

TABLE 1.3 Relative Permittivities of Various Dielectrics

Material	ϵ_r
Air	1.0005
Styrofoam	1.03
Polyethylene foam	1.6
Cellular polyethylene	1.8
Teflon	2.1
Polyethylene	2.3
Polystyrene	2.5
Nylon	3.5
Silicon rubber	3.1
Polyvinyl chloride (PVC)	3.5
Epoxy resin	3.6
Quartz (fused)	3.8
Epoxy glass (printed circuit substrate)	4.7
Bakelite	4.9
Glass (pyrex)	5.0
Mylar	4.0
Porcelain	6.0
Neoprene	6.7
Polyurethane	7.0
Silicon	12.0

TABLE 1.4 Relative Permeabilities and Conductivities (Relative to Copper) of Various Metals

Conductor	σ_r	μ_r
Silver	1.05	1
Copper-annealed	1.00	1
Gold	0.70	1
Aluminum	0.61	1
Brass	0.26	1
Nickel	0.20	600
Bronze	0.18	1
Tin	0.15	1
Steel (SAE 1045)	0.10	1000
Lead	0.08	1
Monel	0.04	1
Stainless Steel (430)	0.02	500
Zinc	0.32	1
Iron	0.17	1000
Beryllium	0.10	1
Mumetal (at 1 kHz)	0.03	30,000
Permalloy (at 1 kHz)	0.03	80,000