

# RCS2012F511CS Datasheet

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DiGi Electronics Part Number	RCS2012F511CS-DG
Manufacturer	<a href="#">Samsung Electro-Mechanics</a>
Manufacturer Product Number	RCS2012F511CS
Description	RES 510 OHM 1% 1/8W 0805
Detailed Description	510 Ohms ±1% 0.125W, 1/8W Chip Resistor 0805 (2012 Metric) Anti-Sulfur, Moisture Resistant Thick Film

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## Purchase and inquiry

Manufacturer Product Number:

RCS2012F511CS

Series:

RCS

Resistance:

510 Ohms

Power (Watts):

0.125W, 1/8W

Features:

Anti-Sulfur, Moisture Resistant

Operating Temperature:

-55°C ~ 155°C

Supplier Device Package:

0805

Height - Seated (Max):

0.026" (0.66mm)

Failure Rate:

-

Manufacturer:

Samsung Electro-Mechanics

Product Status:

Active

Tolerance:

±1%

Composition:

Thick Film

Temperature Coefficient:

±100ppm/°C

Package / Case:

0805 (2012 Metric)

Size / Dimension:

0.079" L x 0.049" W (2.00mm x 1.25mm)

Number of Terminations:

2

## Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Unaffected

HTSUS:

8533.21.0030

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99

# Anti-Sulfur Thick Film Chip Resistors

- 0603(0201), 1005(0402), 1608(0603), 2012(0805), 3216(1206),  
3225(1210), 5025(2010), 6432(2512)

## ■ Features

- Small, thin and lightweight
- High reliability
- Stable in Sulfur Atmosphere (Anti-sulfur)
- Suitable size and package for surface mount assembly
- RoHS Compliant.



## ■ Part Number System

RCS	
Type	
RCS	Anti-Sulfur chip resistor

1005	
Size : mm (inch)	
0603	0.6×0.3mm (0201)
1005	1.0×0.5mm (0402)
1608	1.6×0.8mm (0603)
2012	2.0×1.2mm (0805)
3216	3.2×1.6mm (1206)
3225	3.2×2.5mm (1210)
5025	5.0×2.5mm (2010)
6432	6.4×3.2mm (2512)

J	
Tolerance	
F	±1%
G	±2%
J	±5%

\* Jumper : 'J'

150	
Resistance Value	
- 3-digit coding System (E-24 series)	
- 4-digit coding System (E-96 series)	
- Jumper : '000'	

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
RCS0603(0201)	0.60±0.03	0.30±0.03	0.23±0.03	0.15±0.05	0.15±0.05	0.15mg
RCS1005(0402)	1.00±0.05	0.50±0.05	0.35±0.05	0.20±0.10	0.25±0.10	0.6mg
RCS1608(0603)	1.60±0.10	0.80±0.10	0.45±0.10	0.30±0.20	0.35±0.10	2.1mg
RCS2012(0805)	2.00±0.20	1.25±0.15	0.55±0.10	0.40±0.20	0.35±0.20	4.9mg
RCS3216(1206)	3.20±0.20	1.60±0.15	0.55±0.10	0.45±0.20	0.40±0.20	9.5mg
RCS3225(1210)	3.20±0.20	2.55±0.20	0.55±0.10	0.45±0.20	0.40±0.20	16mg
RCS5025(2010)	5.00±0.20	2.50±0.20	0.55±0.10	0.60±0.20	0.60±0.20	26mg
RCS6432(2512)	6.30±0.20	3.20±0.20	0.55±0.10	0.60±0.20	0.60±0.20	41mg

### Applications and Ratings

Type	Size (mil)	Rated Power [W]	Rated Voltage [V]	Max Working Voltage [V]	Tolerance [%]	Resistance Range [ $\Omega$ ]	T.C.R [ppm/ $^{\circ}$ C]	Working Temp. [ $^{\circ}$ C]	Moisture Level
RCS0603	0201	1/20	$\sqrt{P \times R}$ P : Rated Power(W) R : Resistance( $\Omega$ )	25	$\pm 1$ (F) $\pm 5$ (J)	1 ~ 10M	1~9.9 $\Omega$ : $\pm 300$ 10~10M $\Omega$ : $\pm 250$	-55~125	Level 1
RCS1005	0402	1/16		50	$\pm 0.5$ (D) $\pm 1$ (F) $\pm 5$ (J)	1 ~ 10M	1~9.9 $\Omega$ : $\pm 300$ 10~10M $\Omega$ : $\pm 100$	-55 ~ 155	
RCS1608	0603	1/10		50					
RCS2012	0805	1/8		150					
RCS3216	1206	1/4		200					
RCS3225	1210	1/3		200					
RCS5025	2010	2/3		200					
RCS6432	2512	1		200					

• Please contact our sales representatives or engineers for other specifications

### Power Derating Curve



### Jumper Ratings

Type	Rated Current (A)	Max Overload Current (A)
0603	0.5	1
1005, 1608	1	2
2012, 3216, 3225, 5025, 6432	2	4

### Rated Voltage

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

E : Rated Voltage (V)  
 P : Rated Power (W)  
 R : Resistance Value ( $\Omega$ )

## ■ Standard Soldering Pad Dimensions



[ Unit : mm ]

Size(mil)	Reflow Soldering			
	A	B	2A + B	C
RCS0603(0201)	0.37	0.28	1.02	0.29
RCS1005(0402)	0.60	0.50	1.70	0.50
RCS1608(0603)	0.80	0.80	2.40	0.80
RCS2012(0805)	0.90	1.40	3.20	1.20
RCS3216(1206)	1.30	1.80	4.40	1.50
RCS3225(1210)	1.30	1.80	4.40	2.40
RCS5025(2010)	1.40	3.30	6.10	2.40
RCS6432(2512)	1.40	4.60	7.40	3.00

## ■ Performance Characteristics

ITEM	Requirements Specification	Test Conditions (JIS C 5201-1)
Resistance	Within the specified tolerance	JIS C 5201-1 4.5
Temp. Characteristic	Within the specified T.C.R	JIS C 5201-1 4.8 +20°C → -55°C / +20°C → +125°C
Short time Overload	$\Delta R < \pm 1\% + 0.1\Omega$	JIS C 5201-1 4.13 Rated Voltage×2.5, 5sec
Solderability	Immersed over 95%	JIS C 5201-1 4.17 Rosin Ethanol (25%WT) 245±5/-0°C, 2±0.5 sec
Resistance to Solder Heat	$\Delta R < \pm 1\% + 0.1\Omega$	JIS C 5201-1 4.18 260±5°C, 10±1 sec
Temp. Cycle	$\Delta R < \pm 1\% + 0.1\Omega$	JIS C 5201-1 4.19 -55°C ↔ +125°C, 100 cycle
Moisture Resistance	$\Delta R < \pm 3\% + 0.1\Omega$	JIS C 5201-1 4.24 40±2°C, 90~95%RH, 1,000 <sup>+48</sup> hours
Load Life	$\Delta R < \pm 3\% + 0.1\Omega$	JIS C 5201-1 4.25 Rated Voltage, 70±2°C, 1,000 <sup>+48</sup> hours 90mins ON, 30mins OFF
High Temp. Exposure	$\Delta R < \pm 3\% + 0.1\Omega$	JIS C 5201-1 4.25.3 155±2°C, 1,000 <sup>+48</sup> hours
Flower of Sulfur (FOS)	$\Delta R < \pm 1\% + 0.1\Omega$	105°C, FoS, 720 <sup>+2</sup> hours

※ The reliability test condition can be replaced by the corresponding accelerated test condition.

 Product specifications included in the specifications are effective as of March 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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