A Study on Effect of Line Width, Composition and Firing Temperature on the Microstripline Properties

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The transmittance and reflectance of microstriplines of different widths, fabricated by thick film and thin film technology are studied in the X and Ku band (8–18 GHz). The fritless thick film Ag pastes with different binder composition was formulated indigenously and screen-printed the microstriplines on alumina substrate. These microstriplines were compared with the microstriplines made from ESL (USA) pastes and also Cu thin film circuits. The effect of line width, composition and firing temperature on the thick film microstriplines was investigated. The transmittance of all the indigenously prepared Ag thick film paste compared well with microstriplines prepared with ESL pastes. All these thick film pastes gave good transmittance upto 18.0 GHz. The results indicate firing at 700℃ gives best films, and also 18 mil or 20-mil line width is more suitable than conventional 25-mil line width if thick films are used for metallization upto 18.0 GHz.

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