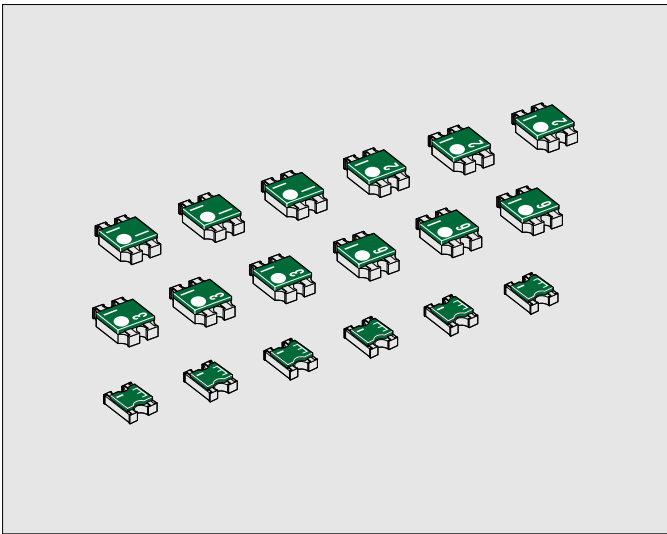


# RAC10 1A, RAC16 1A, 2A

## ●Features

- 1. The RAC10 1A and RAC16 1A, 2A Series are small size chip attenuators, suitable for high density surface packaging.
- 2. Suitable for use as DC and up to UHF band frequencies.
- 3. Similar foot print for chip resistor networks.
- 4. Standard impedance of 50 ohm and 75 ohm are available up to 600 ohm available on request.
- 5. Replaces conventional attenuation circuits with one chip in place of three discrete resistors.



## ●Dimensions and Circuit

RAC16 1A, 2A

RAC10 1A

RAC16 : Impedance on Termination 1  
Attenuation factor on Termination 3  
Dot mark on Termination 4

RAC10 : Dot mark on Termination 1  
Attenuation factor on Termination 2 to 3

Unbalanced  $\pi$  Type

Unit : mm

| Style        | Terminal Style | L        | W        | H                                      | Q         | a         | b                                      | *P   | *Unit weight/pc. |
|--------------|----------------|----------|----------|----------------------------------------|-----------|-----------|----------------------------------------|------|------------------|
| RAC10 1A     | C              | 1.0±0.05 | 1.0±0.05 | 0.35±0.10                              | 0.33±0.10 | 0.15±0.10 | 0.25 <sup>+0.05</sup> <sub>-0.10</sub> | 0.65 | 1.1mg            |
| RAC16 1A, 2A | A              | 1.6±0.1  | 1.6±0.1  | 0.55 <sup>+0.05</sup> <sub>-0.10</sub> | 0.5 ±0.1  | 0.25±0.10 | 0.25 <sup>+0.15</sup> <sub>-0.10</sub> | 0.8  | 3.5mg            |

\*Values for reference

## ●Product Classification

Example

RAC

①Product Type

10

②Size

1

③Characteristic Impedance

A

④Circuits

1

⑤Attenuation Factor

C

⑥ Terminal Style

TH

⑦Packaging

Style

①Product Type

| Code | Width |
|------|-------|
| 10   | 1.0mm |
| 16   | 1.6mm |

③Characteristic Impedance

| Code | Characteristic Impedance |
|------|--------------------------|
| 1    | 50 ohm                   |
| 2    | 75 ohm                   |

④Circuits

| Code | Circuits              |
|------|-----------------------|
| A    | Unbalanced $\pi$ Type |

⑤Attenuation Factor

| Code | Attenuation Factor |
|------|--------------------|
| X    | 0.5dB              |
| 1    | 1dB                |
| 2    | 2dB                |
| 3    | 3dB                |
| 4    | 4dB                |
| 5    | 5dB                |
| 6    | 6dB                |
| 7    | 7dB                |
| 8    | 8dB                |
| 9    | 9dB                |
| A    | 10dB               |
| B    | 11dB               |
| C    | 12dB               |
| D    | 13dB               |
| E    | 14dB               |
| F    | 15dB               |
| G    | 16dB               |
| L    | 20dB               |

⑥ Terminal Style

| Code | Termination Style    | Application |
|------|----------------------|-------------|
| A    | ✖Type Without corner | RAC16       |
| C    | ✔Type With corner    | RAC10       |

\*⑦Packaging

| Code | Packaging              | Application |
|------|------------------------|-------------|
| B    | Bulk(Loose Packaging)  | RAC10,16    |
| TP   | Paper Tape.            | RAC16       |
| TH   | Paper Tape.(2mm pitch) | RAC10       |

\*Refer to Taping and Packaging information in page 34,35

## ●Ratings

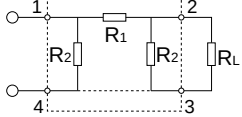
| Style    | Characteristic Impedance | Attenuation dB | Attenuation Factor Tolerance dB | Attenuation Range                    | VSWR Voltage standing wave Ratio | Rated Input Power mW/element | Category Temperature Range °C |
|----------|--------------------------|----------------|---------------------------------|--------------------------------------|----------------------------------|------------------------------|-------------------------------|
| RAC10 1A | 50 ohm                   | 0.5            | ±0.1                            | DC≤f≤3GHz                            | 1.1max.                          | 100                          | −40~+125                      |
|          |                          | 1              | ±0.3                            | DC ≤ f ≤ 1.5GHz<br>1.5GHz < f ≤ 3GHz | 1.2max.                          |                              |                               |
|          |                          | 2              |                                 |                                      |                                  |                              |                               |
|          |                          | 3              |                                 |                                      |                                  |                              |                               |
|          |                          | 4              |                                 |                                      |                                  |                              |                               |
|          |                          | 5              |                                 |                                      |                                  |                              |                               |
|          |                          | 6              | ±0.4                            |                                      | 1.3max.                          |                              |                               |
|          |                          | 7              |                                 |                                      |                                  |                              |                               |
|          |                          | 8              |                                 |                                      |                                  |                              |                               |
|          |                          | 9              |                                 |                                      |                                  |                              |                               |
|          |                          | 10             | ±0.75                           |                                      | ±0.8                             |                              |                               |
|          |                          | 11             |                                 |                                      |                                  |                              |                               |
|          |                          | 12             |                                 |                                      |                                  |                              |                               |
|          |                          | 13             |                                 |                                      |                                  |                              |                               |
|          |                          | 14             |                                 |                                      |                                  |                              |                               |
|          |                          | 15             |                                 |                                      |                                  |                              |                               |
|          |                          | 16             | ±2.5                            |                                      | DC ≤ f ≤ 3GHz                    |                              |                               |
|          |                          | 20             |                                 |                                      |                                  |                              |                               |
| RAC16 1A | 50 ohm                   | 1              | ±0.3                            | DC ≤ f ≤ 3GHz                        | 1.2max.                          |                              |                               |
|          |                          | 2              | ±0.3                            |                                      |                                  |                              |                               |
|          |                          | 3              | ±0.5                            |                                      |                                  |                              |                               |
|          |                          | 6              | ±0.75                           |                                      |                                  |                              |                               |
|          |                          | 10             | ±0.75                           |                                      |                                  |                              |                               |
| RAC16 2A | 75 ohm                   | 1              | ±0.3                            |                                      |                                  | DC ≤ f ≤ 3GHz                | 1.2max.                       |
|          |                          | 2              | ±0.3                            |                                      |                                  |                              |                               |
|          |                          | 3              | ±0.5                            |                                      |                                  |                              |                               |
|          |                          | 6              | ±0.75                           |                                      |                                  |                              |                               |
|          |                          | 10             |                                 |                                      |                                  |                              |                               |

\*The following information is available.

1. 0dB attenuation.

2. Test methods for Attenuation Factor and VSWR characteristics.

## ●Performance Characteristics JIS C 5201-1 : 1998

| Description                       | Requirements                             |              |              | Test Methods                                                                                                                |
|-----------------------------------|------------------------------------------|--------------|--------------|-----------------------------------------------------------------------------------------------------------------------------|
|                                   | 0.5–2dB                                  | 3dB–5dB      | 6dB–20dB     |                                                                                                                             |
| Characteristic impedance          | 50 ohm, 75 ohm                           |              |              | Measuring Circuit  RL=50 ohm<br>75 ohm |
| Insulation resistance             | At least 100M ohm                        |              |              | 50Vd.c., 60s                                                                                                                |
| Solderability                     | In accordance with Clause 4.17.4.5       |              |              | Clause 4.17 Dip into 235°C solder bath for 2s.                                                                              |
| Resistance to soldering heat      | Within±0.1dB<br>No major visible damage. | Within±0.2dB | Within±0.3dB | Clause 4.18 Dip into 260°C solder bath for 5s.                                                                              |
| Rapid change of temperature       | Within±0.1dB<br>No major visible damage. | Within±0.2dB | Within±0.3dB | Clause 4.19 5 cycles between -55°C and +125°C                                                                               |
| Endurance at 85°C                 | Within±0.1dB                             | Within±0.2dB | Within±0.3dB | Clause 4.25.1 Rated voltage, 1.5h"ON", 0.5h"OFF" 85°C, 1000h.                                                               |
| Bend strength of the face plating | Within±0.1dB                             | Within±0.2dB | Within±0.3dB | Clause 4.33 Amount of bend 3mm, 10s                                                                                         |

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