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Two Port Parameters Formulas

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List of 24 Two Port Parameters Formulas

Two Port Parameters ↗

1) A-Inverse Parameter (A'B'C'D'-Parameter) ↗

fx $A' = \frac{V_2}{V_1}$

[Open Calculator ↗](#)

ex $0.5 = \frac{220V}{440V}$

2) A-Parameter (ABCD Parameter) ↗

fx $A = \frac{V_1}{V_2}$

[Open Calculator ↗](#)

ex $2 = \frac{440V}{220V}$

3) B Inverse Parameter (A'B'C'D'-Parameter) ↗

fx $B' = -\frac{V_2}{I_1}$

[Open Calculator ↗](#)

ex $-275\Omega = -\frac{220V}{0.8A}$



4) B Parameter (ABCD Parameter) ↗

$$fx \quad B = \frac{V_1}{-I_2}$$

Open Calculator ↗

$$ex \quad -431.372549\Omega = \frac{440V}{-1.02A}$$

5) C Inverse Parameter (A'B'C'D'-Parameter) ↗

$$fx \quad C' = \frac{I_2}{V_1}$$

Open Calculator ↗

$$ex \quad 0.002318\Omega = \frac{1.02A}{440V}$$

6) C Parameter (ABCD Parameter) ↗

$$fx \quad C = \frac{I_1}{V_2}$$

Open Calculator ↗

$$ex \quad 0.003636\Omega = \frac{0.8A}{220V}$$

7) D Inverse Parameter (A'B'C'D'-Parameter) ↗

$$fx \quad D' = -\frac{I_2}{I_1}$$

Open Calculator ↗

$$ex \quad -1.275 = -\frac{1.02A}{0.8A}$$



8) D Parameter (ABCD Parameter) ↗

$$fx \quad D = -\frac{I_1}{I_2}$$

Open Calculator ↗

$$ex \quad -0.784314 = -\frac{0.8A}{1.02A}$$

9) Driving Point Input Admittance (Y11) ↗

$$fx \quad Y_{11} = \frac{I_1}{V_1}$$

Open Calculator ↗

$$ex \quad 0.001818\Omega = \frac{0.8A}{440V}$$

10) Driving Point Input Impedance (Z11) ↗

$$fx \quad Z_{11} = \frac{V_1}{I_1}$$

Open Calculator ↗

$$ex \quad 550\Omega = \frac{440V}{0.8A}$$

11) Driving Point Output Admittance (Y22) ↗

$$fx \quad Y_{22} = \frac{I_2}{V_2}$$

Open Calculator ↗

$$ex \quad 0.004636\Omega = \frac{1.02A}{220V}$$



12) Driving Point Output Impedance (Z₂₂) ↗

fx $Z_{22} = \frac{V_2}{I_2}$

Open Calculator ↗

ex $215.6863\Omega = \frac{220V}{1.02A}$

13) G₁₁ Parameter (G-Parameter) ↗

fx $g_{11} = \frac{I_1}{V_1}$

Open Calculator ↗

ex $0.001818\text{S} = \frac{0.8A}{440V}$

14) G₁₂ Parameter (G-Parameter) ↗

fx $g_{12} = \frac{I_1}{I_2}$

Open Calculator ↗

ex $0.784314 = \frac{0.8A}{1.02A}$

15) G₂₁ Parameter (G-Parameter) ↗

fx $g_{21} = \frac{V_2}{V_1}$

Open Calculator ↗

ex $0.5 = \frac{220V}{440V}$



16) G22 Parameter (G-Parameter) ↗

$$fx \quad g_{22} = \frac{V_2}{I_2}$$

[Open Calculator ↗](#)

$$ex \quad 215.6863\Omega = \frac{220V}{1.02A}$$

17) H11 Parameter (H-Parameter) ↗

$$fx \quad h_{11} = \frac{V_1}{I_1}$$

[Open Calculator ↗](#)

$$ex \quad 550\Omega = \frac{440V}{0.8A}$$

18) H12 Parameter (H-Parameter) ↗

$$fx \quad h_{12} = \frac{V_1}{V_2}$$

[Open Calculator ↗](#)

$$ex \quad 2 = \frac{440V}{220V}$$

19) H21 Parameter (H-Parameter) ↗

$$fx \quad h_{21} = \frac{I_2}{I_1}$$

[Open Calculator ↗](#)

$$ex \quad 1.275 = \frac{1.02A}{0.8A}$$



20) H22 Parameter (H-Parameter) ↗

$$fx \quad h_{22} = \frac{I_2}{V_2}$$

Open Calculator ↗

$$ex \quad 0.004636U = \frac{1.02A}{220V}$$

21) Input Transfer Admittance (Y12) ↗

$$fx \quad Y_{12} = \frac{I_1}{V_2}$$

Open Calculator ↗

$$ex \quad 0.003636U = \frac{0.8A}{220V}$$

22) Input Transfer Impedance (Z12) ↗

$$fx \quad Z_{12} = \frac{V_1}{I_2}$$

Open Calculator ↗

$$ex \quad 431.3725\Omega = \frac{440V}{1.02A}$$

23) Output Transfer Admittance (Y21) ↗

$$fx \quad Y_{21} = \frac{I_2}{V_1}$$

Open Calculator ↗

$$ex \quad 0.002318U = \frac{1.02A}{440V}$$



24) Output Transfer Impedance (Z_{21})**Open Calculator** ↗

fx
$$Z_{21} = \frac{V_2}{I_1}$$

ex
$$275\Omega = \frac{220V}{0.8A}$$



Variables Used

- **A** A Parameter
- **A'** A Inverse Parameter
- **B** B Parameter (*Ohm*)
- **B'** B Inverse Parameter (*Ohm*)
- **C** C Parameter (*Mho*)
- **C'** C Inverse Parameter (*Mho*)
- **D** D Parameter
- **D'** D Inverse Parameter
- **g₁₁** G₁₁ Parameter (*Mho*)
- **g₁₂** G₁₂ Parameter
- **g₂₁** G₂₁ Parameter
- **g₂₂** G₂₂ Parameter (*Ohm*)
- **h₁₁** H₁₁ Parameter (*Ohm*)
- **h₁₂** H₁₂ Parameter
- **h₂₁** H₂₁ Parameter
- **h₂₂** H₂₂ Parameter (*Mho*)
- **I₁** Current in Port 1 (*Ampere*)
- **I₂** Current in Port 2 (*Ampere*)
- **V₁** Voltage Port 1 (*Volt*)
- **V₂** Voltage Port 2 (*Volt*)
- **Y₁₁** Y₁₁ Parameter (*Mho*)
- **Y₁₂** Y₁₂ Parameter (*Mho*)



- Y_{21} Y_{21} Parameter (Mho)
- Y_{22} Y_{22} Parameter (Mho)
- Z_{11} Z_{11} Parameter (Ohm)
- Z_{12} Z_{12} Parameter (Ohm)
- Z_{21} Z_{21} Parameter (Ohm)
- Z_{22} Z_{22} Parameter (Ohm)



Constants, Functions, Measurements used

- **Measurement:** Electric Current in Ampere (A)
Electric Current Unit Conversion ↗
- **Measurement:** Electric Resistance in Ohm (Ω)
Electric Resistance Unit Conversion ↗
- **Measurement:** Electric Conductance in Mho (G)
Electric Conductance Unit Conversion ↗
- **Measurement:** Electric Potential in Volt (V)
Electric Potential Unit Conversion ↗



Check other formula lists

- Two Port Parameters Formulas 

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