POWER SPLITTER - High Precision Power Chip Divider

## HOW TO ORDER

|  |
| :--- | :--- | :--- |



## FEATURES

- High Frequency Splitter is constructed of thin film resistive material
- Power splitter with excellent high frequency characteristics for applications from DC~20GHz
- This product has a small reflection feature, allowing for superior in high frequency applications
- Allows for high density mounting
- Bit error is restrained by keeping high frequency digital signal stable


## PPS-A ELECTRICAL CHARACTERISTICS

| Item |  | PPS-16A | PPS-10 | PPS-18A | PPS-12A |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Size |  | 0603 | 0805 | 1206 | 2010 |
| Circuit Configuration |  | A | A | A | A |
| Operating Frequency |  | DC~20GHz | DC~17.5GHz | DC~15GHz | DC~10GHz |
| Insertion Loss | $6 \pm 0.5 \mathrm{~dB}$ | DC~10GHz | DC~10GHz | DC~10GHz | DC $\sim 7.5 \mathrm{GHz}$ |
|  | $6 \pm 1.0 \mathrm{~dB}$ | 10~20GHz | 10~17.5GHz | 10~15GHz | $7.5 \sim 10 \mathrm{GHz}$ |
| Split Deviation |  | 0.3 dB max | 0.3 dB max | 0.3 dB max | 0.3 dB max |
| VSWR | 1.3 | DC~10GHz | DC~10GHz | DC~10GHz | DC $\sim 7.5 \mathrm{GHz}$ |
|  | 1.5 | 10~20GHz | $10 \sim 17.5 \mathrm{GHz}$ | $10 \sim 15 \mathrm{GHz}$ | 7.5~10GHz |
| Input Power at $70^{\circ} \mathrm{C}$ |  | 100 mW | 125 mW | 250 mW | 500 mW |
| Max Overload Power |  | 200 mW | 250 mW | 500 mW | 1000 mW |
| Resistance |  | R1 = R2 = R3 = 50 ${ }^{\text {typical }}$ |  |  |  |
| Operating Temperature |  | $-40^{\circ} \mathrm{C} \sim+125^{\circ} \mathrm{C}$ |  |  |  |
| Packaging |  | 1,000/Reel or 5,000/Reel |  |  |  |

PPS-B ELECTRICAL CHARACTERISTICS

| Item | PPS-10B | PPS-18B |
| :--- | :---: | :---: |
| Size | 0805 | 1206 |
| Circuit Configuration | B | B |
| Resistance Tolerance | $\pm 0.1 \%, \pm 0.5 \%, \pm 1 \%$ |  |
| TCR | $\pm 50 \mathrm{ppm} /{ }^{\circ} \mathrm{C}$ | $\pm 50 \mathrm{ppm} /{ }^{\circ} \mathrm{C}$ |
| Power Rating per Element | 33 mW | 42 mW |
| Power Rating per Package | 100 mW | 125 mW |
| Rated Operating Temp | $70^{\circ} \mathrm{C}$ |  |
| Resistance | $\mathrm{R} 1=\mathrm{R} 2=\mathrm{R} 3=50 \Omega$ typical |  |
| Operating Temp. Range | $-55^{\circ} \mathrm{C} \sim+125^{\circ} \mathrm{C}$ |  |
| Package Quantity | $1,000 /$ Reel or $5,000 /$ Reel |  |

## CIRCUIT



POWER SPLITTER

## DERATING CURVE - Circuit A



DERATING CURVE - Circuit B


## DIMENSIONS (mm)

| Series | L | W | a | b | t |
| :---: | :---: | :---: | :---: | :---: | :---: |
| PPS-05A | $1.00 \pm 0.2$ | $0.50 \pm 0.2$ | $0.4 \pm 0.1$ | $0.30 \pm 0.1$ | $0.4 \pm 0.10$ |
| PPS-16A | $1.60 \pm 0.2$ | $0.80 \pm 0.2$ | $0.4 \pm 0.1$ | $0.30 \pm 0.1$ | $0.4 \pm 0.10$ |
| PPS-10A | $2.00 \pm 0.2$ | $1.25 \pm 0.2$ | $0.4 \pm 0.1$ | $0.30 \pm 0.1$ | $0.4 \pm 0.10$ |
| PPS-18A | $3.20 \pm 0.2$ | $1.60 \pm 0.2$ | $0.3 \pm 0.1$ | $0.35 \pm 0.1$ | $0.4 \pm 0.10$ |
| PPS-12A | $0.50 \pm 0.2$ | $2.5 \pm 0.2$ | $0.35 \pm 0.1$ | $0.65 \pm 0.1$ | $0.8 \pm 0.15$ |

## SCHEMATIC LEGEND

1. Thin Film Resistor
2. Overcoat Resin
3. Terminal ( SnPb or Lead Free)
4. Marking (dot to indicate direction \& bar)
5. Alumina Substrate

SCHEMATIC - Circuit A


Front side



Back side

PERFORMANCE

| Item | Test Condition |  | Tolerance |
| :---: | :---: | :---: | :---: |
| Short Time Overload | 2.5 times of the rated voltage shall be applied for 5 second |  | $\pm 0.1 \%$ |
| Rated Load Life | Apply rated voltage for 90 min followed by a pause of 30 m | 00 hours. | $\pm 0.25 \%$ |
| Moisture Load Life | The chip divider is applied rated voltage for 90 min at $60 \pm 2$ | 000 hours. | $\pm 0.25 \%$ |
| Temperature Cycle | [-55 ${ }^{\circ} \mathrm{C}(30 \mathrm{~min})-$ R.T. $(3 \mathrm{~min})-+125^{\circ} \mathrm{C}(30 \mathrm{~min})-$ R.T. $\left.(3 \mathrm{~min})\right]$ is |  | $\pm 0.1 \%$ |
| Soldering Heat Resistance | Leave NR in melt solder of $260 \pm 5^{\circ} \mathrm{C}$ for $10 \pm 1$ seconds. |  | $\pm 0.1 \%$ |
| Strength Between Terminals | Distance between fulcrums : 90 mm ; Bending width : 3 mm ; Substrate: Glass epoxy $\mathrm{t}=1.6 \mathrm{~mm}$ |  | $\pm 0.1 \%$ |
| Solderability | Leave NR in melted solder of $235 \pm 5^{\circ} \mathrm{C}$ for $3 \pm 0.5$ seconds. | $\geq 95 \%$ of the surface should be wet |  |
| Insulation Resistance | A minute after 500 DC |  | $\geq 1000 \mathrm{M} \Omega$ |

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[^0]:    *** Custom Designs Available

