

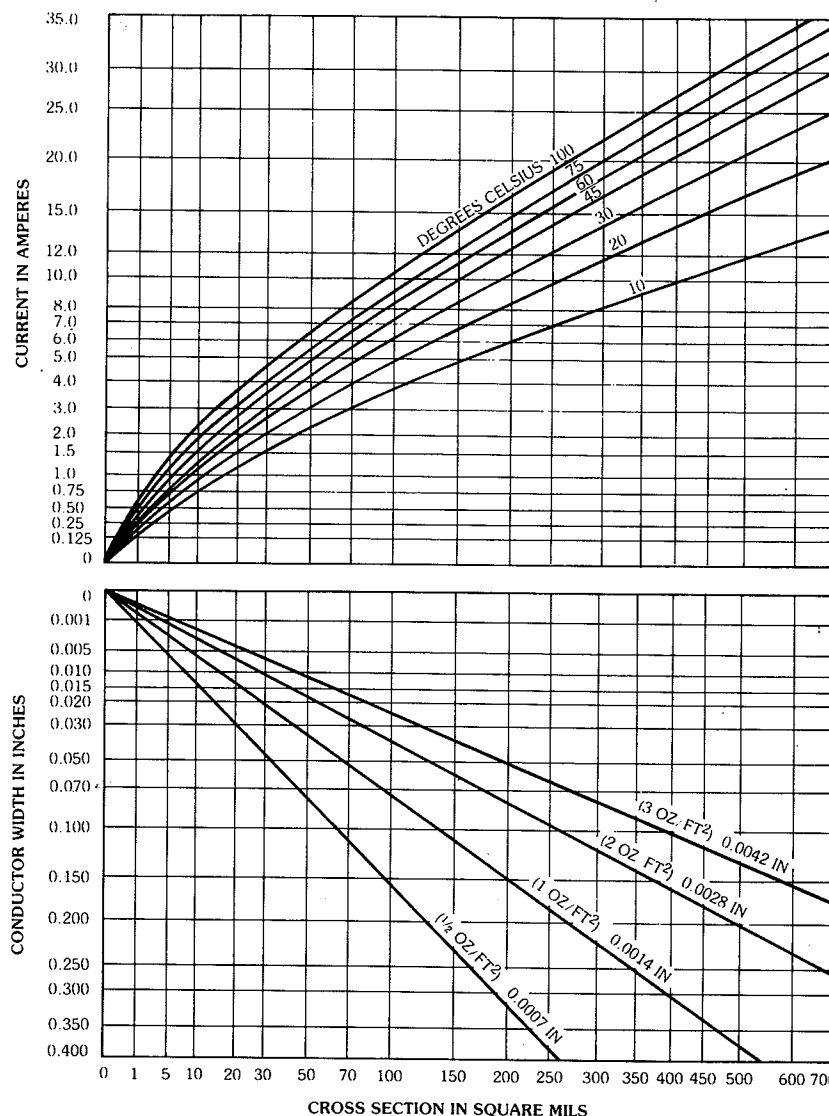


Fig. 20. Current-carrying capacity and sizes of etched copper conductors for various temperature rises above ambient. From MIL-STD-275C, 9 January 1970.

unwanted oscillation in high-frequency or amplifier circuits.

All features (terminal areas, contacts, board boundaries, holes, etc.) should be arranged to be centered at the intersections of a 0.100-, 0.050-, or 0.025-inch rectangular grid, with preference in the order stated. Many components are available with leads spaced to match the standard grids. Devices with circular lead configurations and a few other multilead devices are exceptions that require special attention and dimensioning. Following this grid-layout principle simplifies drafting and subsequent machine operations in board manufacture and assembly.

Drilled holes must be employed if the stated requirements for punched holes cannot be met, or if the

material is not of a punching grade. Drilling is less detrimental to the laminate surrounding the hole; punching may cause crazing or separation of the laminate layers.

The diameter of punched holes in circuit boards should not be less than $\frac{2}{3}$ the thickness of the base material.

The distance between punched holes or between holes and the edge of the material should not be less than the material thickness.

Punched-hole tolerance should not be less than ± 0.005 inch on the diameters.

Hole sizes should not exceed by more than 0.020 inch the diameter of the wire to be inserted in the hole. With smaller holes, hand insertion of the wire is