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LIST OF SYMBOLS

Nomenclature

$\vec{B}$	*magnetic flux density (Wb/m^2)*
$\vec{D}$	*electric flux density (C/m)*
D_p	*penetration depth (m)*
$\vec{E}$	*electric field intensity (V/m)*
$\vec{H}$	*magnetic field intensity (A/m)*
L	*material length*
$\vec{P}$	*energy flux density (W/m^2)*
Q	*local electromagnetic heat-generation (J)*
T	*temperature (°C)*
S_{11}	*reflected scattering coeffient from Port 1*
S_{22}	*reflected scattering coeffient from Port 2*
S_{21}	*transmitted scattering coeffient from Port 1*
S_{22}	*transmitted scattering coeffient from Port 2*
V	*volume (m^3)*
a	*thermal diffusivity (m^2/s)*
c_p	*heat capacity at constant pressure (J/(kg·K))*
f	*frequency (Hz)*
q	*electric charge density (C/m^3)*
t	*time (s)*
e	*Euler's number (= 2.7182818...)*

Greek letters

Γ	*reflection coefficient*
σ	*effective conductivity (S/m)*
ε_0	*permittivity of free space ($= 8.8514\times10^{-12}$) (F/m)*
ε_∞	*permittivity at the high frequency limit*
ε_s	*static, low-frequency permittivity*
ε^*	*complex (electric) permittivity, ε'-$j\varepsilon''$*
ε_r	*relative permittivity*
ε_r'	*relative dielectric constant*

ε_r'' *relative dielectric loss factor*

μ^* *complex magnetic permeability,* μ'-$j\mu''$

μ_o *permeability of free space* $(= 4\pi \times 10^{-7})(m \cdot kg/s^2.A^2)$ *or (h/m)*

μ_r *relative permeability*

υ *microwave speed in the dielectric material (m/s)*

ω *angular frequency, field's frequency* (s^{-1})

$\tan \delta$ *loss tangent coefficient* $(\varepsilon'' / \varepsilon')$

σ *electric conductivity (1/Ohm)*

τ *characteristic relaxation time (s)*

ρ *density* (kg/m^3)

λ_g *wavelength in sample.*

$\lambda_{free\ space}$ *wavelength of free space*

λ_{cutoff} *wavelength of cutoff frequency*