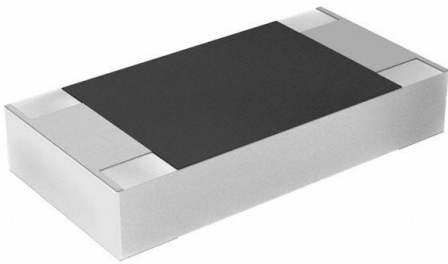


# ASC1206-10KF1 Datasheet

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|                              |   |
|------------------------------|---|
| DiGi Electronics Part Number | ASC1206-10KF1-DG  |
| Manufacturer                 | <a href="#">Riedon</a>  |
| Manufacturer Product Number  | ASC1206-10KF1   |
| Description                  | RES 10 KOHM 1% 1/4W 1206  |
| Detailed Description         | 10 kOhms $\pm$ 1% 0.25W, 1/4W Chip Resistor 1206 (32 16 Metric) Anti-Sulfur, Automotive AEC-Q200, Moisture Resistant Thick Film |

This model ASC1206-10KF1 is available at DiGi Electronics.

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## Purchase and inquiry

Manufacturer Product Number:

ASC1206-10KF1

Series:

ASC

Resistance:

10 kOhms

Power (Watts):

0.25W, 1/4W

Features:

Anti-Sulfur, Automotive AEC-Q200, Moisture Resistant

Operating Temperature:

-55°C ~ 155°C

Supplier Device Package:

1206

Size / Dimension:

0.122" L x 0.061" W (3.10mm x 1.55mm)

Number of Terminations:

2

Manufacturer:

Riedon

Product Status:

Active

Tolerance:

±1%

Composition:

Thick Film

Temperature Coefficient:

±100ppm/°C

Package / Case:

1206 (3216 Metric)

Ratings:

AEC-Q200

Height - Seated (Max):

0.026" (0.65mm)

Failure Rate:

-

## Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Unaffected

HTSUS:

8533.21.0030

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99

# ASC Series

Anti-Sulfur Thick Film Chip Resistor



- Resistances from 1 Ohm to 10M Ohms
- Power Rating 0.05 to 1 Watt
- Resistance Tolerances to  $\pm 0.5\%$
- TCR's to  $\pm 200$  ppm/ $^{\circ}\text{C}$
- Sizes: 0201/0402/0603/0805/1206/2010 /2512
- Moisture Resistant Anti-Sulfur Construction
- AEC-Q200 Certified

| SPECIFICATIONS |                          |                             |                                    |                                   |  |                           |           |                                     |
|----------------|--------------------------|-----------------------------|------------------------------------|-----------------------------------|--|---------------------------|-----------|-------------------------------------|
| Package Size   | Power Rating (W) at 70°C | Operating Temperature Range | MAX Operating Voltage <sup>1</sup> | MAX Overload Voltage <sup>2</sup> | Resistance Range E24 / E96 values  |                           |           | TCR PPM/ $^{\circ}\text{C}$         |
|                |                          |                             |                                    |                                   | $\pm 0.5\%$  | $\pm 1\%$                 | $\pm 5\%$ |                                     |
| 0201           | 0.05                     | -55 to +125                 | 25V                                | 50V                               | -  | 1 $\Omega$ - 10M $\Omega$ |           | $\pm 200$                           |
| 0402           | 0.0625                   | -55 to +155                 | 50V                                | 100V                              | 1 $\Omega$ - 9.76 $\Omega$<br>10 $\Omega$ - 1M $\Omega$<br>1.02M $\Omega$ - 10M $\Omega$ |                           |           | $\pm 200$<br>$\pm 100$<br>$\pm 200$ |
| 0603           | 0.100                    |                             | 50V                                | 100V                              | 1 $\Omega$ - 9.76 $\Omega$<br>10 $\Omega$ - 1M $\Omega$<br>1.02M $\Omega$ - 10M $\Omega$ |                           |           | $\pm 200$<br>$\pm 100$<br>$\pm 200$ |
| 0805           | 0.125                    |                             | 150V                               | 300V                              | 1 $\Omega$ - 9.76 $\Omega$<br>10 $\Omega$ - 1M $\Omega$<br>1.02M $\Omega$ - 10M $\Omega$ |                           |           | $\pm 200$<br>$\pm 100$<br>$\pm 200$ |
| 1206           | 0.250                    |                             | 200V                               | 400V                              | 1 $\Omega$ - 9.76 $\Omega$<br>10 $\Omega$ - 1M $\Omega$<br>1.02M $\Omega$ - 10M $\Omega$ |                           |           | $\pm 200$<br>$\pm 100$<br>$\pm 200$ |
| 1210           | 0.333                    |                             | 200V                               | 400V                              | 1 $\Omega$ - 9.76 $\Omega$<br>10 $\Omega$ - 1M $\Omega$<br>1.02M $\Omega$ - 10M $\Omega$ |                           |           | $\pm 200$<br>$\pm 100$<br>$\pm 200$ |
| 2010           | 0.750                    |                             | 200V                               | 400V                              | 1 $\Omega$ - 9.76 $\Omega$<br>10 $\Omega$ - 1M $\Omega$<br>1.02M $\Omega$ - 10M $\Omega$ |                           |           | $\pm 200$<br>$\pm 100$<br>$\pm 200$ |
| 2512           | 1                        |                             | 250V                               | 500V                              | 1 $\Omega$ - 9.76 $\Omega$<br>10 $\Omega$ - 1M $\Omega$<br>1.02M $\Omega$ - 10M $\Omega$ |                           |           | $\pm 200$<br>$\pm 100$<br>$\pm 200$ |

<sup>1</sup> Operating Voltage =  $\sqrt{P \cdot R}$  or MAX Listed, whichever is lower.

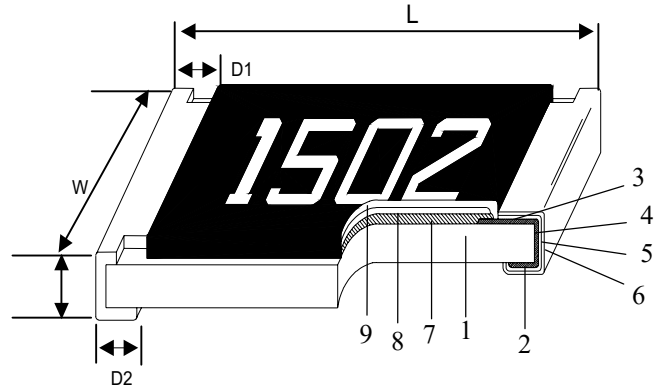
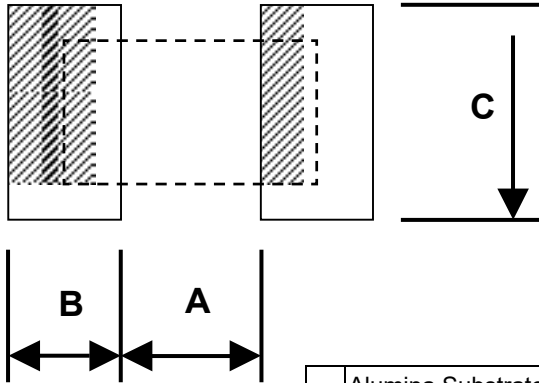
<sup>2</sup> Overload Voltage =  $2.5 \cdot \sqrt{P \cdot R}$  or MAX Listed, whichever is lower.

# ASC Series

Anti-Sulfur Thick Film Chip Resistor



### Recommended Land Pattern



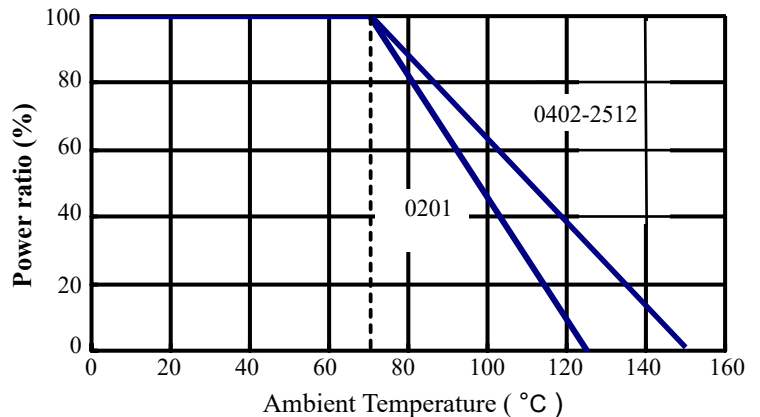
|   |                   |   |                    |   |                    |
|---|-------------------|---|--------------------|---|--------------------|
| 4 | Alumina Substrate | 7 | Edge Electrode     | 9 | Resistor Layer     |
| 3 | Bottom Electrode  | 6 | Barrier Layer      | 8 | Primary Overcoat   |
|   | Top Electrode     |   | External Electrode |   | Secondary Overcoat |

| Size | L (mm)      | W (mm)      | T (mm)      | D1 (mm)     | D2 (mm)     | Weight* (g) |
|------|-------------|-------------|-------------|-------------|-------------|-------------|
| 0201 | 0.60 ± 0.03 | 0.30 ± 0.03 | 0.23 ± 0.03 | 0.15 ± 0.05 | 0.15 ± 0.05 | 0.150       |
| 0402 | 1.00 ± 0.05 | 0.50 ± 0.05 | 0.35 ± 0.05 | 0.20 ± 0.10 | 0.20 ± 0.10 | 0.620       |
| 0603 | 1.60 ± 0.10 | 0.80 ± 0.10 | 0.45 ± 0.10 | 0.30 ± 0.20 | 0.30 ± 0.20 | 2.042       |
| 0805 | 2.00 ± 0.10 | 1.25 ± 0.10 | 0.50 ± 0.10 | 0.35 ± 0.20 | 0.40 ± 0.20 | 4.368       |
| 1206 | 3.10 ± 0.10 | 1.55 ± 0.10 | 0.55 ± 0.10 | 0.50 ± 0.25 | 0.50 ± 0.20 | 8.947       |
| 1210 | 3.10 ± 0.10 | 2.60 ± 0.15 | 0.55 ± 0.10 | 0.50 ± 0.25 | 0.50 ± 0.20 | 15.959      |
| 2010 | 5.00 ± 0.10 | 2.50 ± 0.15 | 0.55 ± 0.10 | 0.60 ± 0.25 | 0.50 ± 0.20 | 24.241      |
| 2512 | 6.35 ± 0.10 | 3.10 ± 0.15 | 0.55 ± 0.10 | 0.60 ± 0.25 | 0.50 ± 0.20 | 39.448      |

\* Weight based on 1,000 pcs

| Recommended Land Pattern (mm) |      |      |      |
|-------------------------------|------|------|------|
| Type                          | A    | B    | C    |
| 0201                          | 0.30 | 0.25 | 0.30 |
| 0402                          | 0.50 | 0.45 | 0.60 |
| 0603                          | 0.90 | 0.60 | 0.90 |
| 0805                          | 1.20 | 0.70 | 1.30 |
| 1206                          | 2.00 | 0.90 | 1.60 |
| 1210                          | 2.00 | 0.90 | 2.80 |
| 2010                          | 3.80 | 0.90 | 2.80 |
| 2512                          | 3.80 | 1.60 | 3.50 |

### Derating Curve



# ASC Series

Anti-Sulfur Thick Film Chip Resistor



| Environmental Characteristics                 |  |               |  |
|---|--|---------------|--|
| Test  | Requirement  |               | Conditions   |
|   | ±1% and Below  | ±5%           |  |
| TCR   | As Spec.   |               | -55°C to +125, +25°C is reference temperature                                    |
| Short Time Overload                           | ±(1%+0.05Ω)  | ±(2%+0.05Ω)   | RCWV*2.5 or Max. overload voltage for 5 seconds, 2 seconds for high power series |
| Insulation Resistance                         | >10 GΩ   |               | Max. Overload for 1 minute   |
| Endurance                                     | ±(2%+0.10Ω)  | ±(3%+0.10Ω)   | 70 ± 2°C, RCWV for 1000 hrs w/ 1.5 hrs "ON" and 0.5 hrs "OFF"                    |
| Damp Heat with Load                           | ±(2%+0.10Ω)  | ±(3%+0.10Ω)   | 40±2°C, 90 to 95% R.H.<br>RCWV for 1000 hrs w/ 1.5 hrs "ON" and 0.5 hrs "OFF"    |
| Dry Heat                                      | ±(1%+0.05Ω)  | ±(1.5%+0.10Ω) | at +125/+155°C for 1000 hrs  |
| Bending Strength                              | ±(1%+0.05Ω)  | ±(1%+0.05Ω)   | Bending once for 5 seconds<br>2010,2512 sizes: 2 mm other sizes: 3 mm            |
| Solderability<br>Terminal Finish = Nickel Tin | 95% min. coverage  |               | 245±5°C for 3 seconds  |
| Resistance to Soldering Heat                  | ±(0.5%+0.05Ω)  | ±(1%+0.05Ω)   | 260±5°C for 10 seconds   |
| Voltage Proof                                 | No breakdown or flashover                                  |               | 1.42 times Max. Operating Voltage for 1 minute                                   |
| Leaching                                      | Individual leaching area ≤ 5%<br>Total leaching area ≤ 10% |               | 260±5°C for 30 seconds   |
| Rapid Change of Temperature                   | ±(0.5%+0.05Ω)  | ±(1%+0.05Ω)   | -55°C to +125/+155°C, 5 cycles   |
| Sulfur Test                                   | ±(0.5%+0.05Ω)  | ±(0.5%+0.05Ω) | H <sub>2</sub> S, 50 ± 2°C, 91 to 93% R.H., no power rating for 1000 hrs         |

RCWV(Rated Continuous Working Voltage) =  $\sqrt{P \cdot R}$  or Max. Operating Voltage whichever is lower

## Ordering Information

Part Description: Part Type - Package Size- Resistance - Tolerance - TCR

Example: ASC0402 50 Ohms 0.05% 100ppm

(Note: if no TCR is specified: The highest value will be supplied)

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