

Title (en)

TEMPERATURE-STABLE MICROWAVE INTEGRATED CIRCUIT DELAY LINE.

Title (de)

TEMPERATURSTABILISIERTE INTEGRIERTE MIKROWELLENVERZÖGERUNGSLEITUNG.

Title (fr)

LIGNE DE TEMPORISATION A CIRCUIT INTEGRE A MICRO-ONDES AYANT UNE TEMPERATURE STABLE.

Publication

**EP 0050657 A4 19820903 (EN)**

Application

**EP 81901261 A 19810427**

Priority

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Abstract (en)

[origin: WO8103087A1] A temperature-stable microwave integrated circuit (MIC) delay line (10) employs at least two cascade connected dielectric substrates (12, 14), for example, a high dielectric barium tetratitanate ( $\text{Ba-TiO}_4$ ) ceramic microstrip (22), and a short sapphire single crystal  $\text{Al}_2\text{O}_3$  microstrip section (26). Temperature changes in the transmission phase are compensated for by selecting the substrate materials such that the positive transmission phase temperature coefficient of one substrate is effectively cancelled out by the negative transmission phase temperature coefficient of the other sub-strate. In this manner, the transmission delay temperature coefficient of the composite delay line may be reduced to a value of  $0.6(\pm 0.3) \times 10^{-6}$  parts per degree C. at 14 GHz over the temperature range of 20 degrees C.  $\pm$  30 degrees C.

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IPC 8 full level

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