Title (en)

CRYOCABLE

Title (de)

CRYOKABEL

Title (fr)

CRYOCABLE

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Application

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Abstract (en)

[origin: WO9528750A1] An electrical interconnect provides a path between cryogenic or cryocooled circuitry and ambient temperatures. As a system, a cryocable (10) is combined with a trough-line contact or transition (20). In the preferred embodiment, the cryocable (10) comprises a conductor (11) disposed adjacent an insulator (12) which is in turn disposed adjacent another conductor (13). The components are sized so as to balance heat load through the cryocable (10) with the insertion loss. In the most preferred embodiment, a coaxial cryocable (10) has a center conductor (11) surrounded by a dielectric (12) (e.g. Teflon<TM>) surrounded by an outer conductor (13) which has a thickness between about 6 and 20 microns. The heat load is preferably less than one Watt, and most preferably less than one tenth of a Watt, with an insertion loss less than one decibel. In another aspect of the invention, a trough-line contact or transition (20) is provided in which the center conductor (11) is partially enveloped by dielectric (12) to form a relatively flat portion (28). The preferred overall geometry of the preferred embodiment of the cable is generally cylindrical, although other geometries are possible (e.g. stripline, microstrip, coplanar or slotline geometries).

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