

# 承认书

## APPROVE SHEET

客户名称：

Customer \_\_\_\_\_

产品名称：

Description 正温度系数热敏电阻器

型号规格：

Model Detail WMZ12A-130HL6R0VUU320F18-E8C

批准 Approval by	审核 Checked by	拟制 Prepared by
	任志远	方观灵

批准 Approval by	审核 Checked by	拟制 Prepared by

供方签章：

Supplier

日期：

Date



客户签章：

Customer

日期：

Date

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## 承认变更履历表

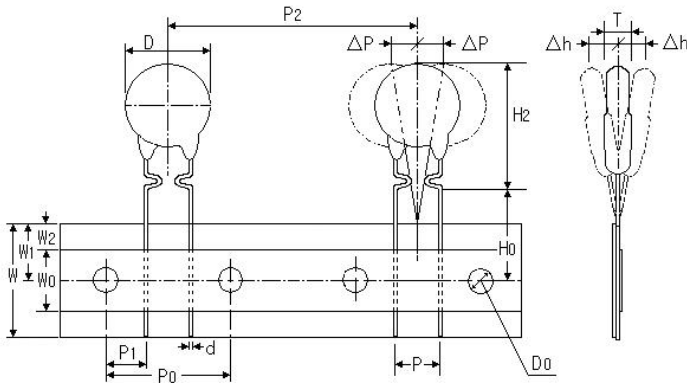
### APPROVAL REVISION CORE LIST

项次	依据	更改事项	版本	时间	更改者	确认
1	首次发行	/	A	2023-08-19		陈云

Model No:	PTC THERMISTOR 6.0 Ω 320mA	2023-08-19
Part No.: WMZ12A-130HL6R0VUU320F18-E8C		

1. APPEARANCE 外观

1-1. Dimensions (mm)尺寸



※ 1. 尺寸要求见“7. 编带尺寸要求”。

1-2. Marking 标志

WMZ12A

■ 130HL

□ No marking

1-3. Coating 包封

□ No coating 无包封

■ Coating 包封

Material 包封材料

□ PF resin 酚醛树脂

□ Silicon 硅树脂

■ Epoxy 改良树脂

□ Others 其他

Color 颜色

■ Green 绿色

□ Red 红色

□ Tan 黄色

□ Black 黑色

□ Blue 兰色

1-4. Leads 引线

■ Tin-plated copper wire 铜线

□ Tin-plated steel wire 镀锡钢线

□ Straight 直形

□ Axis-formed 轴弯

□ No Lead 无引线

■ In-formed 内弯

2. RATINGS 额定参数

2-1. Rated Operating Voltage 额定工作电压  $U_R$ : 220V<sub>rms</sub>

2-2. Max Working Voltage 最大工作电压  $V_{max}$ : 265 V<sub>rms</sub>

2-3. Max Working Current 最大工作电流  $I_{max}$ : 4.0A

2-4. Operating Temperature 工作温度: -40℃ ~ +85℃ (U=0) -10℃ ~ +60℃ (U=U<sub>max</sub>)

3. MECHANICAL CHARACTERISTICS 机械性能

Item 指标项目	Specification 技术要求	Test Conditions & Methods 测试条件/方法
3-1. Solder-ability 可焊性	The terminals shall be uniformly tinned, and its area ≥ 95% 浸润部分上锡均匀， 上锡面积 ≥ 95%	Dipping the PTC terminals to a depth of 15mm in a soldering bath of 245℃ ± 5℃ and to the place of 6mm far from PTC body for 3 ± 0.5s (See IEC68-2-20 /GB2423.28 Ta) 将引出端沾助焊剂后，浸入到温度为 245℃ ± 5℃、深度为 15mm 的锡槽中锡面距 PTC 本体下端 6mm 处，持续 3 ± 0.5 秒。（参见 IEC68-2-20 /GB2423.28 试验 Ta）
3-2. Resistance To Soldering Heat 耐焊接热	No visible mechanical damage. 无可见损伤 $\Delta R/R_N \leq 20\%$ $(\Delta R =  R_N - R_N' )$ 3	Dipping the terminals to a depth of 15mm in a soldering bath of 260℃ ± 5℃ and to the place of 6mm far from PTC body for 3 ± 0.5s. After recovering for 4~5 hours under normal temperature. The resistance (R <sub>N'</sub> ) shall be measured. (See IEC68-2-20 /GB2423.28 Tb) 将引出端沾助焊剂后，浸入到温度为 260℃ ± 5℃、深度为 15mm 的锡槽中锡面距 PTC 本体下端 6mm 处，持续 3 ± 0.5 秒。在常温条件下恢复 4~5 小时后，复测额定零功率电阻值 R <sub>N'</sub> 。（参见 IEC68-2-20 /GB2423.28 试验 Tb）

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3-3. Strength of lead terminal 引出端强度	No break out 无损坏	Fasten the body and apply a force gradually to each lead until 10 N and then keep for 10sec, Hold the body and apply a force to each lead until 90° slowly at 5 N in the direction of lead axis and then keep for 10sec, and do this in the opposite direction repeat for other terminal. (See IEC68-2-21/GB2423.29 Ua / Ub) 根据 IEC68-2-21 (GB2423 .29) 试验 U 进行试验。 试验 Ua: 拉力 10N, 持续 10S; 试验 Ub: 弯曲 90°, 拉力 5N, 连续两次; 试验 Uc: 扭转 180°C, 连续两次。 在常温常湿条件下恢复 4~5 h 后, 复测额定零功率电阻 Rn'	
4. ELECTRICAL CHARACTERISTICS 电气性能			
Item 指标项目	Specification 技术要求	Test Conditions & Methods 测试条件/方法	
4-1. Rated Zero-power Resistance 额定零功率电阻 (RN)	6.0 Ω ± 25%	Ambient temp. TA: 25°C ± 2°C Testing voltage: 1.5VDC After placing for 1~2 hours under TA, the resistance value shall be measured. 环境温度 TA: 25°C ± 2°C (Tc=50°C时 25°C ± 1°C) 测试电压: 1.5VDC 在常温 TA 条件下, 放置 1~2 小时 后测得阻值 RN。	
4-2. Curie Temperature 居里温度 (Tc) (For information only)	130 ± 10°C	The resistance at Tc is twice of RN 电阻为零功率电阻的 2 倍时所对应的温度为 Tc。	
4-3. Non-operating Current 不动作电流 (IN)	320mA Δ R / RN ≤ 50% (Δ R =   RN - RN'   )	Ambient temp. Range 环境温度: 60°C ± 2°C In static air 静止空气中 Voltage of power supply 电源电压: 220V <sub>rms</sub> . Hold current 电流: 320mA Energized time 持续时间: 60min, Resistance (RN') shall be measured	
4-4. Trip Current 动作电流 (ISW)	845mA Δ R / RN ≥ 50% (Δ R =   RN - RN'   )	Ambient temp. Range 环境温度: -10°C ± 2°C In static air 静止空气中 Voltage of power supply 电源电压: 220V <sub>rms</sub> . Hold current 电流: 845mA Energized time 持续时间: 5min, Resistance (RN') shall be measured	
4-5. Over-Vol. Withstanding 耐电压能力 (Ub)	320V <sub>AC</sub> Δ R / RN ≤ 20% (Δ R =   RN - RN'   )	TA: 25°C ± 2°C Initial Current 起始电流 I <sub>max</sub> : 4.0A Test vol. 测试电压: 220V <sub>rms</sub> / 10s → Ub / 10s After recovering for 4~5 hours under normal temperature. The resistance (RN') shall be measured. 在常温条件下, 放置 4~5 小时 后测得阻值 RN'	
4-6. Resistance to current impact 耐电流冲击	Δ R / RN ≤ 20% (Δ R =   RN - RN'   )	TA: 25 ± 2°C 被测通以 V <sub>max</sub> 和 I <sub>max</sub> Energized time 通电时间: 1min ON, 3min OFF Testing times 测试次数: 10times	

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5. 抽样方案:

Item 指标项目	IL	AQL	Ac	Item 指标项目	IL	AQL	Ac
5-1. Appearance 外观	II	1.5		5-4. Over Voltage Withstanding 耐电压能力	8PCS/Lot		0
5-2. Rated Zero-power Resistance 额定零功率电阻 (RN)	II	0.65		5-5. Solder-ability 可焊性	5PCS/Lot		0
5-3. Non-operating Current 不动作电流(IN)	5PCS/Lot		0				

6. NUMBERING SYSTEM AND PACKING 编号方法和包装方式

6-1. Part Numbering 料号编号方法

WMZ12A	-	130	HL	6R0	V	U	U	320	F	18	E	8	C
①		②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬

① Series 系列: WMZ12A- PTC thermistors for over-current protection  
过电流保护系列 PTC 热敏电阻。

② Curie temperature 居里温度 130:130°C (75: 75°C 85: 85°C ……)

③ Diameter 外径 D HL:18.5mm (M: 11.5mm S: 4.5mm L: 5.5mm……)

④ Rated zero power resistance 额定零功率电阻(RN) 6R0: 6.0Ω (401: 400Ω; 202: 2KΩ 153: 10KΩ …)

⑤ Tolerance 电阻允差 V: ±25% ( X:Else 其它 M: ±20% N: ±30% P: ±50%; …… )

⑥ Leads form 引线形状 U: Inside kink 内弯 (A: Axis wind 轴弯 S: Straight 直形 F: No coating 无包封)

⑦ Leads 引线材质 U: Tin-plated copper wire 铜线( P: 铜包钢线)

⑧ Non-operating current 不动作电流 320:320mA ( 120: 120mA 330: 330mA…… )

⑨ Packing Type 包装方式 F-Foldable Tape 折叠编带 ( A: Ammo 条带 B: Bulk 散装 C: Reel 盘带 ……)

⑩ Leads length 引线长度: 18: 18.0±1.0mm 3.5: 3.5±0.5mm 5: 5.0±1.0mm 20:20mm(最小值)

⑪ Coating Material 包封材料: S - Black Silicone 硅树脂 G - Green Silicone 绿色硅树脂 N - No Coating 无包封  
P - PF Resin 酚醛树脂 E -Epoxy 改良树脂

⑫ Leads Diameter 引线直径: 5 - Φ0.5mm 6 - Φ0.6mm 8 - Φ0.8mm 1 - Φ1.0mm

⑬ Leads Distance 引线间距: A - 2.5mm B - 5.0mm C - 7.5mm D - 10.0mm

6-2. Lot Numbering 批号编号方法

130	HL	A	1307226	1/2
①	②	③	④	⑤

① Curie temperature 居里温度 130:130°C (105: 105°C 85: 85°C ……).

② Diameter 外径 Dmax HL:18.5mm (M:11.5mm S: 4.5mm L: 5.5mm……).

③ Series 系列: WMZ12A-PTC thermistors for over-current protection  
过电流保护系列 PTC 热敏电阻。

④ Pipelined batch number 流水批号: 1307226 ;

⑤ Shipment branch card batch number 分卡号: 1/2 ;

6-3. PACKING TYPE 包装方式

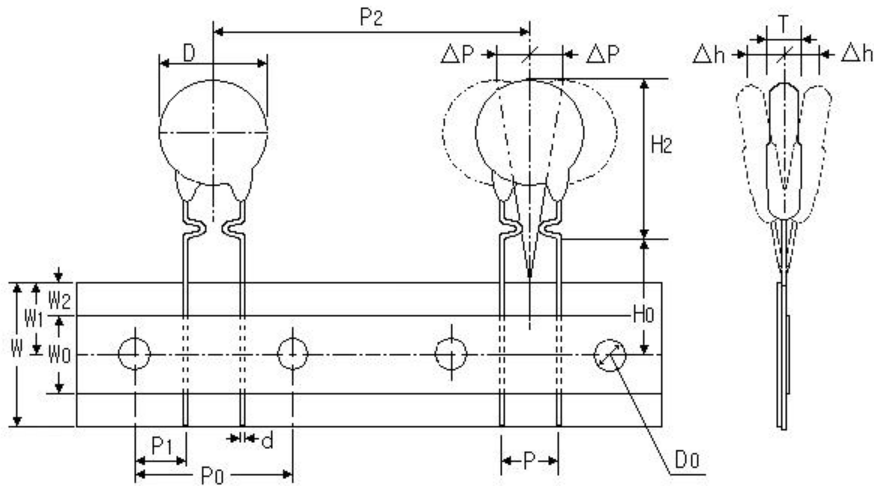
Bulk \_\_\_\_\_ Pcs / Bag

Reel \_\_\_\_\_ Pcs / Reel


Foldable Tape 500 Pcs / Box

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7. Braid size 编带尺寸要求:



Dmax	18.5mm
Tmax	7.5mm
d±0.05	0.6mm
P±0.5	7.5mm
P <sub>0</sub> ±0.3	15.0mm
P <sub>2</sub> ±1.0	30.0mm
P <sub>1</sub> ±0.7	3.75mm
H <sub>0</sub> ±1.0	18.0mm
H2max	24.5mm
W±1.0	18.0mm
W <sub>0</sub> ±1.0	10.0mm
W <sub>1</sub> ±1.0	9.0mm
W <sub>2</sub> ±1.0	1.5mm
ΔPmax	1.0mm
Δhmax	2.0mm
D0±0.2	4.0mm

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<p>8. STORAGE CONDITIONS 贮存环境条件</p> <p>8-1. Temperature 温度: -10℃~+40℃</p> <p>8-2. Humidity 湿度: ≤70%RH</p> <p>8-2. Term 期限: ≤6 months (First-in/ First-out 先进先出)</p> <p>8-3. Place 地点:</p> <p>Do not exposing PTC components to the following conditions, otherwise, it may result to deterioration of characteristics. 不要暴露在下列环境条件下, 否则将导致性能衰退或参数飘移:</p> <p>1) Corrosive gas or deoxidizing gas. 腐蚀性或易氧化气体</p> <p>2) Flammable and explosive gases. 易燃易爆气体</p> <p>3) Oil, water and chemical liquid. 油、水和化学溶液</p> <p>4) Under the sunlight. 太阳光下</p> <p>8-4. Handling after seal open 开封后的处理:</p> <p>After unpacking of the minimum package, reseal it promptly or store it inside a sealed container with a drying agent. 尽量保证开口最小化, 立即重新封好, 并贮存在密封、带有干燥剂的容器中。</p> <p>9. WARNING 注意.警告 </p> <p>Do not apply the components under the following conditions, otherwise, it may result in deterioration of characteristics, destruction of product or in the worst case, to catching fire. 请不要在下列条件下使用本元件, 否则将可能导致产品性能衰退或产品损毁, 甚至引发火灾:</p> <p>1) Exceeding I<sub>max</sub> or V<sub>max</sub>. 超过最大工作电流或工作电压</p> <p>2) Exceeding rated temperature range. 超过许可工作温度范围</p> <p>3) Inferior thermal dissipation (Due to badly inferior thermal dissipation, some part of the components will become overheated and then be damaged.) 散热不良 (由于散热不良, 本元件可能因部分过热而导致破坏)</p>		

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