



# PAT series, RAT series, high-precision chip attenuators



These 3042, 1632, 1220, 1010 and 0510 size chip attenuators exhibit excellent high frequency characteristics. The surface mount package is ideal for low noise, low inductance and parasitic capacitance applications. Thin film metalization provides for very stable characteristics over temperature and time.

**NEW** Smallest in the market

PAT0510S, Thin-film chip attenuator that is the smallest and lightest in the market.

RoHS compliant

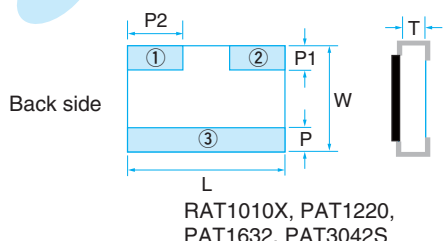
Completely lead free

RAT1010Xを除く



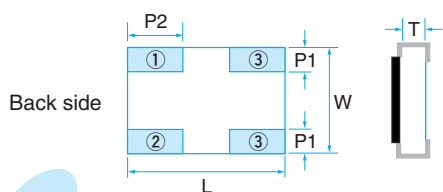
## SPECIFICATIONS

### Mechanical

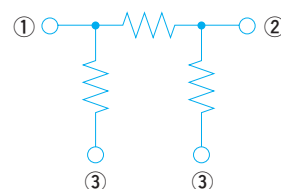


| Dimension (Inch Size) | RAT1010X (0404) | PAT0510S (0402) | PAT0816 (0603) | PAT1220 (0805) | PAT1632 (1206) | PAT3042S(C) (1712) |
|-----------------------|-----------------|-----------------|----------------|----------------|----------------|--------------------|
| L                     | 1.00±0.05       | 1.00±0.05       | 1.60±0.10      | 2.00±0.10      | 3.20±0.20      | 4.20±0.20          |
| W                     | 1.00±0.05       | 0.50±0.05       | 0.80±0.10      | 1.25±0.10      | 1.60±0.20      | 3.00±0.20          |
| P                     | 0.25±0.05/-0.1  | —               | 0.20±0.10      | 0.35±0.20      | 0.40±0.20      | 0.90±0.20          |
| P1                    | 0.25±0.05/-0.1  | 0.12±0.04       | 0.20±0.10      | 0.35±0.20      | 0.40±0.20      | 0.80±0.20          |
| P2                    | 0.33±0.10       | 0.27±0.05       | 0.50±0.10      | 0.60±0.20      | 1.00±0.20      | 0.50±0.20          |
| T                     | 0.42±0.05       | 0.34±0.05       | 0.40±0.10      | 0.40±0.10      | 0.40±0.10      | 0.80±0.15          |

(unit : mm)



### Equivalent circuit



### Electrical

| Type                        | RAT1010X       |        |         |         |        | PAT0510S            |        |        | PAT0816                    |        |        | PAT1220                                                   | PAT1632 |                                    | PAT3042S |          |
|-----------------------------|----------------|--------|---------|---------|--------|---------------------|--------|--------|----------------------------|--------|--------|-----------------------------------------------------------|---------|------------------------------------|----------|----------|
| Attenuation                 | 1~5dB          | 6~9dB  | 10dB    | 11~16dB | 20dB   | 0~3dB               | 4~7dB  | 8~10dB | 0~3dB                      | 4~7dB  | 8~10dB | 0~10dB                                                    | 0~10dB  | 16dB                               | 0~10dB   | 16, 20dB |
| Attenuation tolerance       | ±0.3dB         | ±0.4dB | ±0.75dB | ±0.8dB  | ±2.5dB | ±0.3dB              | ±0.5dB | ±0.7dB | ±0.3dB                     | ±0.5dB | ±1.0dB | ±0.3dB                                                    | ±0.3dB  | ±0.5dB                             | ±0.3dB   | ±0.5dB   |
| Impedance                   | 50Ω(C)         |        |         |         |        | 50Ω(C)              |        |        | 50Ω(C)                     |        |        | 50Ω(C)                                                    |         | 50Ω(C), 75Ω(D)                     |          |          |
| VSWR                        | <1.3           |        |         |         |        | <1.3                |        |        | <1.3(~6GHz), <1.5(6~10GHz) |        |        | <1.3                                                      | <1.3    | <1.2(50Ω), <1.3(75Ω)               |          |          |
| Frequency Range             | ~2.5GHz        |        | ~3GHz   |         |        | DC ~10GHz           |        |        | DC ~10GHz                  |        |        | DC ~3GHz                                                  |         | ~3GHz(50Ω), ~2GHz(75Ω)             |          |          |
| Power Rating                | 40mW           |        |         |         |        | 32mW                |        |        | 63mW                       |        | 100mW  | 125mW                                                     |         | 250mW                              |          |          |
| Rated Operating Temperature | —              |        |         |         |        | 70℃                 |        |        |                            |        |        |                                                           |         |                                    |          |          |
| Operating Temp Range        | -55℃~+125℃     |        |         |         |        |                     |        |        |                            |        |        |                                                           |         |                                    |          |          |
| Package                     | 10,000pcs/reel |        |         |         |        | 10,000pcs/reel(T10) |        |        | 5,000pcs/reel(T)           |        |        | 100pcs/package<br>1,000pcs/reel(T1),<br>5,000pcs/reel(T5) |         | 50pcs/package<br>2,000pcs/reel(T2) |          |          |

- PAT0510 series of 0402 chip with BGA are also available.
- Please contact us for power rating of up to 10W.



## PART NUMBER

**PAT 1632 - C - 3dB - T(5)**

Package T=Tape, B=Bulk, Taping Quantity Unit: 5(5000), 1(1000)

Attenuation

Rectangular Corner

Impedance

Impedance

Dimension, (Circuit)

Attenuation

Part Code

**RAT 1010X - 3dB - C - B**