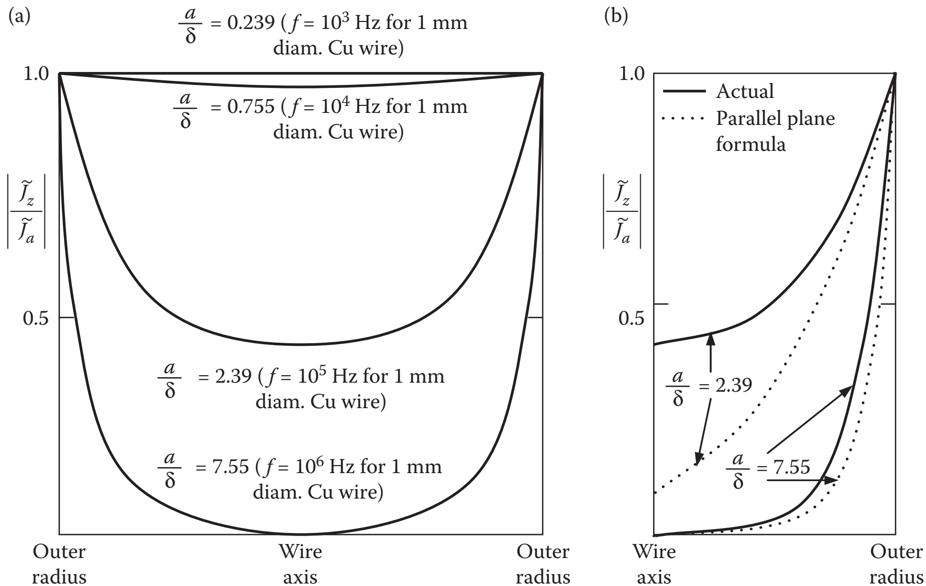

Figure 2A.1
(a) Current distribution in a cylindrical wire for different frequencies. (b) Actual and approximate (parallel plate formula) distribution in cylindrical wire. (Ramo, S., Whinnery, J. R., and Van Duzer, T., *Fields and Waves in Communication Electronics*. p. 297. 1967. Copyright Wiley-VCH Verlag GmbH&Co. KGaA. Reproduced with permission.)

002xA00Ax001.eps

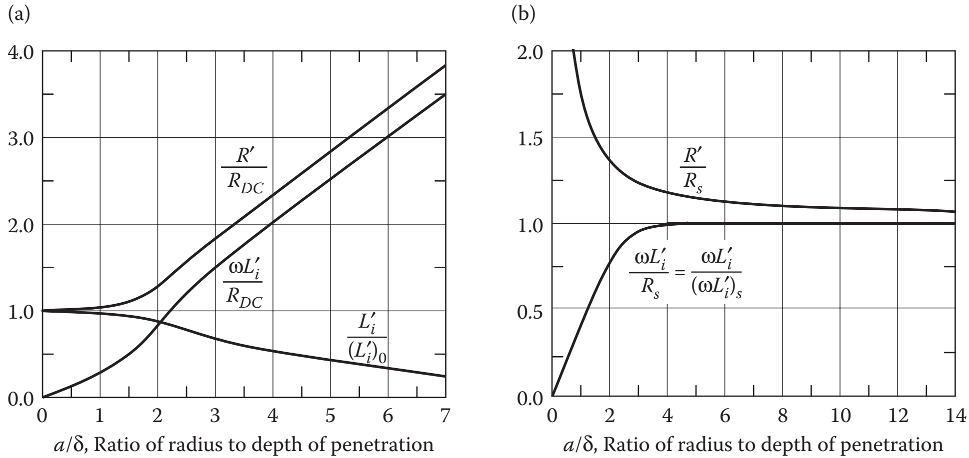

Figure 2A.2
(a) Solid wire skin effect quantities compared with d.c. values. (b) Solid wire skin effect quantities compared with values from high-frequency formulas. (Ramo, S., Whinnery, J. R., and Van Duzer, T., *Fields and Waves in Communication Electronics*. p. 297. 1967. Copyright Wiley-VCH Verlag GmbH&Co. KGaA. Reproduced with permission.)

002xA00Ax002.eps

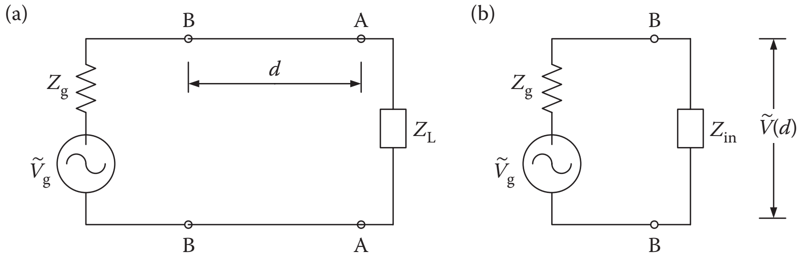

Figure 2B.1
Transmission line: (a) length d and (b) equivalent input impedance.

002xA00Bx001.eps

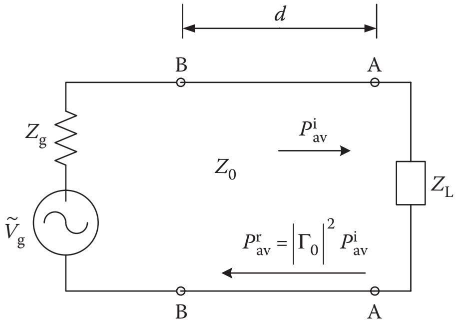

Figure 2B.2
Transmission line circuit showing incident and reflected power.

002xA00Bx002.eps

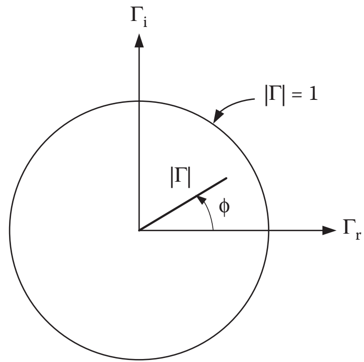

Figure 2C.1
Polar coordinates of the Smith chart.

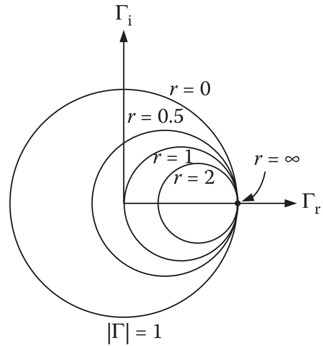

Figure 2C.2
Family of circles on the Smith chart corresponding to reflection coefficient for fixed, normalized load resistances.

002xA00Cx002.eps

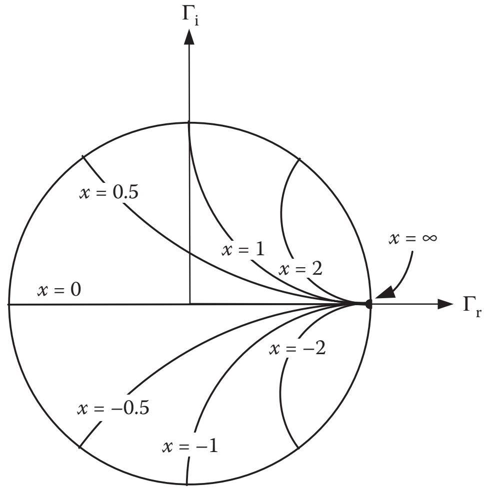

Figure 2C.3
Family of circles on the Smith chart corresponding to reflection coefficient for fixed, normalized load reactance.

002xA00Cx003.eps

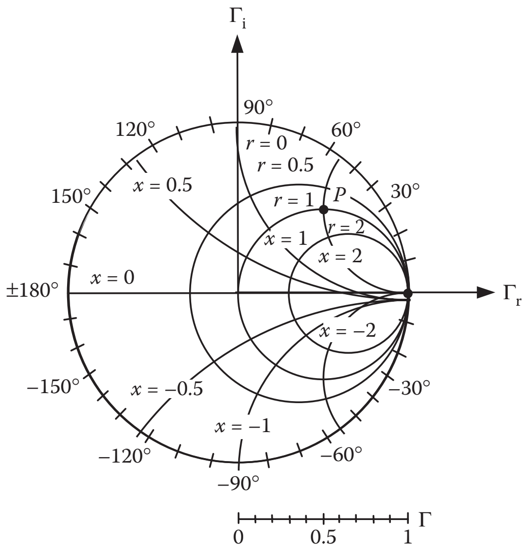

Figure 2C.4
Smith chart constant resistance (r) and reactance (x) contours.

Courtesy of CRC Press/Taylor & Francis Group

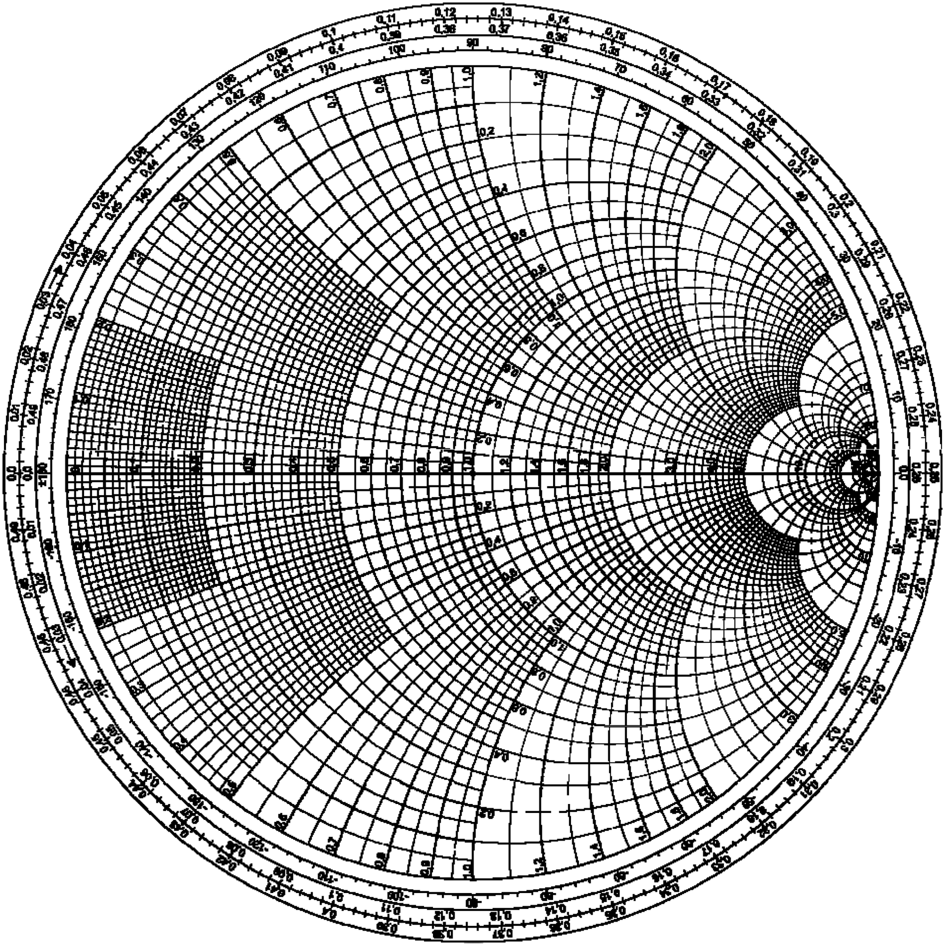

Figure 2C.5
The Smith chart (graduated line segments at the bottom are not shown here).

002xA00Cx005.tif

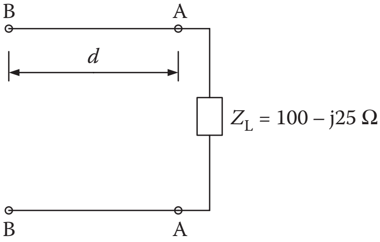

Figure 2C.6
Smith chart example (Z_L = 100 ⊠ j25 Ω, $d = 0.6\lambda$).

002xA00Cx006.eps

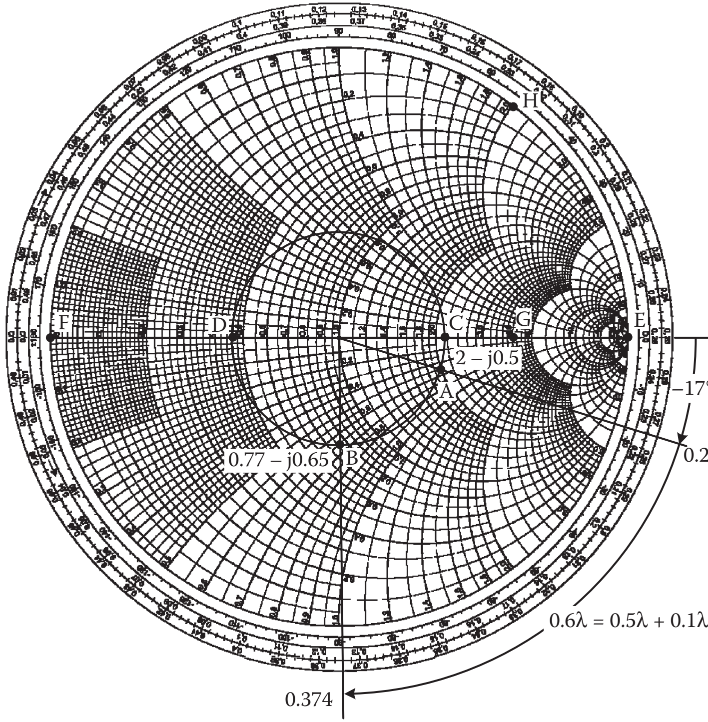

Figure 2C.7
Smith chart example A = load 100 ⊠ j25Ω, B = input impedance at $d = 0.6\lambda$ line, C = point of voltage maximum, D = point of voltage minimum, E = open-circuit point, F = short-circuit point, G = load 4 + j0, H = load 0 + j2.

002xA00Cx007.eps

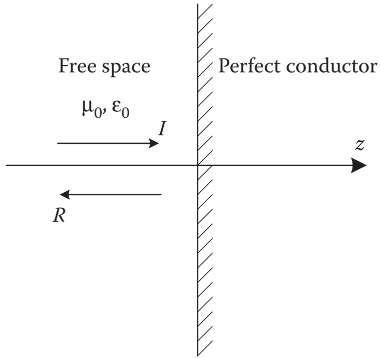

Figure 2C.8
Reflection of uniform plane wave at a free space to perfect conductor boundary.

002xA00Cx008.eps

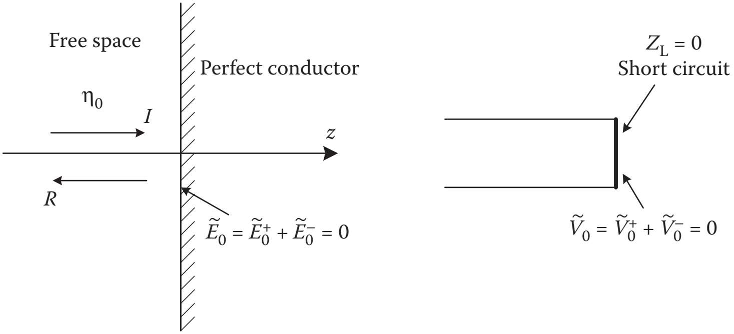

Figure 2C.9
Comparison of normal plane wave reflection with transmission line.

002xA00Cx009.eps

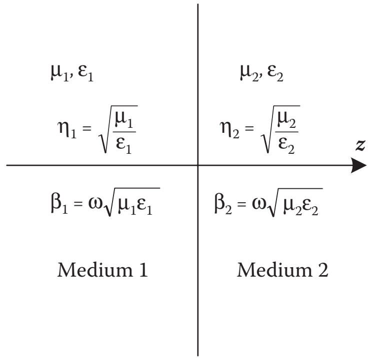

Figure 2C.10
Boundary between two dielectrics.

002xA00Cx010.eps

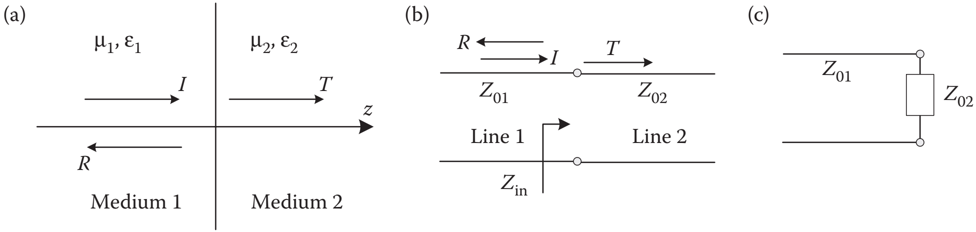

Figure 2C.11
Comparison of reflection at a dielectric–dielectric boundary to a transmission line: (a) dielectric interface, (b) transmission line interface, and (c) equivalent load on transmission line.

002xA00Cx011.eps

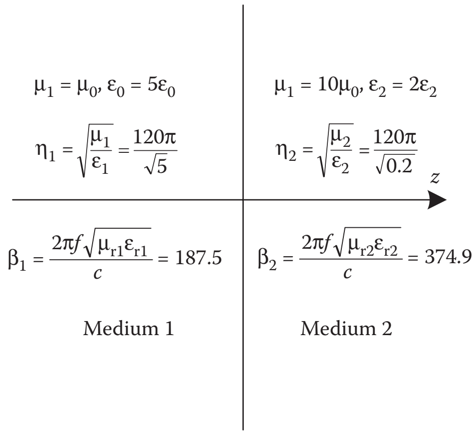

Figure 2C.12
Problem geometry for Example 2C.2.

002xA00Cx012.eps

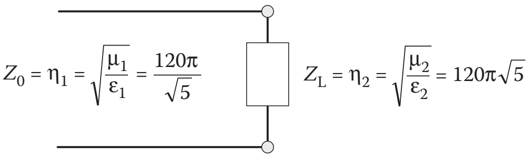

Figure 2C.13
Equivalent transmission line circuit for Example 2C.2.

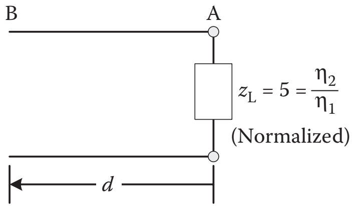

Figure 2C.14
Equivalent transmission line circuit with line length d.

Courtesy of CRC Press/Taylor & Francis Group

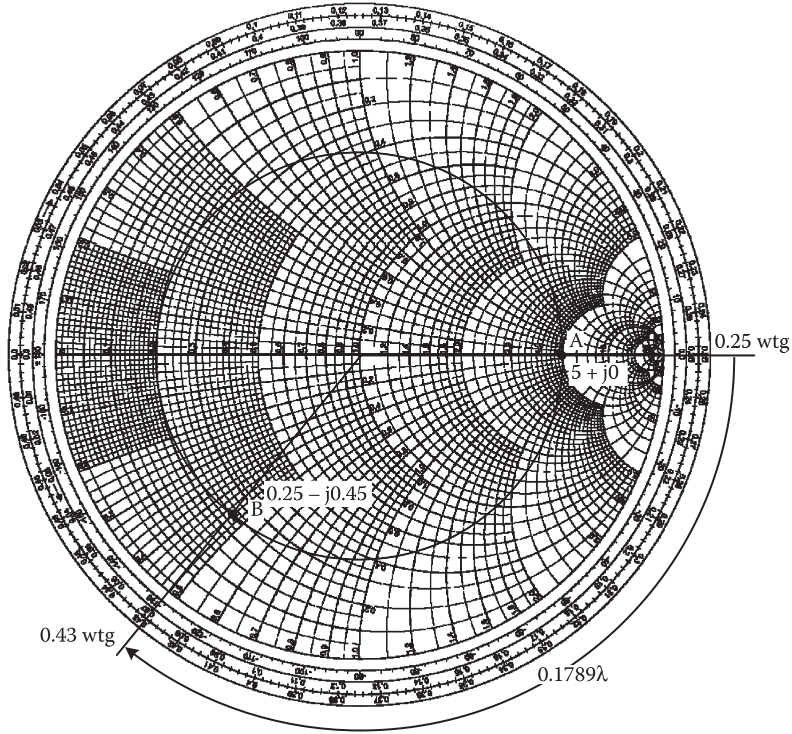

Figure 2C.15
Smith chart utilized to solve Example A2.2 dielectric interface problem.

002xA00Cx015.eps

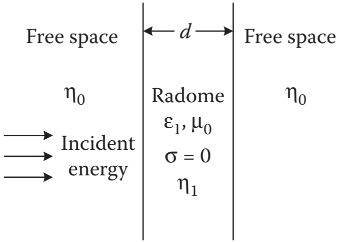

Figure 2C.16
Radome analysis geometry.

002xA00Cx016.eps

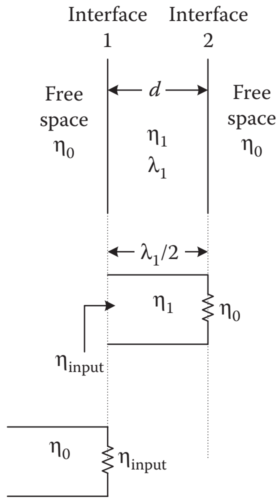

Figure 2C.17
Radome equivalent transmission line circuit.

002xA00Cx017.eps

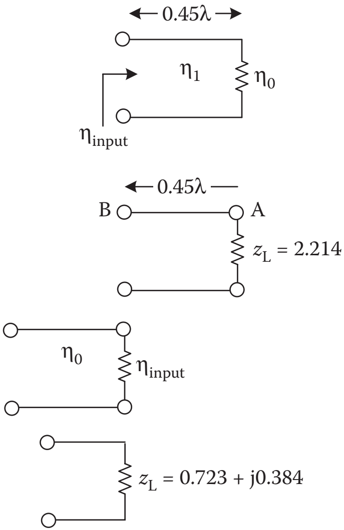

Figure 2C.18
Radome equivalent transmission line circuit.

Courtesy of CRC Press/Taylor & Francis Group

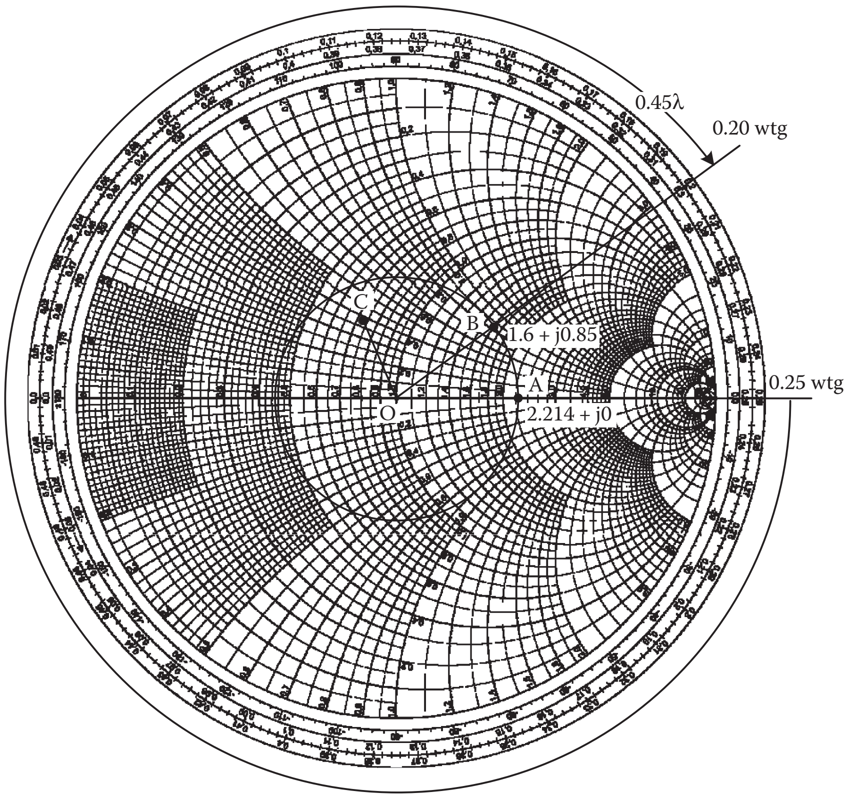

Figure 2C.19
Smith chart used in solution of radome problem (Example 2C.3).

002xA00Cx019.eps

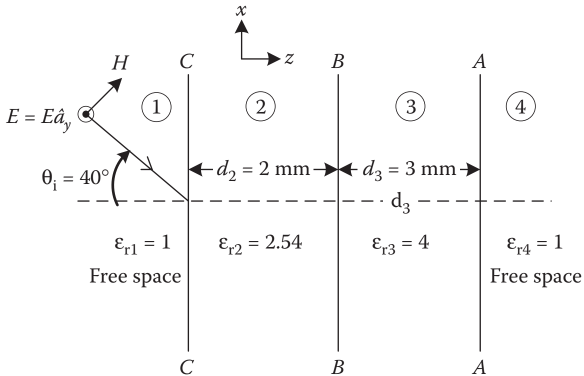

Figure 2C.20
Example of use of the Smith chart for oblique incidence.

002xA00Cx020.eps

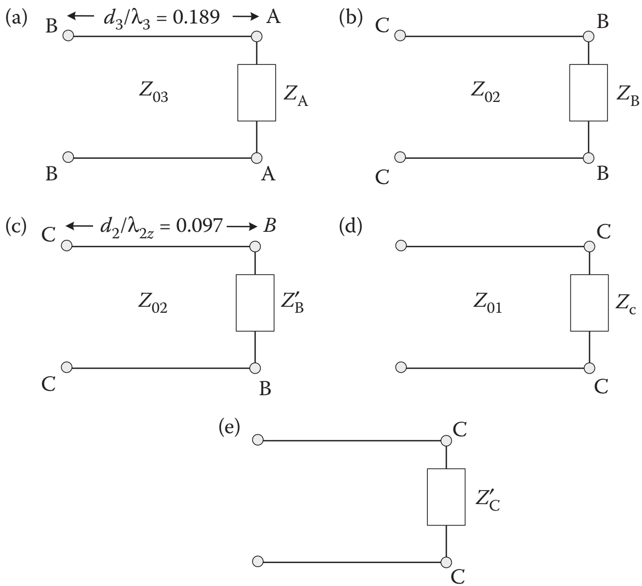

Figure 2C.21
Equivalent transmission lines for example problem. (a) Transmission line for 3. (b) Transmission line for 2. (c) Renormalization with Z_{02} (d) Transmission line 1. (e) Renormalization with Z_{01}.

002xA00Cx021.eps

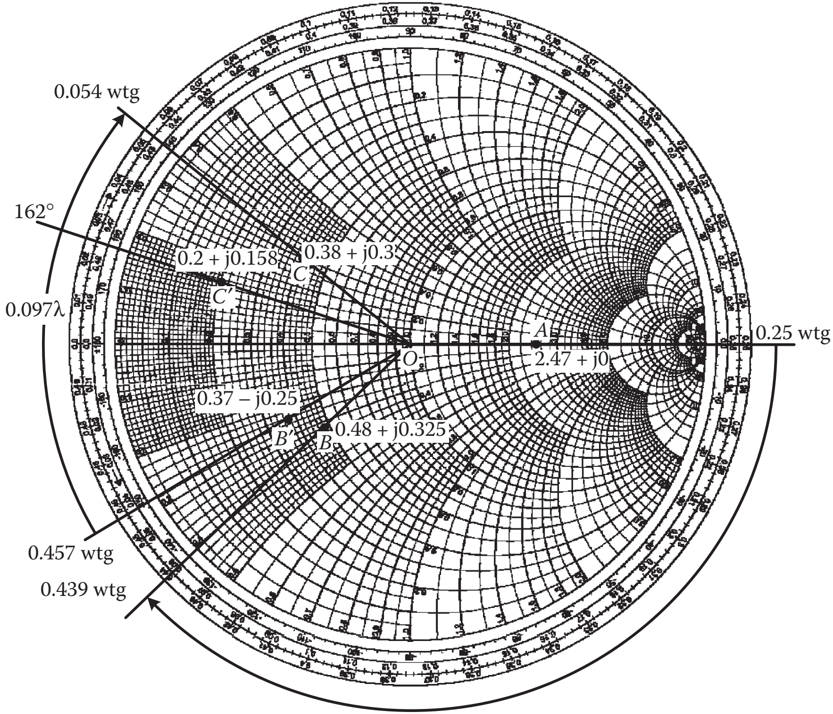

Figure 2C.22
Smith chart used in the solution of oblique plane wave reflection from multiple layers.

002xA00Cx022.eps