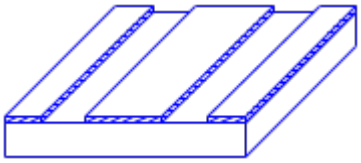
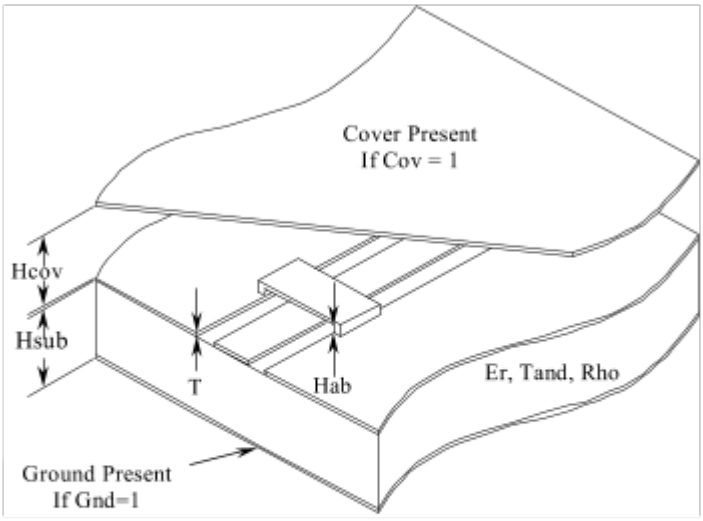
Coplanar Waveguide Substrate Definition: CPW_SUB

Symbol



Topology



Parameters

Name	Description	Unit Type	Default

Er	Relative dielectric constant		Er[1]
H	Substrate thickness	Length	L[1]
T	Conductor thickness	Length	T[1]
Rho	Metal bulk resistivity normalized to gold		1
Tand	Loss tangent of dielectric		Tand[1]
Hcover	Cover height above substrate	Length	L[1]
Hab	Air bridge height	Length	L[1]
Cover	No cover if 0, else metallic cover at Hcover		L[1]
Gnd	No ground plane if 0, else metallic ground plane backing		L[1]
Er_Nom	Nominal dielectric constant		Er[1]
H_Nom	Nominal substrate thickness	Length	L[1]
Hcov_Nom	Nominal cover height	Length	L[1]
Hab_Nom	Nominal air bridge height	Length	L[1]
T_Nom	Nominal conductor thickness	Length	T
Name	Substrate name	Text	CPW_SUB1 [2]

[1] User-modifiable default. Modify by editing under $DEFAULT_VALUES in the `default.lpf` file in the root installation directory. See the AWR Microwave Office Layout Guide for details.
[2] Modify only if schematic contains multiple substrates. See "Using Elements with Model Blocks" for details.

Parameter Details

Er. Relative permittivity of dielectric constant of substrate material.

Rho. Rho is the bulk resistivity of conductor metal normalized to gold (to Rho_Gold=2.44 x 10^{-8} **Ω***m) Actual bulk resistivity of conductor metal is Rho*Rho_Gold **Ω***m.

Hcover. Optional metallic cover elevation above the substrate. Valid only if parameter Cover is nonzero; not used otherwise.

Hab. Hab represents height of wire or strip air bridge that may be used to suppress an undesirable slotline (odd) mode.

Cover, Gnd. Cover and Gnd are unitless indicators; setting them to nonzero value

(for example, 1) makes models that use this substrate to account for presence of metallic cover (element Cover) and/or ground plane (Gnd). Zero values of these indicators inform the model that corresponding item is not present.

Er_Nom. Er_Nom represents the nominal dielectric constant of the substrate relative to free space permittivity and is used only by the EM based models where all EM data is collected at Er_Nom and a variational approach is used to estimate the performance for small variations in Er about Er_Nom. See "How to Properly Set Up Substrate Parameters for X-models" for more details.

Hsub_Nom, Hcov_Nom, Hab_Nom, and T_Nom. These parameters are nominal values of corresponding parameters Er, Hsub, Hcover, Hab, and T; they are used only by the EM based models. See "How to Properly Set Up Substrate Parameters for X-models" for more details

Layout

This element does not have an assigned layout cell. You can assign artwork cells to any element. See "Assigning Artwork Cells to Layout of Schematic Elements" for details.

Recommendations for Use

CPW_SUB must be either present on the schematics that contain elements using CPW_SUB or it may be placed in the Global Definitions window. In the latter case, models using a global definition of CPW_SUB must refer to it explicitly.

Elements used with CPW_SUB

LINES	OTHERS
CPW1LINE	CPWABRGX
CPWALINE	CPWEG
CPWLINE	CPWGAP
CPWLINX	CPWOC
CPWTAPER	CPWSC

BEND	JUNCTIONS	COUPLED LINES
CPWBENDX	CPWTEEX	CPW2LINA
		CPW2LINE
		CPW3LINA

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