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General information for optical fiber fuse

Summary

Optical power in optical fiber is being increased to achieve an efficient transmission network by increasing the optical signal channel number and by maintaining a suitable SNR at a high transmission speed by using a high power optical fiber amplifier and Raman amplification. This has led to increased concern about the damage caused by the fiber fuse phenomenon. Once the phenomenon is initiated, a bubble train forms in the fiber core after the fiber fuse, and it propagates towards the high optical power source and continues until the optical power in the core falls below the threshold fiber fuse power. Optical signals cannot be transmitted through fiber damaged in this way. There have been several studies regarding the generation mechanisms, the bubble formation mechanism and the emission properties from the plasma discharge that occurs when bubbles are formed. Recently, several prevention and termination methods for the fiber fuse have been proposed. This TP gives a general description of the generating mechanism and characteristics of fiber fuse and prevention and termination for the fiber fuse for a greater understanding about optical fiber fuses.