

低阻低 TC 高功率厚膜贴片电阻承认书-UR 系列

Approval Specification for Low Resistance of Low TCR High Power Thick Film Chip Resistors - Type **UR**

承认书

APPROVAL SHEET

厂商：丽智电子（昆山）有限公司

客户：_____

：丽智电子（南通）有限公司

Supplier:

customer:

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1. 范围 (scope) :

1.1 适用于本公司所生产的无铅、无卤之低阻值低 TCR 高功率厚膜贴片电阻 UR 系列

This specification applies to Low resistance of Low TCR High power thick film chip resistors which meet requirements of Pb free and halogen free.

1.2 本公司的无铅产品指的贴片电阻端电极无铅，而存在于电阻层的玻璃中的符合 RoHS 豁免条款。

There no lead exists in terminal of resistor, and lead which exist in glass of resistor layer meets RoHS exemption.

1.3 低温度系数/TCR，高功率

Low temperature coefficient High power

2. 产品料号 (part number) :

0805 1/4W 1% 68mΩ

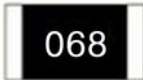
UR0805F4R068G

<u>UR</u>	<u>0805</u>	<u>F</u>	<u>4</u>	<u>R068</u>	<u>G</u>
↓	↓	↓	↓	↓	↓
类型(Type) UR: 低阻低 TC 高功率厚膜贴 片电阻 (Low resistance of Low TCR High power thick film chip resistors)	尺寸(Size) 0402 0603 0805 1206 2010 2512	公差 Tolerance F=±1% J=±5%	额定功率 Rated Power 1=1W 2= 1/2W 3=1/3W(for 0805) 3= 3/4W 4= 1/4W 8= 1/8W	阻值 Resistance value ±5% : <100mΩ(不含) R050=50mΩ R068=68mΩ ≥ 100mΩ 0R10=100mΩ ±1% : <100mΩ(不含) R050=50 mΩ R068=68mΩ ≥ 100mΩ(含) R100=100mΩ	包装代码 Packing Code G= reel (卷装) V= bulk (散料) S= Double Standard Quantity (两倍卷 盘标准包装量)

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3. 电阻本体字码标示(Marking on the Resistor's Body):

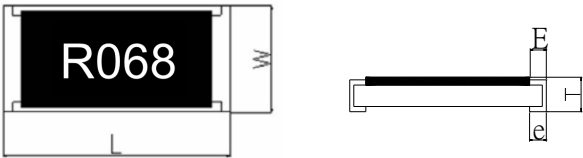
※ 0402 因本体太小，本体上无字码标示。 For 0402 size, no marking on the body due to the small size of the resistor		無字碼
※ 0603 尺寸的产品，以三字码标示，第一位码R 表示10^{-3}，后两位表示阻值的有效数字。 For 0603 size, use three digitals to declare resistance. The first letter 'R' denotes 10^{-3}, The other two digitals declare resistance.	 	068=0R068=0.068 Ω R10=0R100=0.100 Ω
※ 0603 以上尺寸的产品，以四字码标示，第一位码R 表示10^{-3}，后三位表示阻值的有效数字。 The size larger than 0603, use four digitals to declare resistance. The first letter 'R' denotes 10^{-3}, The other three digitals declare resistance.	 	R068=0R068=0.068 Ω R100=0R100=0.100 Ω

R-value	0805 以上 Code	0603Code	R-value	0805 以上 Code	0603Code	R-value	0805 以上 Code	0603Code
10m Ω	R010	010	100m Ω	R100	R10	360m Ω	R360	R36
15m Ω	R015	015	110m Ω	R110	R11	390m Ω	R390	R39
20m Ω	R020	020	120m Ω	R120	R12	400m Ω	R400	R40
25m Ω	R025	025	130m Ω	R130	R13	430m Ω	R430	R43
30m Ω	R030	030	150m Ω	R150	R15	470m Ω	R470	R47
40m Ω	R040	040	160m Ω	R160	R16	500m Ω	R500	R50
50m Ω	R050	050	180m Ω	R180	R18	510m Ω	R510	R51
56m Ω	R056	056	200m Ω	R200	R20	560m Ω	R560	R56
62m Ω	R062	062	220m Ω	R220	R22	620m Ω	R620	R62
68m Ω	R068	068	240m Ω	R240	R24	680m Ω	R680	R68
75m Ω	R075	075	270m Ω	R270	R27	750m Ω	R750	R75
82m Ω	R082	082	300m Ω	R300	R30	820m Ω	R820	R82
91m Ω	R091	091	330m Ω	R330	R33	910m Ω	R910	R91

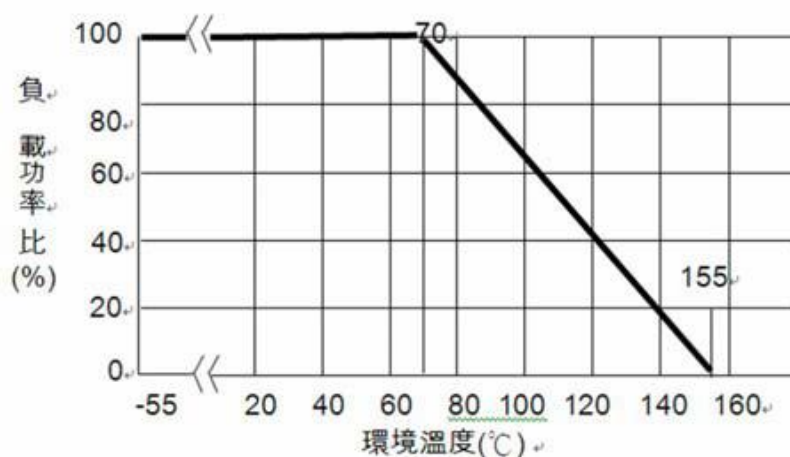
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4.尺寸 (dimension) :

尺寸 dimension						单位 (unit) : mm
	L	W	T	E	e	
型别 (Type)	L	W	T	E	e	
UR0402	1.00±0.05	0.50±0.05	0.30±0.05	0.15±0.10	0.20±0.10	
UR0603	1.60±0.10	0.80±0.10	0.45±0.10	0.25±0.20	0.30±0.20	
UR0805	2.00±0.15	1.25±0.15	0.50±0.10	0.35±0.20	0.40±0.20	
UR1206	3.10±0.15	1.60±0.15	0.55±0.10	0.45±0.25	0.40±0.25	
UR2010	5.00±0.20	2.50±0.20	0.55±0.15	0.65±0.25	0.50±0.25	
UR2512	6.25±0.20	3.10±0.20	0.55±0.15	0.85±0.25	0.95±0.25	

5. 功率衰减曲线 (Derating Curve) :



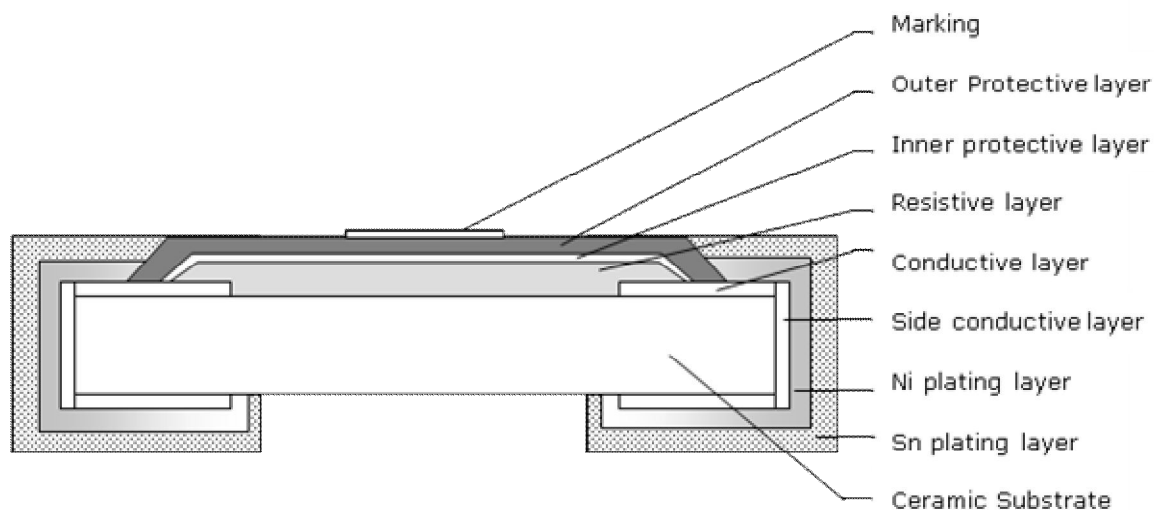
工作温度范围 (Operating Temperature Range) : -55°C~+155°C;

储存条件 (storage condition) : 5~30°C, 30~75%RH.

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6.电阻结构（Construction）：



No.	结构 construction	主要材料 Major material
1	陶瓷基板 Ceramic substrate	三氧化二铝 Al2O3
2	银电极 Conductive layer	银 Ag
3	侧电极 Side conductive layer	镍铬合金 NiCr
4	阻体层 Resistive layer	氧化钌+玻璃 RuO2 + glass
5	内保护层 Inner protective layer	玻璃 Glass
6	外保护层 Outer Protective layer	环氧树脂 Epoxy
7	文字 Marking	环氧树脂 Epoxy
8	镍电极 Ni plating layer	镍 Ni
9	锡电极 Sn plating layer	雾锡 Matte Tin

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7. 阻值范围 (resistance range) :

型别 Type	阻值范围 Resistance Range	溫度係數 T.C.R (PPM/°C)	公差 Tolerance
UR0402	0.024Ω~0.027Ω	±500	±1%(F) ±5%(J)
	0.030Ω~0.910Ω	±100	
UR0603	0.010Ω~0.027Ω	±300	
	0.030Ω~0.043Ω	±200	
	0.047Ω~0.910Ω	±100	
UR0805	0.010Ω~0.043Ω	±250	
	0.047Ω~0.910Ω	±100	
UR1206	0.010Ω~0.043Ω	±200	
	0.047Ω~0.910Ω	±100	
UR2010	0.010Ω~0.030Ω	±250	
	0.033Ω~0.910Ω	±100	
UR2512	0.010Ω~0.030Ω	±250	
	0.033Ω~0.910Ω	±100	

8. 电气特性(Electrical Characteristics):

型别 Type	UR0402	UR0603	UR0805		UR1206	UR2010	UR2512
额定功率 Rated power	1/8W	1/4W	1/4W	1/3W	1/2W	3/4W	1W
最大工作電流 Max Working Current	2.28A	5.00A	5.00A	5.77A	7.07A	8.66A	10.00A
最大過負荷電流 Max Overload Current	5.71A	12.50A	12.50A	14.43A	17.68A	21.65A	25.00A
绝缘耐压 Dielectric Withstanding Voltage	150V	220V	430V	430V	570V	710V	710V

备注 (remark) :

※ 额定电流计算公式 (The rated current is calculated by the following formula) :

$$I = \sqrt{P/R}$$

I : 额定电流 (Rated current) (A)

P : 额定功率 (Rated Power) (W)

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R：电阻阻值（Resistance ）（ohm）

※ 如果计算出的电流超过此型别的最大工作电流，则此型别的最大工作电流为此电阻的额定电流。

In case the value calculated by the formula exceed the maximum working current as above table 8, the maximum working current shall be regarded as rated current.

9. 性能(Performance Specifications)

内容 Item	规格 Specification Limits	测试方法 Test Methods
温度系数 Temperature Coefficient	参照 7 项对应表	JIS C 5201 4.8
焊锡性 Solderability	最少 95%面积上锡(Min 95% coverage)	JIS C 5201 4.17
绝缘电阻 Insulation resistance	>10GΩ	JIS C 5201 4.6
绝缘耐压 Dielectric withstanding voltage	无击穿、飞弧及可见机械性损伤 No evidence of flashover, mechanical damage arcing or insulation breakdown	JIS C 5201 4.7
短时间过负荷 Short-time overload	±(2.0% +0.001 Ω) Max (最大)	JIS C 5201 4.13
端子弯曲 Terminal bending	±(2.0% +0.001 Ω) Max (最大)	JIS C 5201 4.33
抗焊锡热 Resist to soldering heat	±(1.0% +0.001 Ω) Max (最大)	JIS C 5201 4.18
负荷寿命 Load life	±(3.0% +0.001 Ω) Max (最大)	JIS C 5201 4.25.1
耐湿特性 Humidity	±(2.0% +0.001 Ω) Max (最大)	JIS C 5201 4.24
温度循环 Temperature cycling	±(2.0% +0.001 Ω) Max (最大)	JIS C 5201 4.19
温湿循环 Moisture Resistance	±(2.0% +0.001 Ω) Max (最大)	MIL-STD-202 METHOD 106
高温储存 High Temperature Exposure(Storage)	±(1.0% +0.001 Ω) Max (最大)	MIL-STD-202 METHOD 108

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10. 包装规格 (Tapping Specification)

10.1 卷盘尺寸 (reel dimension)

尺寸 Dimensions		A	B	C	F	W
UR0402 UR0603 UR0805 UR1206	mm	178±2.0	60.0±1.0	13.5±0.5	11.4±0.1	9.00±0.3
	Inch	7.008±0.079	2.362±0.039	0.531±0.020	0.449±0.039	0.354±0.012
UR2010 UR2512	mm	178±2.0	60.0±1.0	13.5±0.5	15.4±1.0	13.0±0.3
	Inch	7.008±0.079	2.362±0.039	0.531±0.020	0.606±0.039	0.512±0.012

※ 备注 (Remark) : (1) 0402 每卷 10,000 pcs

0402 Quantity per Reel 10,000 pcs/Reel

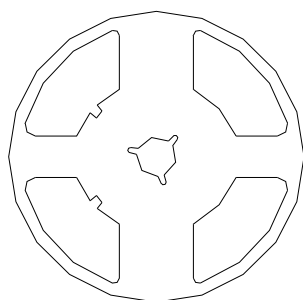
(2) 2010/2512 每卷 4,000 pcs

2010/2512 Quantity per Reel 4,000 pcs/Reel

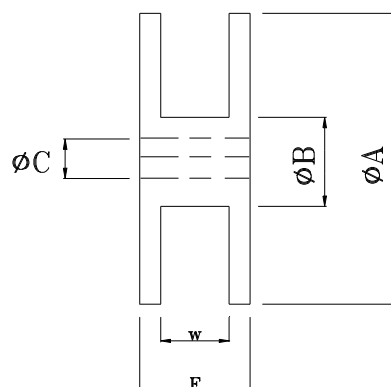
(3) 0603/0805/1206/每卷 5,000pcs

0603/0805/1206/ Quantity per Reel 5,000 pcs/Reel

Reel



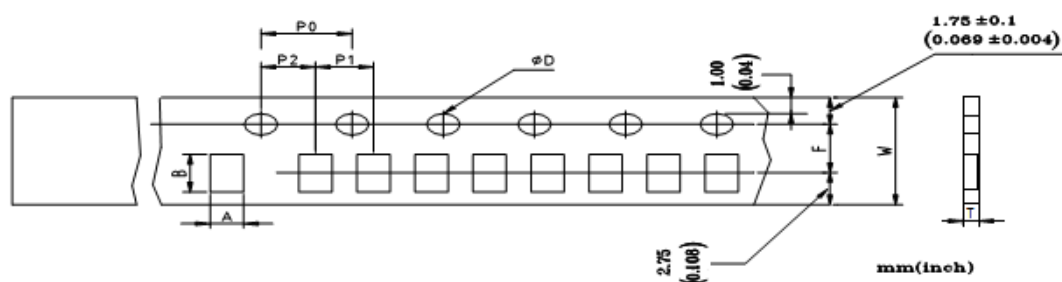
Standard Quantity per Reel
5,000 pcs/Reel



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10.2 包装尺寸 (packing dimension)



Unit: mm

Dimensions	A	B	D	F	P0	P1	P2	W	T
UR0402	0.65±0.10	1.15±0.10	1.50± $\begin{smallmatrix} 0.1 \\ 0.0 \end{smallmatrix}$	3.50±0.05	4.00±0.10	2.00±0.10	2.00±0.05	8.00±0.20	0.42±0.07
UR0603	1.10±0.10	1.90±0.10	1.50± $\begin{smallmatrix} 0.1 \\ 0.0 \end{smallmatrix}$	3.50±0.05	4.00±0.10	4.00±0.10	2.00±0.05	8.00±0.20	0.60±0.07
UR0805	1.65±0.20	2.40±0.20	1.50± $\begin{smallmatrix} 0.1 \\ 0.0 \end{smallmatrix}$	3.50±0.05	4.00±0.10	4.00±0.10	2.00±0.05	8.00±0.20	0.75±0.07
UR1206	2.00±0.20	3.60±0.20	1.50± $\begin{smallmatrix} 0.1 \\ 0.0 \end{smallmatrix}$	3.50±0.05	4.00±0.10	4.00±0.10	2.00±0.05	8.00±0.20	0.75±0.07
UR2010	2.90±0.10	5.30±0.10	1.50± $\begin{smallmatrix} 0.1 \\ 0.0 \end{smallmatrix}$	5.50±0.05	4.00±0.10	4.00±0.10	2.00±0.05	12.0±0.10	1.0±0.07
UR2512	3.40±0.10	6.60±0.10	1.50± $\begin{smallmatrix} 0.1 \\ 0.0 \end{smallmatrix}$	5.50±0.05	4.00±0.10	4.00±0.10	2.00±0.05	12.0±0.10	1.0±0.07