

编 码 器 规 格 书						
SPECIFICATIONS						
适用型号：ED10R1B0-FB12S5.0-05A103-1000						
APPLICABLE MODELS：ED10R1B0-FB12S5.0-05A103-1000						
1. 一般事项 General information						
1-1 适用范围: 本规格书适用于家用电器 Applying range: This specification is applied to home appliances。						
1-2 使用温度范围 Oper ating temperature range -30 ℃～+70℃						
1-3 储存温度范围 Storage temperature range -40℃～+85℃						
1-4 试验的状态 温度 5～35℃、45～85%RH Test condition As our standard condition: temperature 5～35℃、Moisture: 25～85%RH						
2.外观尺寸						
Appearance and dimensions						
2-1 外观 外观无锈蚀,电镀不良,破裂和明显变形、无油脂污染; Appearance No harmful rust, cracks, scratches and poor under functioning						
2-2 尺寸 见附图 Dimensions Refer to attached drawing						
3.机械特性 M echanical characteristics						
项目 Items		规格 Specifications		条件 Condition		
3-1 转轴材料 Shaft material		不锈钢 Stainless steel				
3-2 定位点力矩 Detent torque (gf.cm)		100~300 gf.cm (before reflow test and cycle test)				
3-3 定位点数 Number of detent		24 定位点 24 detents				
3-4 全旋转角度 Total rotational angle		300° ±5°				
3-5 轴回转止动强度 Shaft stopper strength		3.0 kgf.cm 以上 3.0 kgf.cm min				
3-6 端子强度 Terminal strength		端子焊接部位无松动、损坏、脱落。试验后,端子可能弯曲,但是应满足第 4 项规定的电气参数要求。 Shall be free from terminal looseness damage and breakage of terminal soldering position. terminals may be bent after test. But electrical performance requirements specified in item 4 shall be satisfied.		在端子前端的垂直方向施加 4.9N(0.5kgf)的静止荷重 10 秒钟。(每个端子 1 次) A static load of 4.9N(0.5kgf) shall be applied to the tip of terminal for 10S in a desired direction. The test shall be done once per terminal		
3-7 轴芯推拉强度 Strength		轴向拉力: 98.1N min (10kgf min) 轴向推力: 98.1N min (10kgf min) 边推强度: 98.1N min (10kgf min) Axial pull: 98.1N min (10kgf min) Axial push: 98.1N min (10kgf min) Lateral push strength: 98.1N min (10 kgf min)		静荷重 Static load		
3-8 轴偏摆 Shaft wobble		转轴偏摆(mm p-p 以下) Shaft wobble (mm p-p less) 5 0.7×L/30 7 0.6×L/30 10 以上 MIN 0.5×L/30 L: 距轴套安装面的测量点 L: Measurement point from mounting surface of bushing.		在距安装面 30mm 轴柄的位置, 施加弯曲力矩 50mN.m. Bending torque of 50mN.m to be applied to the shaft at 30 mm from the mounting surface.		
型号 Model	ED10R1B0-FB12S5.0-05A103-1000			版本 Edition	1.0	CT-QR2215
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3-9 耐焊接热 Soldering Heat Resistance	A:手工焊: 350±5℃/ 3S Max. B: 自动焊接温度最高 260℃±5℃, 3 秒; Auto soldering max, 260℃±5℃. at 3 Sec.	
3-10 可焊性 Solderability	不应有外观及操作异常发生, 电气性能符合规格第 4 项要求。 NO abnormalities shall be observed in appearance and operation. The electrical performance requirements specified in item 4 shall be satisfied. 被浸入表面均匀的焊锡涂层, 应达到 75% 以上。 A new uniform coating of solder shall cover a minimum of 75% of the surface being immersed.	焊锡温度: 235±5℃ 焊锡时间: 3.5±0.5 秒 Solder temperature: 235±5℃ Solder dipping time: 3.5±0.5S
3-11 防水性 Water proof grade	IP67	
4.电气特性 Electrical characteristics		
项目 Items	规格 Specifications	条件 Condition
4-1 抵抗值 Total resistance	05A10KΩ±1%	
4-2 额定功率 Power rating	1/32W	
4-3 最高使用电压 Maximum operating voltage	DC 15V ,	
4-4 绝缘电阻 Insulation resistance	100MΩ 以上 100MΩ MIN	DC250V 1min±5S 施加位置: 所有端子与接地(外壳)间 Applied position:Between all terminals and ground(frame)
4-5 耐电压 Voltage proof	绝缘材料无击穿 No subversion on insulation resistance	AC250V 1minute 施加位置: 所有端子与接地(外壳)间 Applied position:Between all terminals and ground(frame)
5.耐久性 Durability		
项目 Items	规格 Specifications	条件 Condition
5-1 旋转寿命 Rotational life	抵抗值: 05A10KΩ±1% Total resistance: 05A10KΩ±1% 定位点力矩: 50gf.cm 以上 Detent torque : 50 gf.cm min.	无负荷, 速度: 720 周/小时: 15,000 次 Encoder shall be operated 15,000 cycles at 720 cycles/H (without load) .
5-2 耐寒性 Cold resistance	符合初始规格 3、4 的要求。 Specification in clause 3、4 shall be satisfied.	-40℃ 96 小时(无负荷放置) -40℃ 96 hours left without loading.
5-3 耐热性 Heat resistance		85℃ 96 小时(无负荷放置) 85℃ 96 hours left without loading.
5-4 耐湿性 Moisture resistance		40℃湿度 90-95%RH 96 小时(无负荷放置) 40℃ 90-95%RH 96 hours left without loading.
东莞市长泰尔电子有限公司 DONG GUAN CHANG TAI ER ELECTRONICS CO.,LTD		设计 Designed By
		审核 Checked By
		核准 Approved By
		研发工程部 2022.07.18 田维金 研发工程部 2022.07.18 喻钊 研发工程部 2022.07.18 彭先炎

Technical drawing of the ED10R1B0-TAPERS (05A) SERIES potentiometer, showing dimensions, resistance values, and PCB mounting details.

Dimensions (mm):

- Overall length: 17.1 ± 0.3
- Shaft length: 12 ± 0.3
- Shaft diameter: $\phi 6_{-0.05}^0$
- Shaft thread: $M7 \times 0.75$
- Mounting hole diameter: $12 - \phi 1_{-0}^{+0.05}$
- Mounting hole pitch: 6.35
- Mounting hole offset: 3
- Mounting hole diameter: $12 - \phi 1_{-0}^{+0.05}$
- Mounting hole pitch: 6.35
- Mounting hole offset: 3
- Mounting hole diameter: $12 - \phi 1_{-0}^{+0.05}$
- Mounting hole pitch: 6.35
- Mounting hole offset: 3

Resistance Values (Ω):

Resistance Value (Ω)	Resistance Value (Ω)	Resistance Value (Ω)
24	3000	10024
23	1600	7024
22	1200	5424
21	910	4224
20	750	3314
19	560	2564
18	430	2004
17	360	1574
16	270	1214
15	220	944
14	160	724
13	130	564
12	100	434
11	75	334
10	56	259
9	47	203
8	33	156
7	24	123
6	43	99
5	24	56
4	12	32
3	10	20
2	10	10
1	0	0

Graph:

Output V1-2 vs Input V1-3 (X100%)

Term. "1" Rotation Travel (%) Term. "3"

PCB Mounting Hole Detail:

12- $\phi 1_{-0}^{+0.05}$

3 2 1

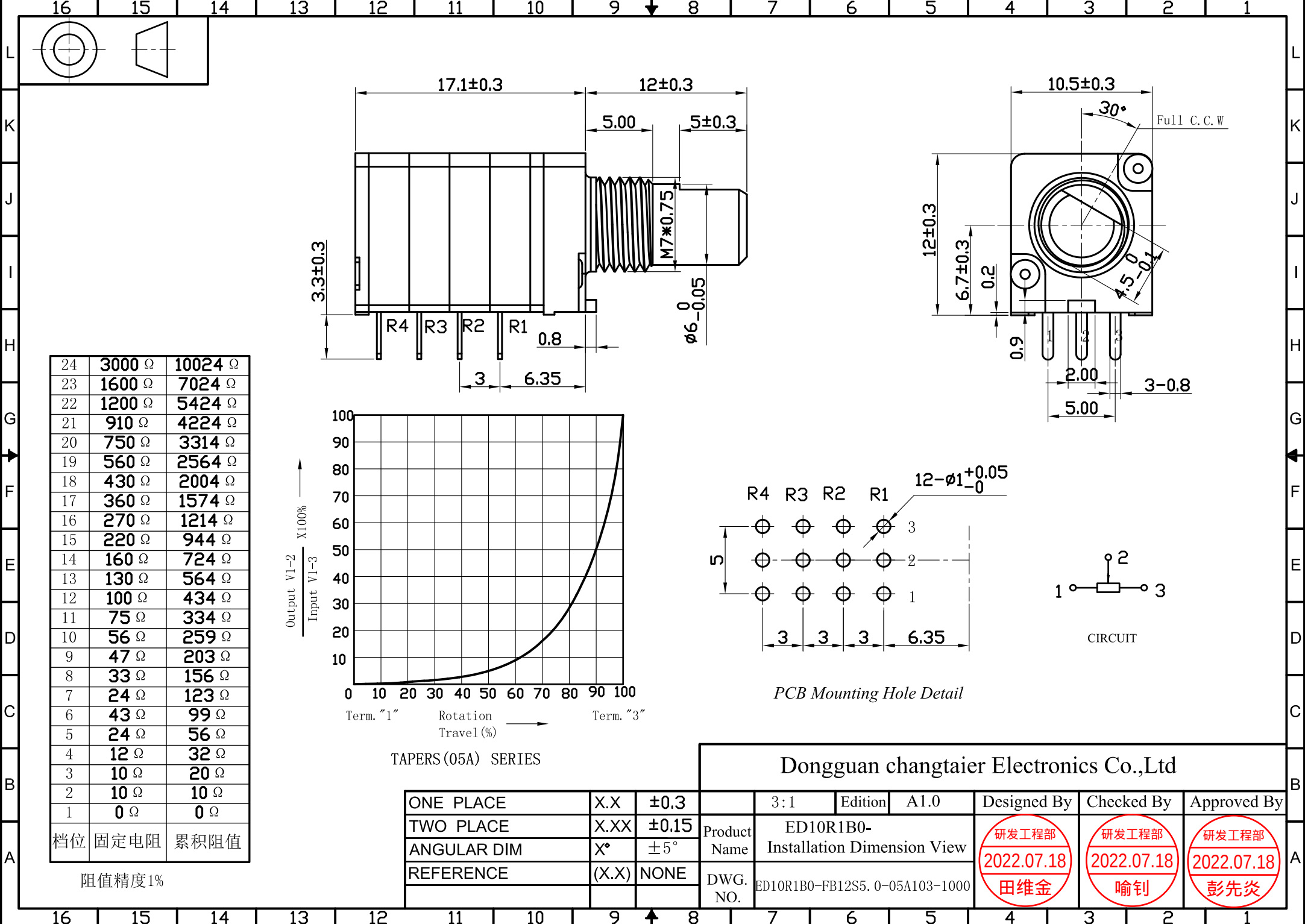
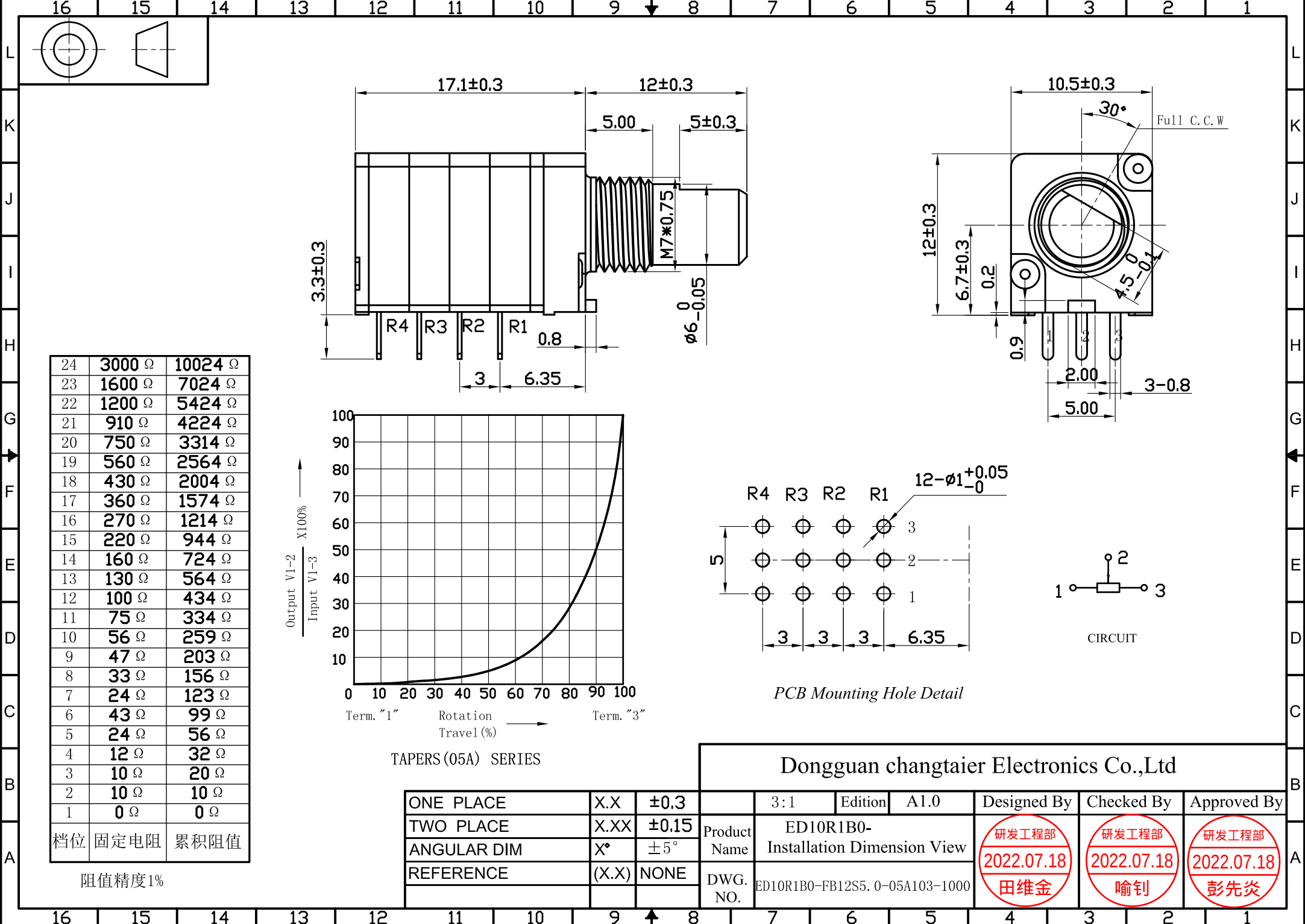
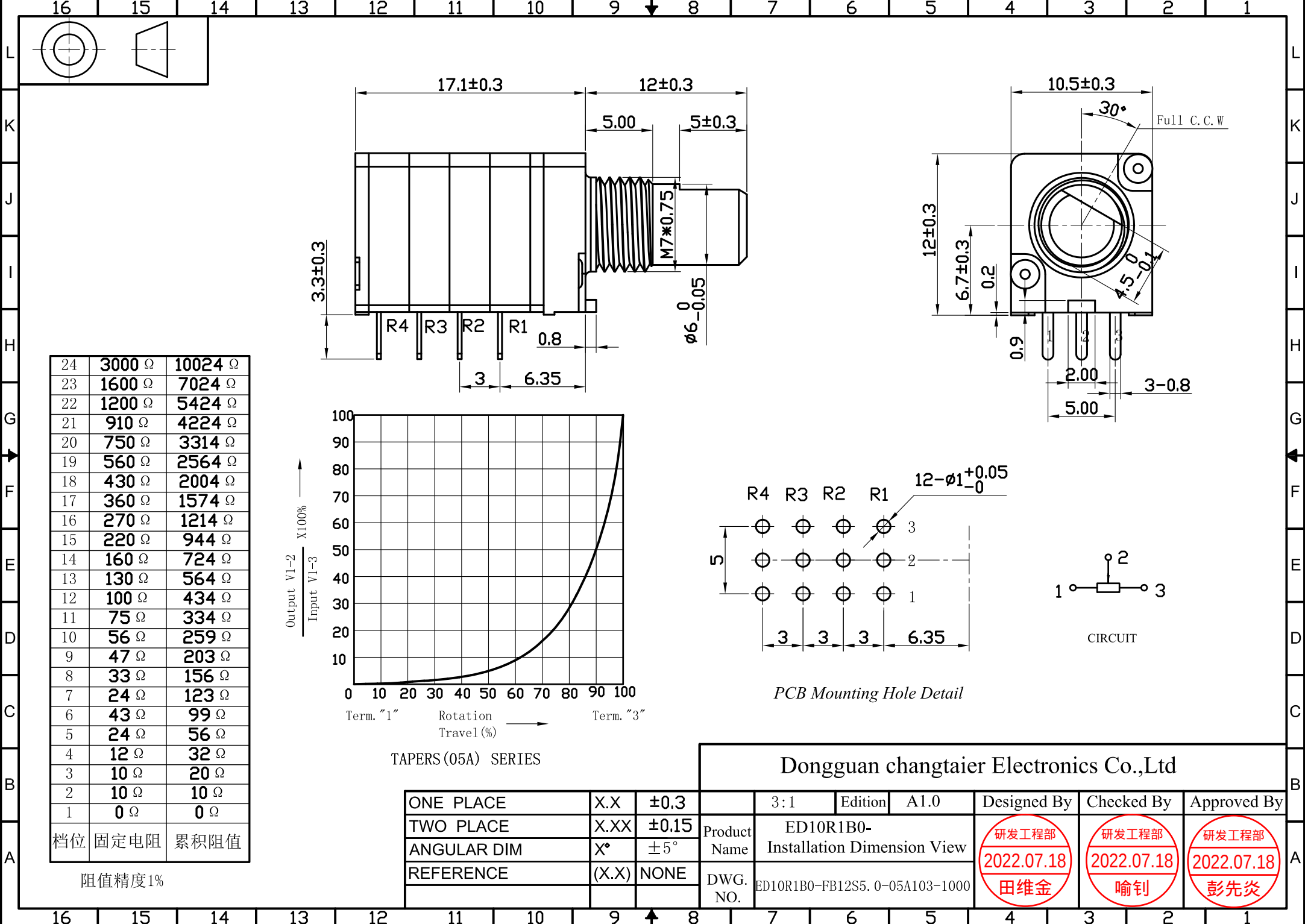
3 3 3 6.35

CIRCUIT:

1 2 3

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ONE PLACE	X.X	± 0.3	Product Name	ED10R1B0- Installation Dimension View	Designed By	Checked By	Approved By
TWO PLACE	X.XX	± 0.15	DWG. NO.	ED10R1B0-FB12S5. 0-05A103-1000	研发工程部 2022.07.18 田维金	研发工程部 2022.07.18 喻钊	研发工程部 2022.07.18 彭先炎
ANGULAR DIM	X°	$\pm 5^\circ$					
REFERENCE	(X.X)	NONE					

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Technical Drawing of ED10R1B0- FB12S5. 0-05A103-1000

Top View: Shows dimensions 17.1±0.3, 12±0.3, 5.00, 5±0.3, 3.3±0.3, 0.8, 3, 6.35, M7×0.75, and Ø6_{-0.05}. It also indicates terminals R4, R3, R2, R1.

Front View: Shows dimensions 10.5±0.3, 30°, Full C.C.W., 12±0.3, 6.7±0.3, 0.2, 4.5_{+0.0}_{-0.1}, 0.9, 2.00, 3-0.8, 5.00, and 12-Ø1_{+0.05}₋₀.

Graph: A graph showing Output V1-2 / Input V1-3 X100% versus Rotation Travel (%). The curve starts at 0% rotation and reaches 100% output at 100% rotation travel.

PCB Mounting Hole Detail: A diagram showing the arrangement of mounting holes (R4, R3, R2, R1) and their dimensions (3, 3, 3, 6.35).

Circuit Diagram: A simple circuit diagram showing a switch or relay symbol with terminals 1, 2, and 3.

Resistance Value Table:

档位	固定电阻	累积阻值
24	3000 Ω	10024 Ω
23	1600 Ω	7024 Ω
22	1200 Ω	5424 Ω
21	910 Ω	4224 Ω
20	750 Ω	3314 Ω
19	560 Ω	2564 Ω
18	430 Ω	2004 Ω
17	360 Ω	1574 Ω
16	270 Ω	1214 Ω
15	220 Ω	944 Ω
14	160 Ω	724 Ω
13	130 Ω	564 Ω
12	100 Ω	434 Ω
11	75 Ω	334 Ω
10	56 Ω	259 Ω
9	47 Ω	203 Ω
8	33 Ω	156 Ω
7	24 Ω	123 Ω
6	43 Ω	99 Ω
5	24 Ω	56 Ω
4	12 Ω	32 Ω
3	10 Ω	20 Ω
2	10 Ω	10 Ω
1	0 Ω	0 Ω

阻值精度1%

TAPERS (05A) SERIES

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ONE PLACE	X.X	±0.3	Product Name	ED10R1B0- Installation Dimension View	Designed By	Checked By	Approved By
TWO PLACE	X.XX	±0.15	DWG. NO.	ED10R1B0-FB12S5. 0-05A103-1000	研发工程部 2022.07.18 田维金	研发工程部 2022.07.18 喻钊	研发工程部 2022.07.18 彭先炎
ANGULAR DIM	X°	±5°					
REFERENCE	(X.X)	NONE					

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