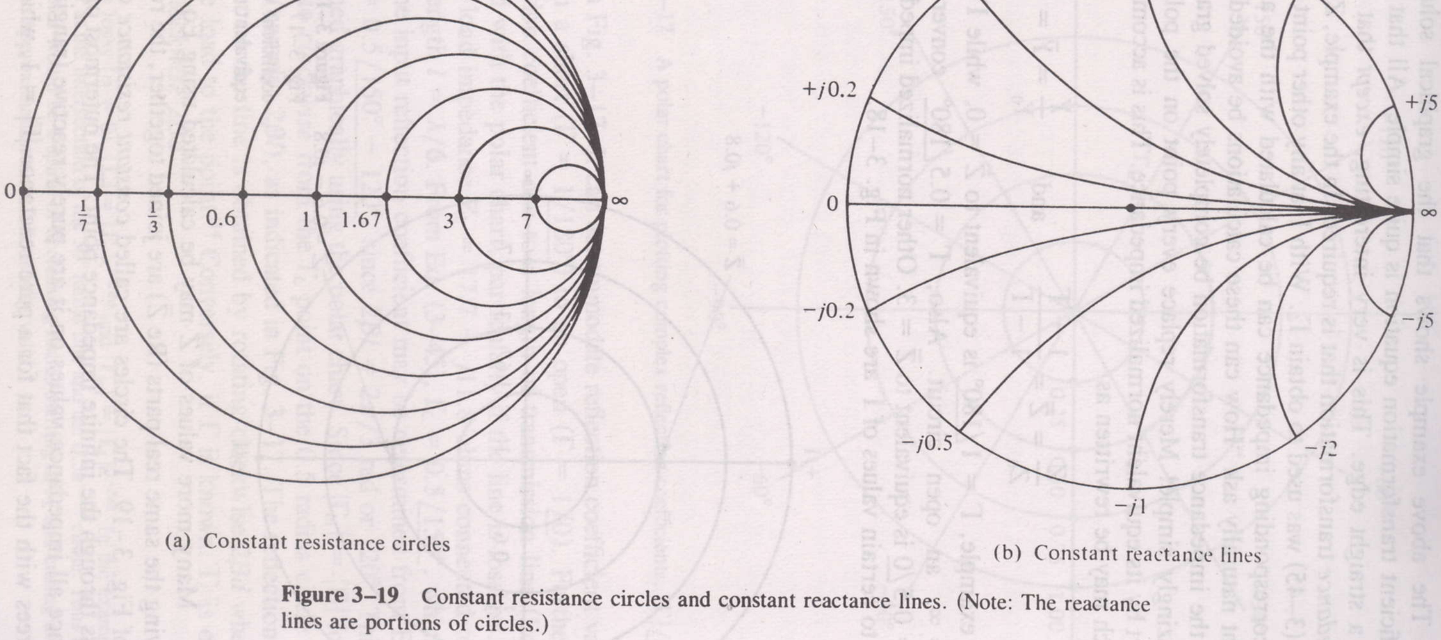

(a) Constant resistance circles

(b) Constant reactance lines

Figure 3–19 Constant resistance circles and constant reactance lines. (Note: The reactance lines are portions of circles.)

on the chart. Joining all points havi
the curved lines shown in part b of
lines and in fact are portions of circ
tween the zero and infinity points. It
nates with values ranging from $\bar{R}$ =
$\bar{R} = \infty$. The impedance grid formed
and the constant reactance lines is a
cially available version used in many
nally developed by P. H. Smith (Refs
reflection coefficient upon which a
posed. Equation (3–101) provides the
$\bar{Z}$ coordinates. Note that for the sake
ues of $|\Gamma|$ have been removed. Howe
been retained. It is the innermost of
The two outermost scales allow us to
transformation) without having to ca
fractions of a wavelength. Note that c
wavelength since for $d = \lambda/2$, $2\beta d$ =
shown in Sec. 3–6a that impedance
chart in Fig. 3–20, the upper half is t
impedance values have an inductive
tance) denotes impedances with a cap

At the top of the chart are the
nates." The reason for this is that the
admittance coordinates. For any valu
($\bar{Y} \equiv Y/Y_0$) is 180° away on the san
changing its sign) converts $\bar{Z}$ to $\bar{Y}$. T
for $\bar{Z}$ and $\bar{Y}$ in Eq. (3–101). When us
comments should be kept in mind.

1. The $\bar{Y} = 0$ point corresponds to
sponds to a short circuit.
2. The resistance coordinates becor
coordinates become susceptance
ceptance value (top half of the ch
a negative value denotes an ind
chart.
3. When using admittance coordi
scale must be rotated 180°. This
the values on the top half of th
bottom half.

[15] The proof that the locus of constant r
circles is given in many texts. See, for example