

Public Abstract

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Title:MSM Photodiode as the Switching Element in a Photoswitch-Based Class E Microwave Power Amplifier

This thesis covers the design of an amplifier and the optically activated switch used in the amplifier. The application of the amplifier is to provide power for the signal emitted by a radar system. The reason for using an optically activated switch is to improve efficiency. This would result in lower power required to operate the amplifier and less heat generated. Less heat would then need to be removed, resulting in smaller, lighter heat removal devices. While local fabrication limitations prevented the production of a working model of the amplifier, the thesis outlines all of the design steps necessary to produce a working model.