UNCLASSIFIED

Security Classification

DOCUMENT CONTROL DATA - R & D

(Security classification of title, body of abstract and indexing annotation must be entered when the overall report is classified)

1. ORIGINATING ACTIVITY *(Corporate author)*
Monsanto Company
Electronic Products and Controls Division
10131 Bubb Road, Cupertino, California

2a. REPORT SECURITY CLASSIFICATION
UNCLASSIFIED

2b. GROUP
N/A

3. REPORT TITLE
Lightweight GaAs(P) Semiconductor Injection Lasers

4. DESCRIPTIVE NOTES *(Type of report and inclusive dates)*
Final Report (January 1969 to July 1969)

5. AUTHOR(S) *(First name, middle initial, last name)*
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6. REPORT DATE	7a. TOTAL NO. OF PAGES	7b. NO. OF REFS
September 1969	37	

8a. CONTRACT OR GRANT NO.	9a. ORIGINATOR'S REPORT NUMBER(S)
DAAK02-69-C-0180	Report Number 00045
b. PROJECT NO.	
c.	9b. OTHER REPORT NO(S) *(Any other numbers that may be assigned this report)*
d.	

10. DISTRIBUTION STATEMENT This document is subject to special export controls and each transmittal to foreign governments or foreign nationals may be made only with prior approval of U.S. Army Engineer R & D Lab. Fort Belvoir, Virginia.

11. SUPPLEMENTARY NOTES	12. SPONSORING MILITARY ACTIVITY
----------	U.S. Army Engineering R & D Lab. Fort Belvoir, Virginia

13. ABSTRACT

Fabrication and test of single element lasers demonstrated that devices built using planar techniques were superior to rectangular parallelepiped devices and, at room temperature, gave 5 watts peak power output for a current input of 40 amps peak, having a duration of 100 nanoseconds at a repetition rate of 1KHz. Higher repetition rates for the planar device gave less degradation in performance than that obtained from the rectangular parallelepiped geometry.

Using the planar devices a sixteen element array was constructed whose emitting area was within the confines of a TO-5 header. 55 watts peak power output was demonstrated on this device for a current pulse of 40 amps peak power having a duration of 100 nanoseconds at a repetition rate of 4 KHz. The array average power output was then 22 mw. (U)

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