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IATF 16949 : 2016

Date: Sept. 14, 2022

Re: Part No Explanation

Dear Valued Customers,

We thank you for your continuous patronage of **ROYALOHM** resistors.

UNI-ROYAL Group is one of the pioneers in chip resistor production for more than 20 yrs now.

Early 1990's, chip resistors have standard power rating corresponding to specific chip sizes.

Some customers refer to chip sizes & some refer to power rating when ordering.

In year 2000, UNI-ROYAL's upgraded chip resistors power rating, thus resulting to same power rating in different chip sizes. We use "-S" in power rating to differentiate between same power rating but different chip sizes.

As Chip Resistors become widely used, customers mostly use chip sizes (ex. 0402, 0603, etc....) when ordering. Since we still have customers with series approval of "-S", we maintain this part no.

Subsequent approvals/new customers, use the upgraded power rating without "-S".

We hereby declare:

Standard Thick Film Chip Resistors				
Size	**Std**	**Upgraded**	**5th,6th digits**	**Remark**
0402	1/16W	1/16W	WG	all produced in 1/16W **(WG)**
0603	1/16W	1/10W-S	WG,WA,SA	all produced in 1/10W **(WA)**
0805	1/10W	1/8W-S	WA, W8, S8	all produced in 1/8W **(W8)**
1206	1/8W	1/4W-S	W8, W4, S4	all produced in 1/4W **(W4)**
1210	1/4W	1/2W-SS	W4, S3, U2	all produced in 1/2W **(W2)**
2010	1/2W	3/4W-S	W2, 07	all produced in 3/4W **(07)**
2512	1W	1W	1W	all produced in 1W **(1W)**

All technical/electrical performance in "-S" & "W" are the same and is in compliance with the catalog specifications. Should you have more clarifications, please feel free to let us know.

Kind Regards,

Bea Dy – Sr. Global Sales Director – UR Group

Royal Electronic Factory (Thailand) Co., Ltd

Thick Film Chip Resistors

Performance Specification

Temperature Coefficient	0Ω1 ~ 0Ω99	±800PPM/°C
	1Ω ~ 10Ω	±400PPM/°C
	10.1Ω ~ 100Ω	±200PPM/°C
	>100Ω	±100PPM/°C (0201: >100Ω ≤ ±200PPM/°C)
Short Time Overload	±5%: ± (2.0% + 0.1Ω)Max	
	±1%: ± (1.0% + 0.1Ω)Max	
Insulation Resistance	Min. 1,000 Mega Ohm	
Dieiectric Withstanding Voltage	No evidence of flashover, mechanical damage, arcing or insulation breakdown.	
Terminal Bending	±(1.0% + 0.05Ω)Max	
Soldering Heat	±(1.0% + 0.05Ω)Max	
Solderability	Min. 95% coverage.	
Temperature Cycling	±5% : ±(1.0% + 0.05Ω)Max	
	±1% : ±(0.5% + 0.05Ω)Max	
Humidity (Steady State)	±5% : ±(3.0% + 0.1Ω)Max	
	±1% : ±(0.5% + 0.1 Ω)Max	
Load Life in Humidity	±5% : ±(3.0% + 0.1Ω)Max	
	±1% : ±(1.0% + 0.1 Ω)Max	
Load Life	±5% : ±(3.0% + 0.1Ω)Max	
	±1% : ±(1.0% + 0.1Ω)Max	

Ordering Procedure: Ex.: 1206, 1/4W-S, +/-5%, 10Ω T/R-5000

1	2	0	6	S	4	J	0	1	0	0	T	5	E

Resistor Size:
0201, 0402, 0603, 0805, 1206,
1210, 1812, 2010, 2512
Wide Terminals:
0508, 0612, 1020, 1218, 1225

Wattage:
Normal size: WH=1/32W, WM=1/20W, WG=1/16W, WA=1/10W, W8=1/8W, W4=1/4W, W2=1/2W, 1W=1W
Small size: SA=1/10W-S, S8=1/8W-S, S4=1/4W-S, S3=1/3W-S, 07=3/4W-S, U2=1/2W-SS
Applicable for Wide Terminal only: WJ=1.5W, 2W. 3W

Tolerance:
D = ±0.5%
F = ±1%
G = ±2%
J = ±5%

Resistance Value:
- E-24 series:
  1st digit is "0"
  2nd & 3rd digits are significant figures of the resistance
  4th indicates the number of zeros
- E-96 series:
  1st to 3rd digits are significant figures of the resistance
  4th digit indicates the number of zeros.
  "J" ~0.1, "K" ~ 0.01, "L" ~ 0.001
  Ex. 012J ~1Ω2, 226K ~ 2Ω26
- Jumper : use "0" for 1st to 4th digits

Packing Type:
T = Tape/Reel

Packing Qty:
1 = 1,000 pcs. 2 = 2,000 pcs.
4 = 4,000 pcs. 5 = 5,000 pcs.
A = 500 pcs. C = 10,000 pcs.
D = 20,000 pcs. E = 15,000 pcs.
F = 40,000 pcs. G = 60,000 pcs.

Special Feature:
E = Lead (Pb) Free Plating Type/ RoHS compliant

Note :
1.) Special resistance value, tolerance, T.C.R. requirement is available on a case-to-case basis.
2.) Standard reel size = 7"
3.) 4", 10", & 13" reels are available upon request

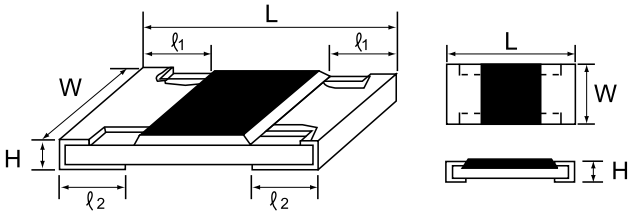
RoHS Compliant

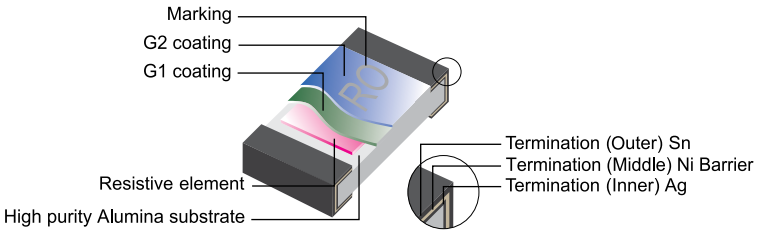
Thick Film Chip Resistors

Features

- Small size and light weight
- Suitable for both wave and reflow soldering
- Reduction of assembly costs

Dimension



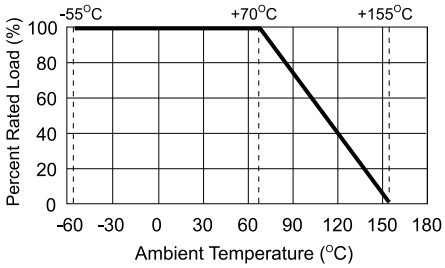


Type	Power Rating at 70°C	Max Working Voltage/Current	Max Overload Voltage/Current	Dielectric Withstanding Voltage	Tolerance %	Resistance Range	Dimension (mm) L	W	H	ℓ1	ℓ2
0201 (0603)	1/20W	0.5A	1A	-	Jumper	<50mΩ	0.60±0.03	0.30±0.03	0.23±0.03	0.10±0.05	0.15±0.05
		25V	50V	-	±1% ±2% ±5%	1Ω~ 10MΩ 1Ω~ 10MΩ 1Ω~ 10MΩ					
0402 (1005)	1/16W	1A	2A		Jumper	<50mΩ	1.00±0.10	0.50±0.05	0.35±0.05	0.20±0.10	0.25±0.10
		50V	100V	100V	±1% ±2% ±5%	1Ω~ 10MΩ 1Ω~ 10MΩ 1Ω~ 10MΩ					
0603 (1608)	1/10W-S 1/16W	1A	2A		Jumper	<50mΩ	1.60±0.10	0.80 +0.15 -0.10	0.45±0.10	0.30±0.20	0.30±0.20
		75V	150V	300V	±1% ±2% ±5%	1Ω~ 10MΩ 1Ω~ 10MΩ 1Ω~ 10MΩ					
0805 (2012)	1/8W-S 1/10W	2A	5A		Jumper	<50mΩ	2.00±0.15	1.25 +0.15 -0.10	0.55±0.10	0.40±0.20	0.40±0.20
		150V	300V	500V	±1% ±2% ±5%	1Ω~ 10MΩ 1Ω~ 10MΩ 1Ω~ 10MΩ					
1206 (3216)	1/4W-S 1/8W	2A	10A		Jumper	<50mΩ	3.10±0.15	1.55 +0.15 -0.10	0.55±0.10	0.45±0.20	0.45±0.20
		200V	400V	500V	±1% ±2% ±5%	1Ω~ 10MΩ 1Ω~ 10MΩ 1Ω~ 10MΩ					
1210 (3225)	1/2W-SS 1/3W-S 1/4W	2A	10A		Jumper	<50mΩ	3.10±0.10	2.60±0.15	0.55±0.10	0.50±0.25	0.50±0.20
		200V	500V	500V	±1% ±2% ±5%	1Ω~ 10MΩ 1Ω~ 10MΩ 1Ω~ 10MΩ					
1812	1/2W 3/4W-S	2A	10A		Jumper	<50mΩ	4.50±0.20	3.20±0.20	0.55±0.20	0.50±0.20	0.50±0.20
		200V	500V	500V	±1% ±5%	1Ω~ 10MΩ 1Ω~ 10MΩ					
2010 (5025)	3/4W-S 1/2W	2A	10A		Jumper	<50mΩ	5.00±0.10	2.50±0.15	0.55±0.10	0.60±0.25	0.50±0.20
		200V	500V	500V	±1% ±2% ±5%	1Ω~ 10MΩ 1Ω~ 10MΩ 1Ω~ 10MΩ					
2512 (6432)	1W	2A	10A		Jumper	<50mΩ	6.35±0.10	3.20±0.15	0.55±0.10	0.60±0.25	0.50±0.20
		200V	500V	500V	±1% ±2% ±5%	1Ω~ 10MΩ 1Ω~ 10MΩ 1Ω~ 10MΩ					

Note:

1.) Metric information inside parenthesis.
2.) Standard Operating Temp (°C): -55~ +155
3.) Standard: E-96 series: 0.5%, 1%
E-24 series: 2%, 5%
4.) Low resistance range (0.1Ω ~ 0.99Ω) is also available for 0402, 0603, 0805, 1206, 1210, 2010 and 2512

Derating Curve



RoHS Compliant