

# Thick Film Automotive Chip Resistors

- 1005(0402), 1608(0603), 2012(0805), 3216(1206),



## ■ Features

- AEC-Q200 qualified
- Lead free terminal with matt Tin
- RoHS Compliant.

## ■ Part Number System

RCA	
Type (Series)	
RCA	Thick Film Automotive chip resistor

0603	
Size : mm (inch)	
1005	1.0×0.5mm (0402)
1608	1.6×0.8mm (0603)
2012	2.0×1.2mm (0805)
3216	3.2×1.6mm (1206)

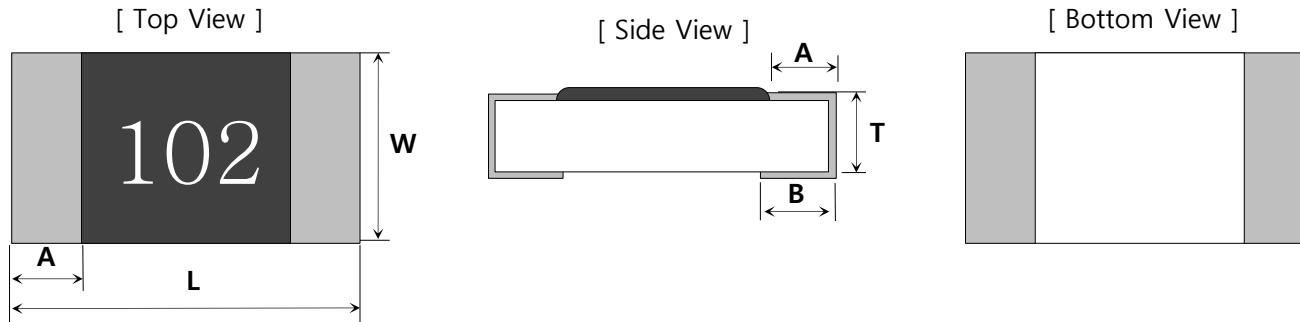
F	
Tolerance	
F	±1.0%
J	±5.0%

\* Jumper : 'J'

2552	
Resistance Value	
- 3-digit code System (E-24 series)	
- 4-digit code System (E-96 series)	
- Jumper : '000'	
- 2552 : 25.5KΩ	

CS	
Packing Type	
CS	7" reel
ES	10" reel
AS	13" reel

## ■ Structure and Dimensions



[ Unit : mm ]

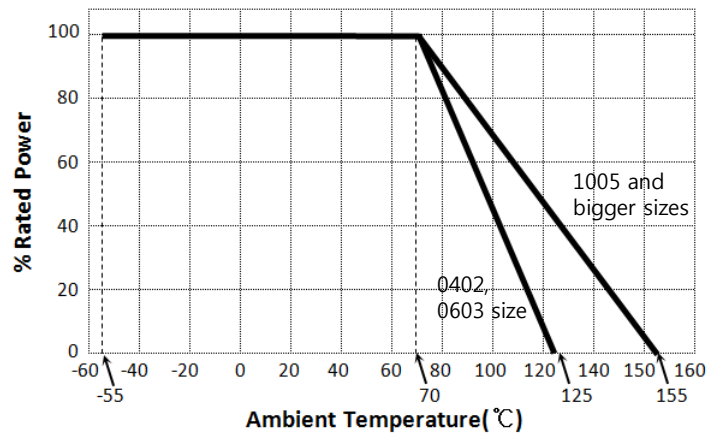
Size(mil)	L	W	T	A	B	Unit Weight
RCA1005(0402)	1.00±0.05	0.50±0.05	0.35±0.05	0.20±0.10	0.25±0.10	0.6mg
RCA1608(0603)	1.60±0.10	0.80±0.10	0.45±0.10	0.30±0.20	0.30±0.10	2.1mg
RCA2012(0805)	2.00±0.15	1.25±0.15	0.50±0.10	0.40±0.20	0.35±0.20	4.9mg
RCA3216(1206)	3.10±0.15	1.60±0.15	0.55±0.10	0.45±0.20	0.40±0.20	9.5mg

## Applications and Ratings

Type	Size (mil)	Rated Power [W]	Rated Voltage [V]	Max Working Voltage [V]	Tolerance [%]	Resistance Range [Ω]	T.C.R [ppm/°C]	Working Temp. [°C]	Moisture Level
RCA1005	0402	1/16	$\sqrt{P \times R}$ P : Rated Power(W) R : Resistance(Ω)	50	±1(F) ±5(J)	1 ~ 10M	1~99Ω : ±300 100~10MΩ : ±100	-55 ~ 155	Level 1
RCA1608	0603	1/10		50					
RCA2012	0805	1/8		150					
RCA3216	1206	1/4		200					

• Please contact our sales representatives or engineers for other specifications

## Power Derating Curve



## Jumper Ratings

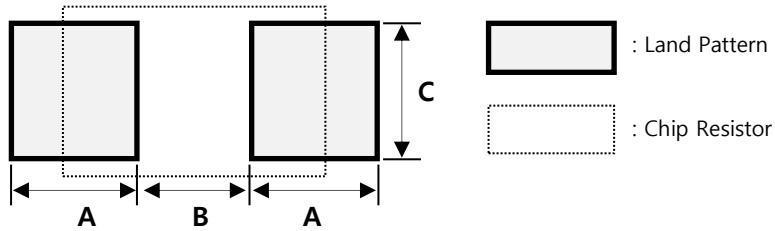
Type	Rated Current [A]	Max Overload Current [A]	Resistance [Ω]	Working Temp.[°C]
1005, 1608	1	2	0.05max	-55 ~ 155
2012 and bigger sizes	2	4		

## Rated Voltage

$$V = \sqrt{P \times R}$$

E : Rated Voltage (V)  
 P : Rated Power (W)  
 R : Resistance Value (Ω)

## ■ Standard Soldering Pad Dimensions



[ Unit : mm ]

Size(mil)	Reflow Soldering			
	A	B	2A + B	C
RCA1005(0402)	0.60	0.50	1.70	0.50
RCA1608(0603)	0.80	0.80	2.40	0.80
RCA2012(0805)	0.90	1.40	3.20	1.20
RCA3216(1206)	1.30	1.80	4.40	1.50

## ■ Performance Characteristics

Test Item	AEC-Q200 Test No.	Test Standard	Test Condition	Requirements	
				Resistor	Jumper
High Temp. Exposure	3	MIL-STD-202 Method 108	Unpowered 125°C 1000hr	$\pm(1\%+0.1\Omega)$	< 50m $\Omega$
Temperature Cycling	4	JESD22 Method JA-104	1000 cycle, -55~125°C 30min dwell time, 1min transition time	$\pm(1\%+0.1\Omega)$	< 50m $\Omega$
Biased Humidity	7	MIL-STD-202 Method 103	10% of rated power 85°C/85%RH, 1000hr	$\pm(3\%+0.1\Omega)$	< 100m $\Omega$
Operational Life	8	MIL-STD-202 Method 108	Rated Power 125°C, 1000hrs 1.5hr ON, 0.5hr OFF	$\pm(3\%+0.1\Omega)$	< 100m $\Omega$
Resistance to Soldering Heat	15	MIL-STD-202 Method 210	Reflow soldering 260 $\pm$ 5°C, 10 sec max.	$\pm(1\%+0.1\Omega)$	< 50m $\Omega$
ESD	17	AEC-Q200-002 ISO/DIS 10605	150pF,2k $\Omega$ ,DC 0.5~8kV & AD 12~25kV	$\pm(3\%+0.1\Omega)$	< 50m $\Omega$
Solderability	18	J-STD-002	Method B, Dry heat @235°C 5sec Method B, Steam aging 8hrs, @215°C, 5sec Method D, Steam aging 8hrs, @260°C, 30sec	$\geq 95\%$ covered	$\geq 95\%$ covered
Board Flex	21	AEC-Q200-005	Deflection point=2mm, 1mm/sec, 60sec	$\pm(1\%+0.1\Omega)$	< 50m $\Omega$
Short Time Overload		JIS C 5201-1 4.13 IEC 60115-1 4.13	2.5 times of rated voltage or maximum overload voltage for 5 sec.	$\pm(1\%+0.1\Omega)$	< 50m $\Omega$

※ NOTICE :All specifications are subject to change without previous notice. Please contact with product representatives or engineers to check specifications.

 Product specifications included in the specifications are effective as of May 01, 2015.

Please be advised that they are standard product specifications for reference only.

We may change, modify or discontinue the product specifications without notice at any time.

So, you need to approve the product specifications before placing an order.

Should you have any question regarding the product specifications,

please contact our sales personnel or application engineers.

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