Abstracts

MMIC Temperature Stabilization through Phase Change Energy Absorption

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A new temperature stabilization concept for MMIC's utilized in applications such as Decoys, Kinetic Energy Weapons, Missile Systems, and Smart Munitions is presented. The concept permits MMIC junction temperatures to be maintained within operational limits during short periods of high power dissipation. The stabilization of junction temperature is accomplished by locating the MMIC in close thermal proximity to a material which undergoes a change of state. The result of this mounting configuration is the absorption of large relative quantities of thermal energy within a minimal volume. Both theoretical and experimental data are presented which support evidence of an increase in operational period of approximately two hundred percent.

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