

RC2012F183CS Datasheet



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| | |
|------------------------------|---|
| DiGi Electronics Part Number | RC2012F183CS-DG |
| Manufacturer | Samsung Electro-Mechanics |
| Manufacturer Product Number | RC2012F183CS |
| Description | RES SMD 18K OHM 1% 1/8W 0805 |
| Detailed Description | 18 kOhms \pm 1% 0.125W, 1/8W Chip Resistor 0805 (2012 Metric) Moisture Resistant Thick Film |

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Purchase and inquiry

Manufacturer Product Number:

RC2012F183CS

Series:

RC

Resistance:

18 kOhms

Power (Watts):

0.125W, 1/8W

Features:

Moisture Resistant

Operating Temperature:

-55°C ~ 155°C

Supplier Device Package:

0805

Height - Seated (Max):

0.026" (0.65mm)

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

Thick Film General Chip Resistors

- 0402(01005), 0603(0201), 1005(0402), 1608(0603), 2012(0805), 3216(1206), 3225(1210), 5025(2010), 6432(2512)

■ Features

- Small, thin and lightweight
- High reliability
- Applicable Both flow and reflow soldering.
- Suitable size and package for surface mount assembly
- RoHS Compliant.



■ Part Number System

| RC | |
|---------------|-------------------------------|
| Type (Series) | |
| RC | General purpose chip resistor |

| 0603 | |
|------------------|-------------------|
| Size : mm (inch) | |
| 0402 | 0.4×0.2mm (01005) |
| 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) |

| F | |
|-----------|-------|
| Tolerance | |
| D | ±0.5% |
| F | ±1.0% |
| G | ±2.0% |
| 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 |
|---------------|-----------|-----------|-----------|-----------|-----------|-------------|
| RC0402(01005) | 0.40±0.02 | 0.20±0.02 | 0.13±0.02 | 0.10±0.03 | 0.10±0.03 | 0.04mg |
| RC0603(0201) | 0.60±0.03 | 0.30±0.03 | 0.23±0.03 | 0.10±0.05 | 0.15±0.05 | 0.15mg |
| RC1005(0402) | 1.00±0.05 | 0.50±0.05 | 0.35±0.05 | 0.20±0.10 | 0.25±0.10 | 0.6mg |
| RC1608(0603) | 1.60±0.10 | 0.80±0.10 | 0.45±0.10 | 0.30±0.20 | 0.35±0.10 | 2.1mg |
| RC2012(0805) | 2.00±0.20 | 1.25±0.15 | 0.55±0.10 | 0.40±0.20 | 0.35±0.20 | 4.9mg |
| RC3216(1206) | 3.20±0.20 | 1.60±0.15 | 0.55±0.10 | 0.45±0.20 | 0.40±0.20 | 9.5mg |
| RC3225(1210) | 3.20±0.20 | 2.55±0.20 | 0.55±0.10 | 0.45±0.20 | 0.40±0.20 | 16mg |
| RC5025(2010) | 5.00±0.20 | 2.50±0.20 | 0.55±0.10 | 0.60±0.20 | 0.60±0.20 | 26mg |
| RC6432(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 [Ω] | T.C.R [ppm/°C] | Working Temp. [°C] | Moisture Level |
|--------|------------|-----------------|--|-------------------------|----------------|---------------------------------|---------------------------------|--------------------|----------------|
| RC0402 | 01005 | 1/32 | $\sqrt{P \times R}$ P : Rated Power(W) R : Resistance(Ω) | 15 | ±1(F) ±5(J) | 1 ~ 1M | 1~9.9Ω : ± 300 10~1MΩ ± 250 | -55~125 | Level 1 |
| RC0603 | 0201 | 1/20 | | 25 | | 1 ~ 10M | 1~9.9Ω : ±300 10~10MΩ : ±250 | | |
| RC1005 | 0402 | 1/16 | | 50 | 1 ~ 10M | 1~9.9Ω : ±300 10~10MΩ : ±100 | -55 ~ 155 | | |
| RC1608 | 0603 | 1/10 | | 50 | | | | | |
| RC2012 | 0805 | 1/8 | | 150 | | | | | |
| RC3216 | 1206 | 1/4 | | 200 | | | | | |
| RC3225 | 1210 | 1/3 | | 200 | | | | | |
| RC5025 | 2010 | 2/3 | | 200 | | | | | |
| RC6432 | 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] | Resistance [Ω] | Working Temp.[°C] |
|-----------------------|-------------------|--------------------------|----------------|-------------------|
| 0402, 0603 | 0.5 | 1 | 0.05max | -55 ~ 125 |
| 1005, 1608 | 1 | 2 | | -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 |
| RC0402(01005) | 017 | 0.20 | 0.54 | 0.18 |
| RC0603(0201) | 0.37 | 0.28 | 1.02 | 0.29 |
| RC1005(0402) | 0.60 | 0.50 | 1.70 | 0.50 |
| RC1608(0603) | 0.80 | 0.80 | 2.40 | 0.80 |
| RC2012(0805) | 0.90 | 1.40 | 3.20 | 1.20 |
| RC3216(1206) | 1.30 | 1.80 | 4.40 | 1.50 |
| RC3225(1210) | 1.30 | 1.80 | 4.40 | 2.40 |
| RC5025(2010) | 1.40 | 3.30 | 6.10 | 2.40 |
| RC6432(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 |
| Temperature 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 |
| Temperature 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 ⁺⁴⁸ hours 90mins ON, 30mins OFF |
| Load Life | $\Delta R < \pm 3\% + 0.1\Omega$ | JIS C 5201-1 4.25 Rated Voltage, 70±2°C, 1,000 ⁺⁴⁸ 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 ⁺⁴⁸ 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.

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