1. 标准卷带规格的特点

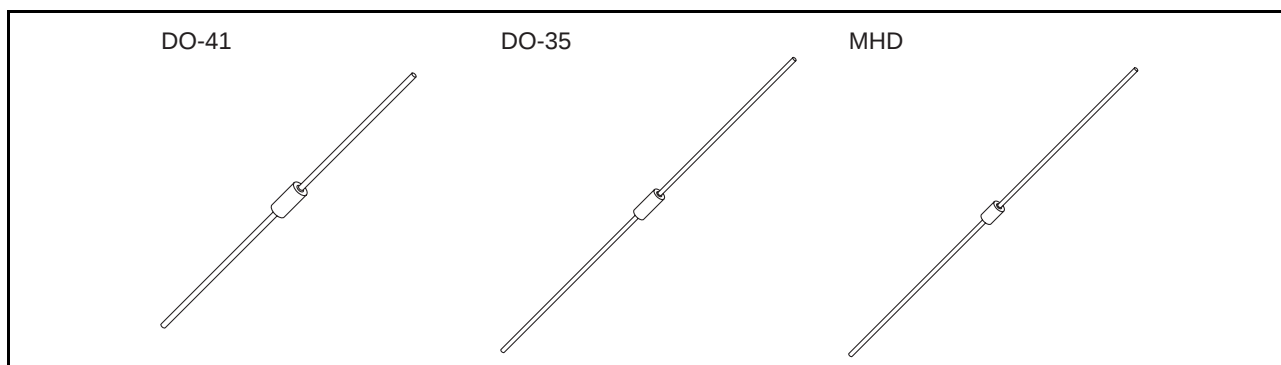
为了能够对应各设备制造商的各种自动安装机器，硅晶体二极管的卷带规格大致分为以下3种：

- (1) 横向卷带
可通过各种自动安装机器进行自动组装。特别适用于连续的安装。其规格满足EIAJ标准。可以在MHD封装的二极管上以5mm的节距进行插入操作。
- (2) 径向卷带
可对应PANASERT插件机和AVISERT插件机中的任意一种。
- (3) 压纹卷带
可以对应任何自动安装机器。

2. 卷带规格

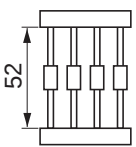
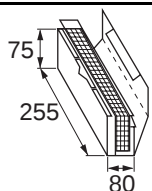
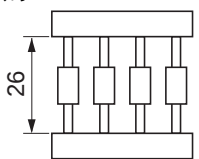
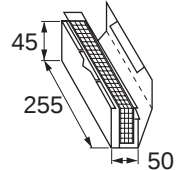
2.1 横向卷带

(1) 适用封装



(2) 卷带规格

单位：mm

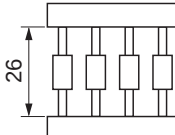
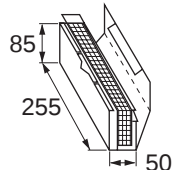
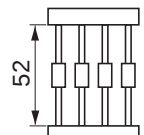
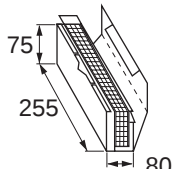
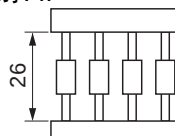
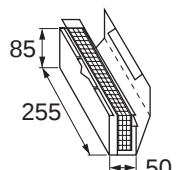
卷带符号		封装	形状尺寸	外观	数量
折叠方式	TA *2	DO-35 MHD	类别：I 		5000pcs
	TD	DO-35 MHD	类别：II 		2500pcs

【注】 1. 详细的形状尺寸请参照(3)的卷带尺寸。

2. 为推荐的卷带规格。

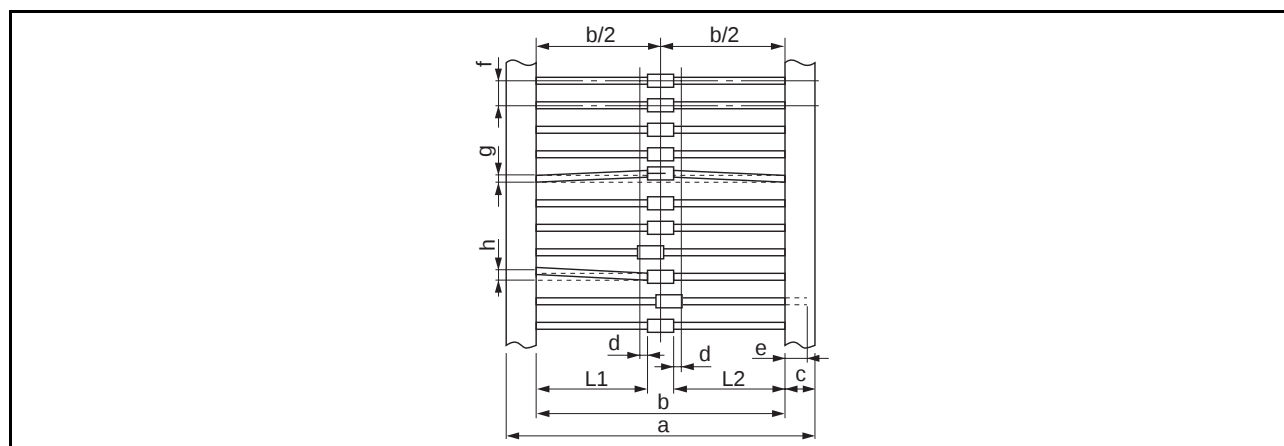
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单位: mm

卷带符号		封装	形状尺寸	外观	数量
折叠方式	TE *2	DO-35 MHD	类别: III...TE 		5000pcs
	TK *2	DO-41	类别: I 		2500pcs
	TN *2	DO-41	类别: II 		2500pcs

【注】 1. 详细的形状尺寸请参照(3)的卷带尺寸。
2. 为推荐的卷带包装规格。

(3) 卷带尺寸

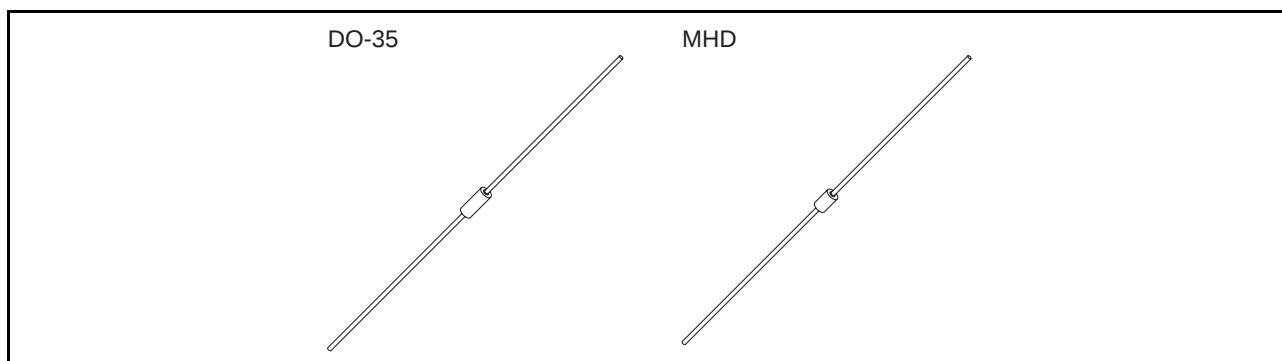


单位: mm

符号	卷带尺寸类别		
	I	II	III
a	64±1.5	38±1.5	38+1.5/-1.0
b	52.4±1.2	26+1.2/-0	26+0.5/-0
c	6±0.5	←	6±0.4
d	±0.5	±0.5	±0.2
e	3.2min	←	←
f	5.0±0.38	5.0±0.38	5.0±0.3
g	±1.0	1.0max	±0.5
h	1.0max	←	←
L1-L2	1.0max	1.0max	0.4max
JEDEC CODE	TA21(R)	TA11(R)	—

2.2 径向卷带

(1) 适用封装



(2) 卷带规格

单位: mm

卷带符号		封装	形状尺寸	外观	数量
折叠方式	RE *2	DO-35			4000pcs
	REB				
	RX *2	MHD			4000pcs 2500pcs
	RY				

【注】 1. 关于尺寸请以EIAJ RC-1008A的径向卷带形状C为标准。
2. 为推荐的卷带规格。

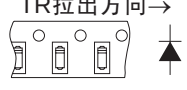
(3) 玻璃封装卷带符号

卷带宽度	卷带符号	
	以往	新的
52mm	TA/TK	7
26mm	TE	8
	TD/TN	9

卷带宽度	卷带符号	
	以往	新的
径向	RY	5
	RE/RX	6

(4) 卷带尺寸

径向卷带根据成形形状、阴极位置、包装方法及拉出方向，规定了下述卷带符号。

包装方法	卷带符号 TR拉出方向→ 	阴极位置		拉出方向	
		上	下	右	左
折叠方式	RE/REB	○		○	
	RX	从包装箱印有F的一侧拉出 玻璃本体时， 由阴极出来的为RX 由阳极出来的为RY			
	RY				

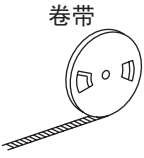
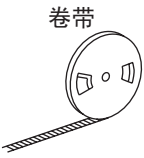
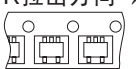
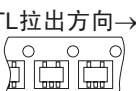
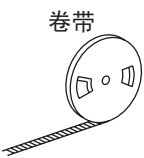
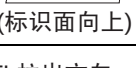
2.3 压纹卷带

2.3.1 8mm卷带

(1) 适用封装

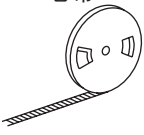
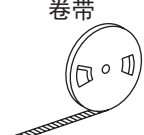
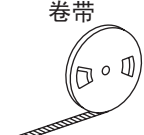
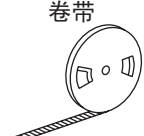
LLD	MPAK-5	MPAK	CMPAK	CMPAK-4	VSON-5	MFPAK	MFP12	
								
SRP	URP	TURP	UFP	SFP	EFP	TEFP	MP8	MP6
								

(2) 卷带规格

封装	包装形态	包装单位	包装规格代码	备注
LLD		2500 (个/卷)	TR *2 (Taping to Right)	TR拉出方向→ 
			TL (Taping to Left)	TL拉出方向→ 
MPAK-5 VSON-5		3000 *3 (个/卷)	TR *2 (Taping to Right)	TR拉出方向→ 
			TL (Taping to Left)	TL拉出方向→ 
MPAK CMPAK		3000 *3 (个/卷)	TR *2 (Taping to Right)	TR拉出方向→  (标识面向上)
			TL (Taping to Left)	TL拉出方向→  (标识面向上)

- 【注】 1. 器件脱落 ≤ 0.2%/卷，连续器件脱落 = 0/卷
2. 为推荐的卷带包装规格。
3. 详细的包装规格代码请参照(5)的卷带符号。

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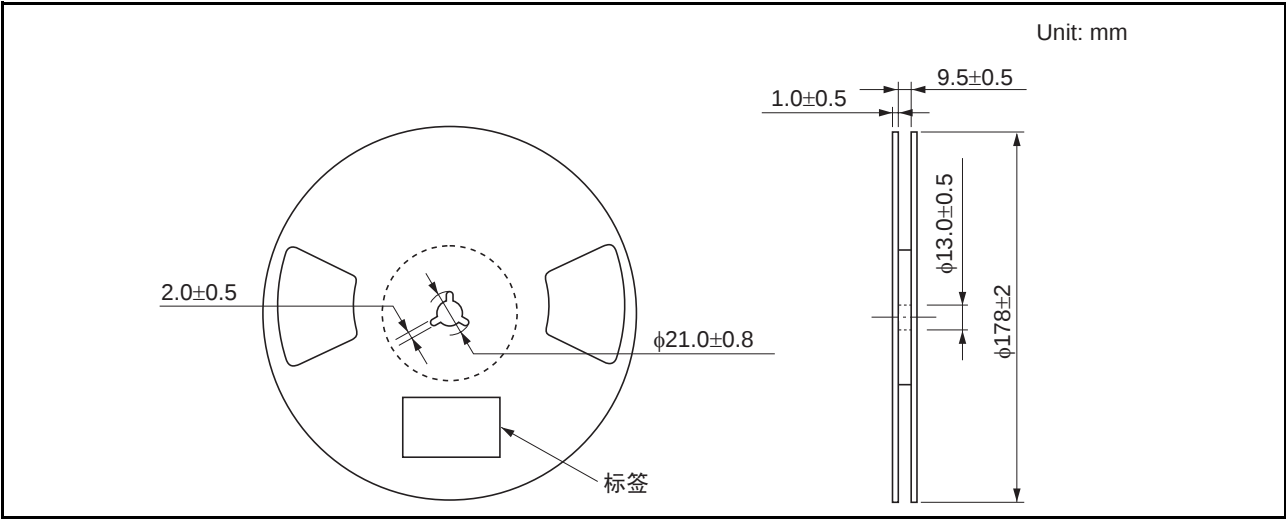
封装	包装形态	包装单位	包装规格代码	备注
MFPK	卷带 	9000 *3 (个/卷)	TR *2 (Taping to Right)	TR拉出方向→  (标识面向上)
CMPAK-4	卷带 	3000 *3 (个/卷)	TR *2 (Taping to Right)	TR拉出方向→  (标识面向上)
			TL (Taping to Left)	TL拉出方向→  (标识面向上)
SRP URP	卷带 	3000 *3 (个/卷)	TR *2 (Taping to Right)	TR拉出方向→  ▲
UFP (TURP)	卷带 	4000 (个/卷)	TR *2 (Taping to Right)	TR拉出方向→  ▲
		8000 (个/卷)	KR *2	KR拉出方向→  ▲
SFP	卷带 	8000 (个/卷)	KR *2	KR拉出方向→  ▲
EFP TEFP MP8 MP6	卷带 	10000 (个/卷)	KR *2	KR拉出方向→  ▲

- 【注】 1. 器件脱落≤0.2%/卷，连续器件脱落=0/卷
2. 为推荐的卷带包装规格。
3. 详细的包装规格代码，请参照(5)的卷带符号。

(3) 树脂封装卷带符号

卷带宽度	卷带符号	
	以往	新的
8mm	TR	P
	TL	H
	KR	R

(4) 卷带尺寸



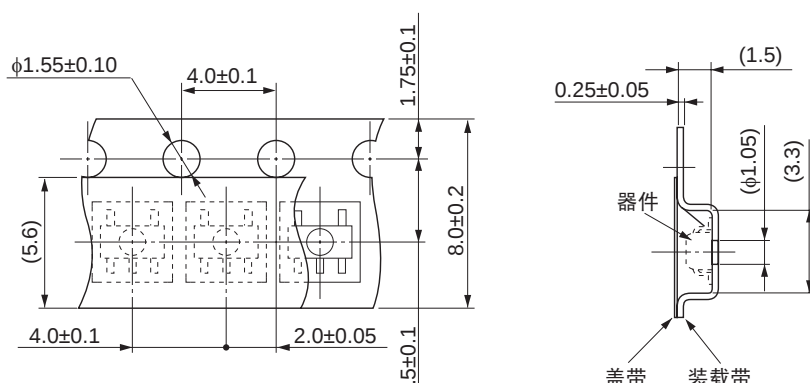
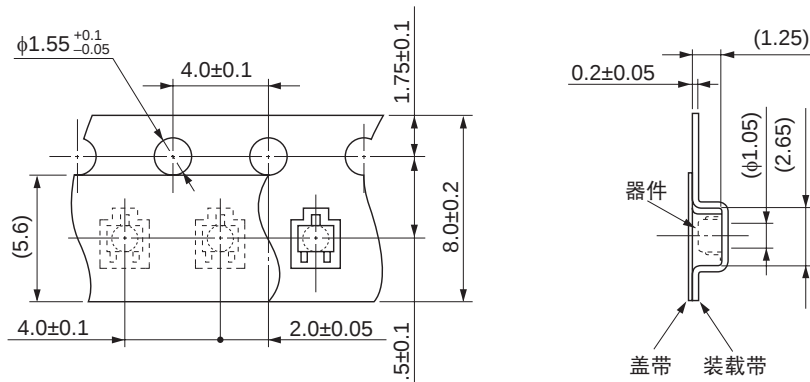
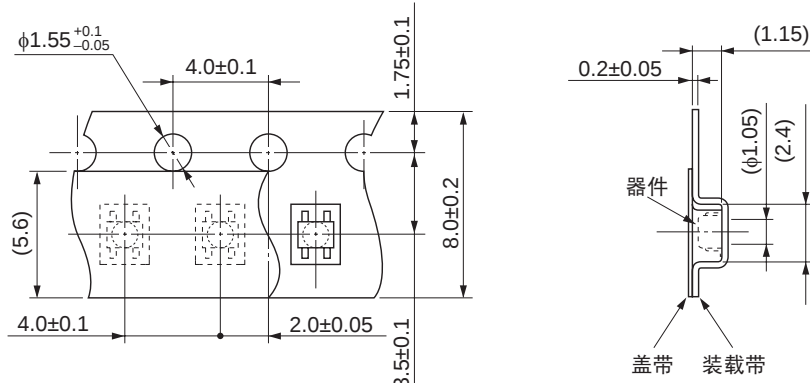
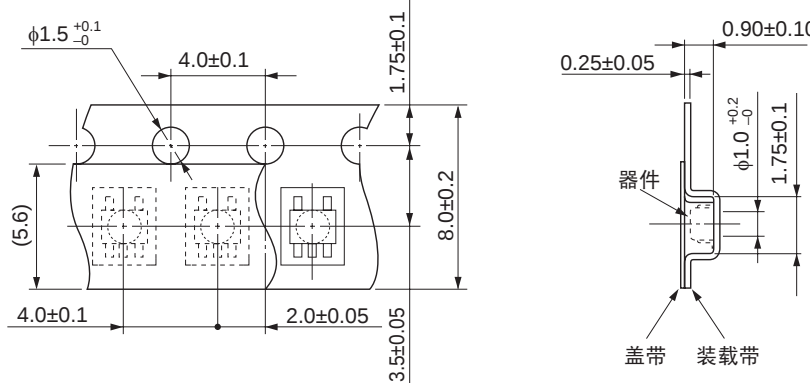
(5) 装载带/盖带尺寸

单位: mm, (): 参考值

封装	尺寸
LLD	φ1.5^{+0.1}₋₀ 4.0±0.1 1.75±0.1 8.0±0.2 (5.6) 4.0±0.1 2.0±0.05 3.5±0.1 0.25±0.05 (1.55) (φ1.0) (3.7) 器件 盖带 装载带
MPAK	φ1.5^{+0.1}₋₀ 4.0±0.1 1.75±0.1 8.0±0.2 (5.6) 4.0±0.1 2.0±0.05 3.5±0.1 0.25 ± 0.05 (1.4) (φ1.1) (3.3) 器件 盖带 装载带

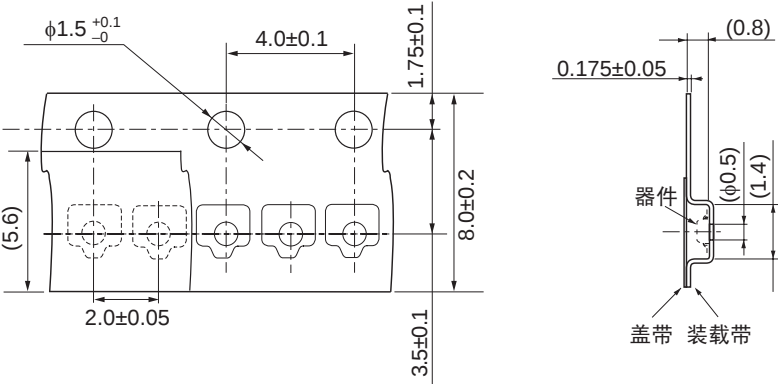
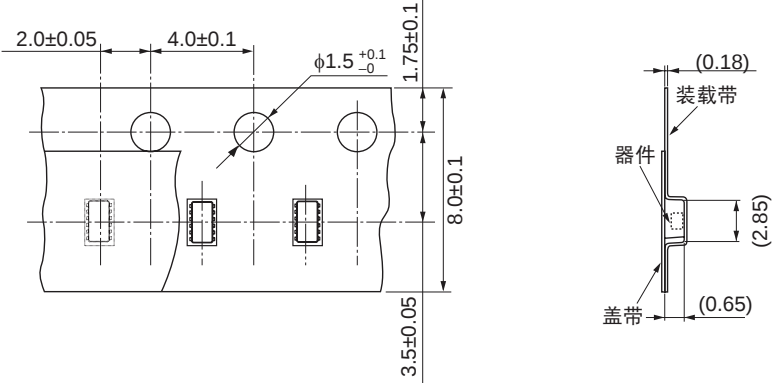
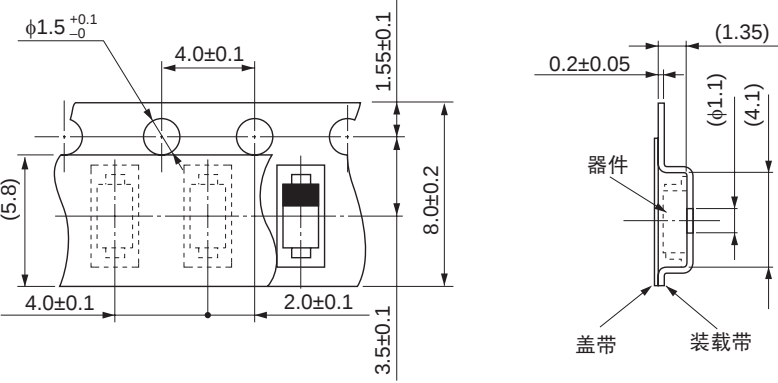
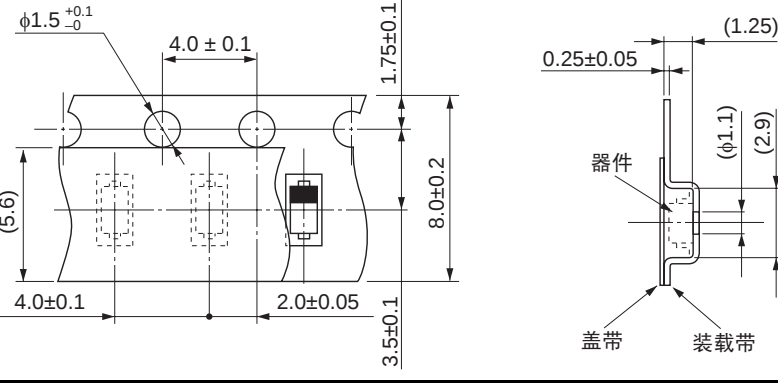
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单位: mm, (): 参考值

封装	尺寸
MPAK-5	 MPAK-5 package dimensions and cross-section. The top view shows a rectangular package with a width of 8.0±0.2 mm and a length of 4.0±0.1 mm. The distance between the centers of the two main components is 4.0±0.1 mm. The distance from the center of the component to the edge is 2.0±0.05 mm. The distance from the center of the component to the edge of the carrier tape is 1.75±0.1 mm. The diameter of the component is $\phi 1.55 \pm 0.10$ mm. The cross-section shows a carrier tape with a width of 1.5 mm, a thickness of 0.25±0.05 mm, and a distance of 0.105 mm from the component to the edge of the tape. The distance from the component to the edge of the carrier tape is 3.3 mm.
CMPAK	 CMPAK package dimensions and cross-section. The top view shows a rectangular package with a width of 8.0±0.2 mm and a length of 4.0±0.1 mm. The distance between the centers of the two main components is 4.0±0.1 mm. The distance from the center of the component to the edge is 2.0±0.05 mm. The distance from the center of the component to the edge of the carrier tape is 1.75±0.1 mm. The diameter of the component is $\phi 1.55^{+0.1}_{-0.05}$ mm. The cross-section shows a carrier tape with a width of 1.25 mm, a thickness of 0.2±0.05 mm, and a distance of 0.105 mm from the component to the edge of the tape. The distance from the component to the edge of the carrier tape is 2.65 mm.
CMPAK-4	 CMPAK-4 package dimensions and cross-section. The top view shows a rectangular package with a width of 8.0±0.2 mm and a length of 4.0±0.1 mm. The distance between the centers of the two main components is 4.0±0.1 mm. The distance from the center of the component to the edge is 2.0±0.05 mm. The distance from the center of the component to the edge of the carrier tape is 1.75±0.1 mm. The diameter of the component is $\phi 1.55^{+0.1}_{-0.05}$ mm. The cross-section shows a carrier tape with a width of 1.15 mm, a thickness of 0.2±0.05 mm, and a distance of 0.105 mm from the component to the edge of the tape. The distance from the component to the edge of the carrier tape is 2.4 mm.
VSON-5	 VSON-5 package dimensions and cross-section. The top view shows a rectangular package with a width of 8.0±0.2 mm and a length of 4.0±0.1 mm. The distance between the centers of the two main components is 4.0±0.1 mm. The distance from the center of the component to the edge is 2.0±0.05 mm. The distance from the center of the component to the edge of the carrier tape is 1.75±0.1 mm. The diameter of the component is $\phi 1.5^{+0.1}_{-0}$ mm. The cross-section shows a carrier tape with a width of 0.90±0.10 mm, a thickness of 0.25±0.05 mm, and a distance of 0.10±0.2 mm from the component to the edge of the tape. The distance from the component to the edge of the carrier tape is 1.75±0.1 mm.

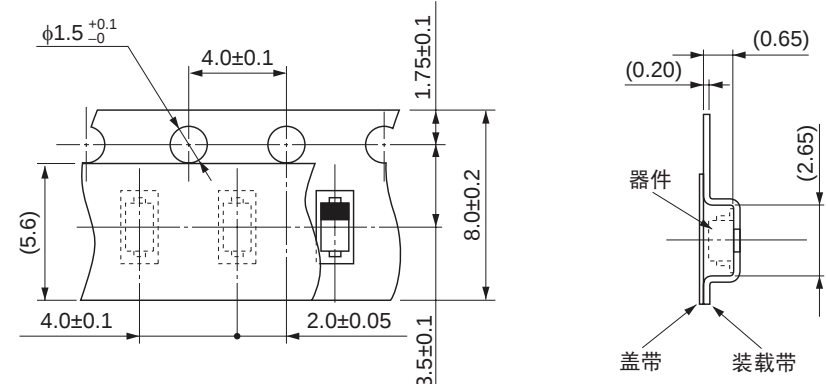
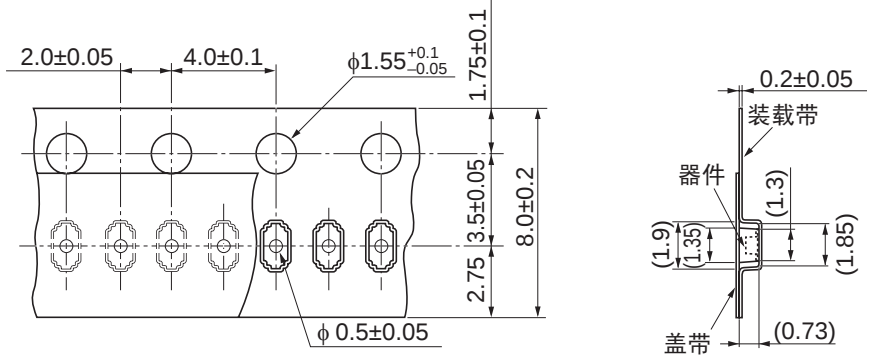
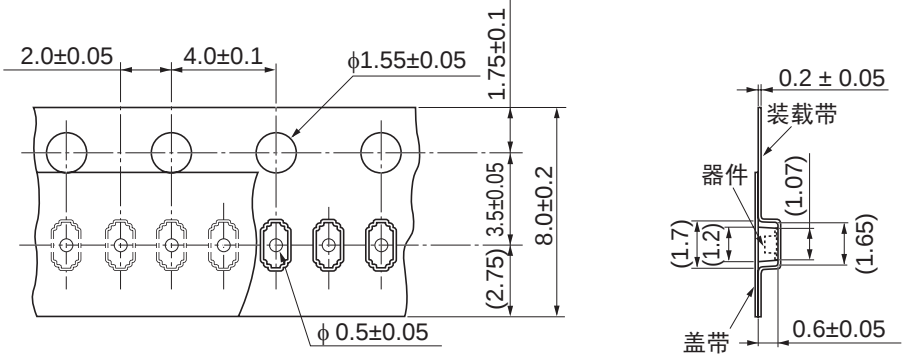
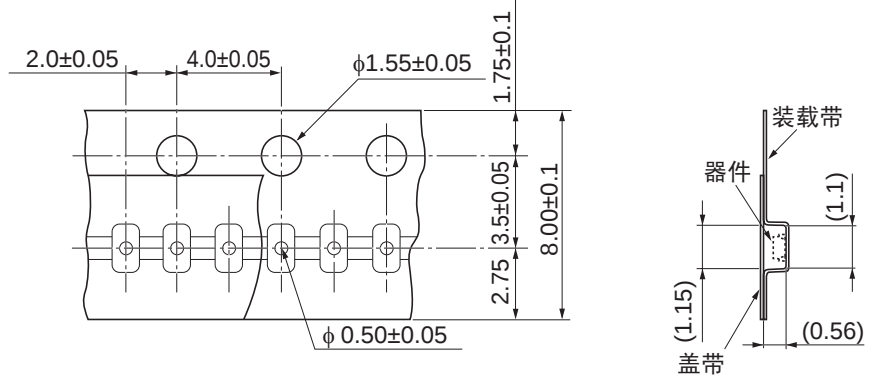
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单位: mm, (): 参考值

封装	尺寸
MFPAK	
MFP12	
SRP	
URP	

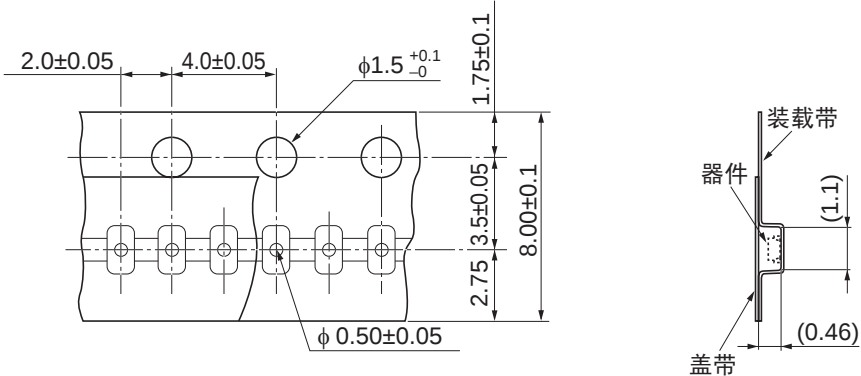
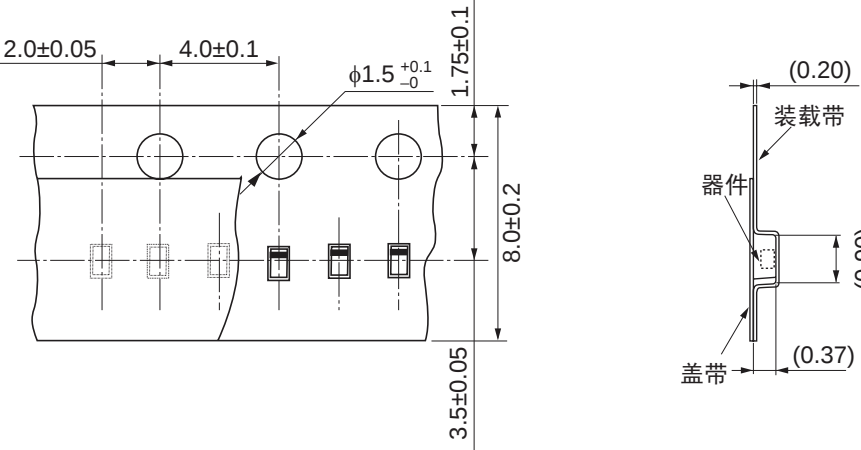
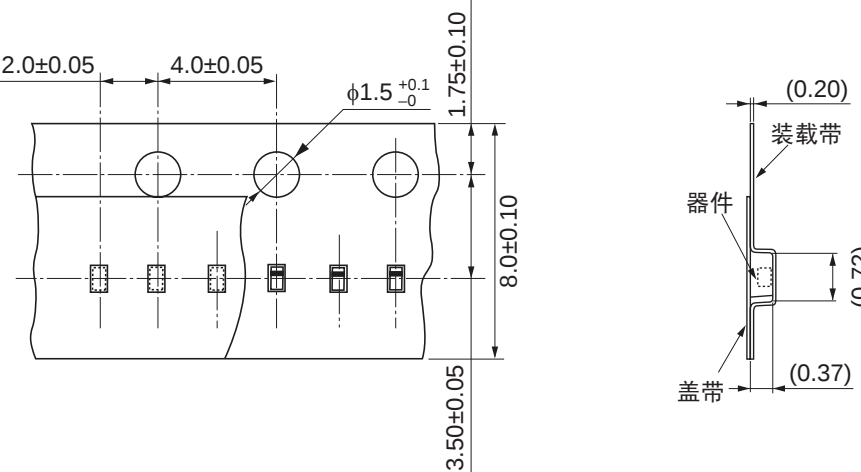
(接下页)

单位: mm, (): 参考值

封装	尺寸
TURP	 Top view dimensions: $\phi 1.5^{+0.1}_{-0}$, 4.0 ± 0.1, 1.75 ± 0.1, 8.0 ± 0.2, 4.0 ± 0.1, 2.0 ± 0.05, 3.5 ± 0.1, (5.6). Cross-section dimensions: (0.20), (0.65), (2.65). Labels: 器件, 盖带, 装载带.
UFP	 Top view dimensions: 2.0 ± 0.05, 4.0 ± 0.1, $\phi 1.55^{+0.1}_{-0.05}$, 1.75 ± 0.1, 8.0 ± 0.2, 2.75, 3.5 ± 0.05, $\phi 0.5 \pm 0.05$. Cross-section dimensions: 0.2 ± 0.05, (1.3), (1.85), (0.73), (1.9), (1.35). Labels: 器件, 盖带, 装载带.
SFP	 Top view dimensions: 2.0 ± 0.05, 4.0 ± 0.1, $\phi 1.55 \pm 0.05$, 1.75 ± 0.1, 8.0 ± 0.2, 2.75, 3.5 ± 0.05, $\phi 0.5 \pm 0.05$. Cross-section dimensions: 0.2 ± 0.05, (1.07), (1.65), 0.6 ± 0.05, (1.7), (1.2). Labels: 器件, 盖带, 装载带.
EFP	 Top view dimensions: 2.0 ± 0.05, 4.0 ± 0.05, $\phi 1.55 \pm 0.05$, 1.75 ± 0.1, 8.00 ± 0.1, 2.75, 3.5 ± 0.05, $\phi 0.50 \pm 0.05$. Cross-section dimensions: (1.1), (0.56), (1.15). Labels: 器件, 盖带, 装载带.

(接下页)

单位: mm, (): 参考值

封装	尺寸
TEFP	 TEFP package dimensions and cross-section. The top view shows a carrier width of 8.00±0.1 mm, with a device width of 3.5±0.05 mm and a pitch of 2.0±0.05 mm. The device diameter is $\phi 1.5^{+0.1}_{-0}$ mm. The cross-section shows a carrier height of 1.1 mm and a device height of 0.46 mm.
MP8	 MP8 package dimensions and cross-section. The top view shows a carrier width of 8.0±0.2 mm, with a device width of 3.5±0.05 mm and a pitch of 2.0±0.05 mm. The device diameter is $\phi 1.5^{+0.1}_{-0}$ mm. The cross-section shows a carrier height of 0.20 mm and a device height of 0.37 mm.
MP6	 MP6 package dimensions and cross-section. The top view shows a carrier width of 8.0±0.10 mm, with a device width of 3.50±0.05 mm and a pitch of 2.0±0.05 mm. The device diameter is $\phi 1.5^{+0.1}_{-0}$ mm. The cross-section shows a carrier height of 0.20 mm and a device height of 0.37 mm.

(6) 卷带符号

URP封装产品的卷带根据1卷内的个数及组数等，规定了下述卷带符号。

卷带代码	卷带方向	1卷内的 最大种类数	1卷内的个数	组数	组的类别	备注
TRF	TR	—	3000个	—	—	—
TRU		4	3000个	10+1n	4个空格	用于C.C 方式*1
TRV					1个空格的无 反射卷带	

【注】 1. 变容二极管的连续卷带方式

UFP封装产品的卷带根据1卷内的个数及组数等，规定了下述卷带符号。

卷带代码	卷带方向	1卷内的 最大种类数	1卷内的个数	组数	组的类别	备注
TRF	TR	—	4000个	—	—	—
TRU		5		10+1n	9个空格	用于C.C 方式*1
TRV					1个空格+ 1个空格的无 反射卷带+1 个空格	
KRF	KR	—	8000个	—	—	—
KRU		10		10+1n	4个空格	用于C.C 方式*1
KRV					1个空格的无 反射卷带	

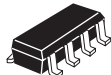
【注】 1. 变容二极管的连续卷带方式

SFP封装产品的卷带根据1卷内的个数及组数等，规定了下述卷带符号。

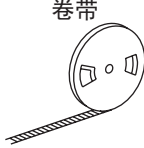
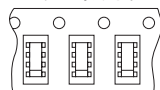
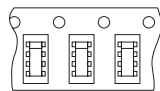
卷带代码	卷带方向	1卷内的 最大种类数	1卷内的个数	组数	组的类别	备注
KRF	KR	—	8000个	—	—	—

2.3.2 12mm 卷带

(1) 适用封装

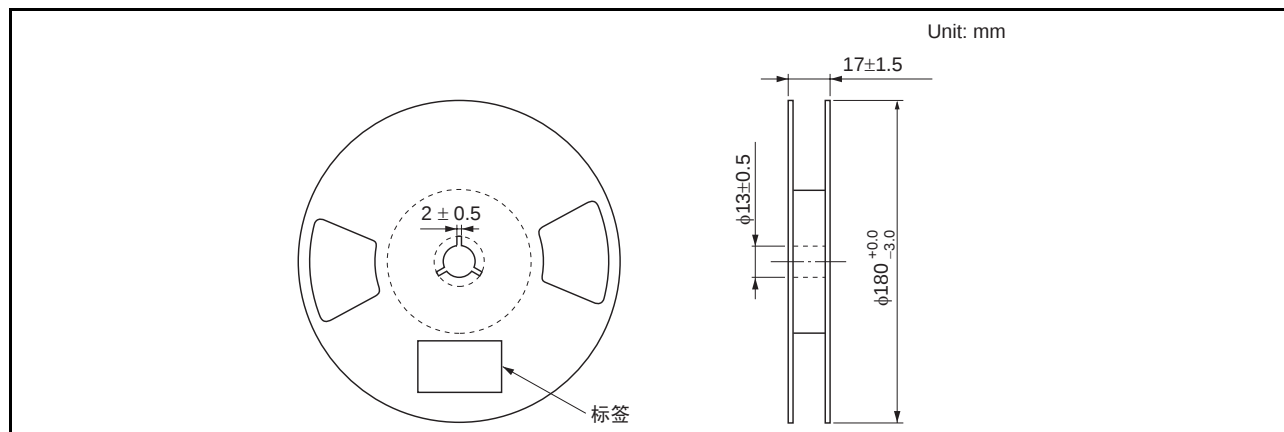
MOP 
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(2) 卷带规格

封装	包装形态	包装单位	包装规格代码	备注
MOP*1		3000 (个/卷)	TR *2 (Taping to Right)	TR拉出方向→ 
			TL (Taping to Left)	TL拉出方向→ 

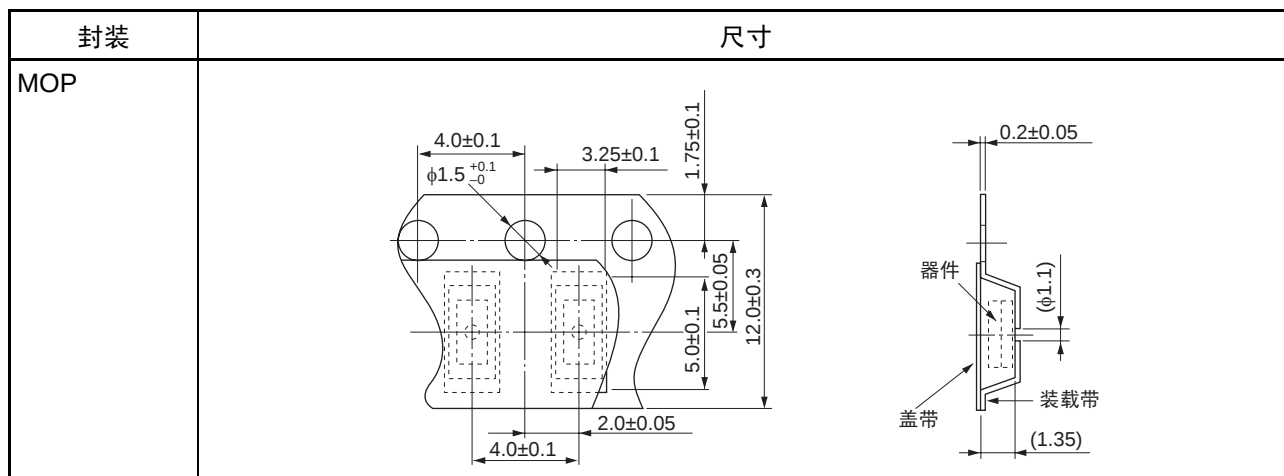
【注】 1. 器件脱落≤3/卷, 连续器件脱落=0/卷
2. 为推荐的卷带包装规格。

(3) 卷带尺寸



(4) 装载带/盖带尺寸

单位: mm, (): 参考值



3. 使用时的注意事项

- 通过对包装进行严格的管理, 可防止卷带等发生尺寸不良的现象。搬运时请注意不要使包装箱受损。
- 由包装箱中取出时, 请拿着卷带部分往外拉。向二极管施加外力时, 会使节距发生变化, 并引起引脚弯曲。
- 保管产品时, 必须充分注意避免因堆积使包装箱受损, 并在干燥场所保管。

公司主页和咨询窗口

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<http://www.cn.renesas.com>

亚洲地区技术支持中心

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修订记录

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		页	修订处
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