

[54] THIN-FILM TRANSISTOR

[75] Inventor: Mitsuhiro Koden, Nara-shi, Japan

[73] Assignee: Sharp Kabushiki Kaisha, Osaka, Japan

[21] Appl. No.: 125,961

[22] Filed: Nov. 27, 1987

[30] Foreign Application Priority Data

Nov. 29, 1986 [JP] Japan 61-284950
Dec. 5, 1986 [JP] Japan 61-291222

[51] Int. Cl.⁴ H01L 29/78

[52] U.S. Cl. 357/23.7; 357/4; 357/2

[58] Field of Search 357/23.7, 4, 2

[56] References Cited

U.S. PATENT DOCUMENTS

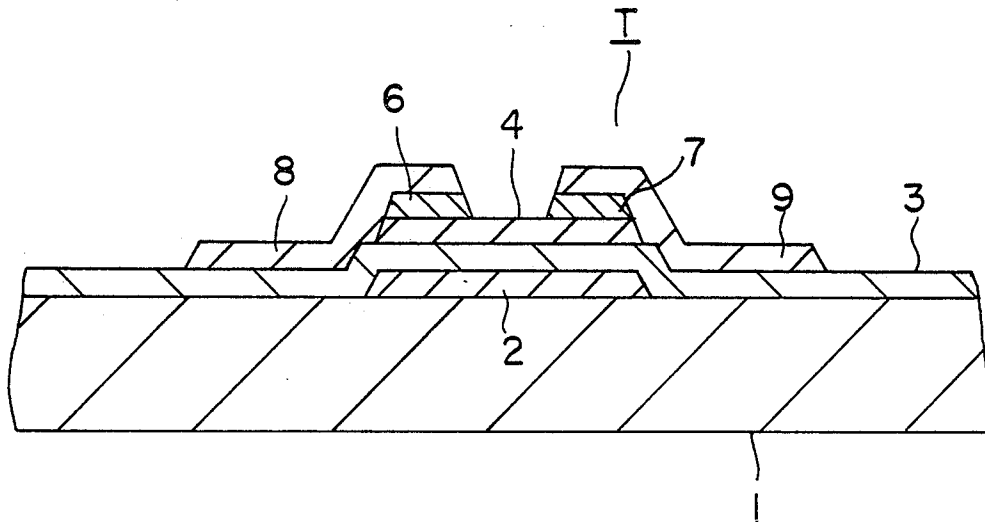
4,425,572	1/1984	Takafuji	.....	357/23.7 X
4,609,930	9/1986	Yamazaki	.....	357/23.7
4,746,628	5/1988	Takafuji	.....	357/2 X
4,752,814	6/1988	Tuan	.....	357/2 X
4,757,361	7/1988	Brodsky	.....	357/2 X

Primary Examiner—Martin H. Edlow
Attorney, Agent, or Firm—Irell & Manella

[57] ABSTRACT

A thin-film transistor comprising an insulating substrate; an opaque metal gate electrode disposed on a portion of said insulating substrate; a gate insulating layer disposed on said insulating substrate including said gate electrode; and a-Si semiconductor film disposed on the portion of said gate insulating layer, said a-Si semiconductor film having been formed to attain self-alignment with respect to said gate electrode; a-Si contact films constituting source and drain regions, respectively, with a gap therebetween disposed on said a-Si semiconductor film, the outer end of each of said contact films being formed to attain self-alignment with respect to said gate electrode; source and drain electrodes, respectively, disposed on said source and drain regions, the thickness of each of said a-Si semiconductor film and said a-Si contact film being 100 Å or more and the total amount of thicknesses thereof being 1,000 Å or less.

3 Claims, 6 Drawing Sheets



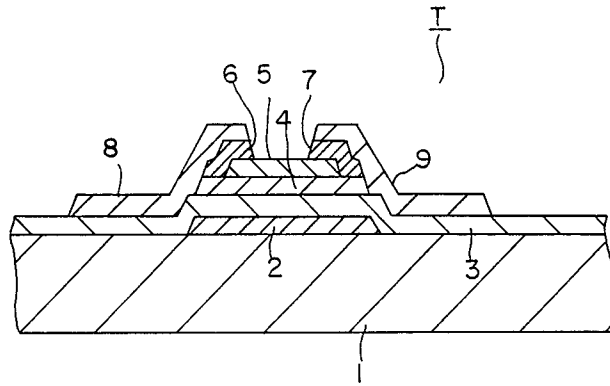


FIG. 1

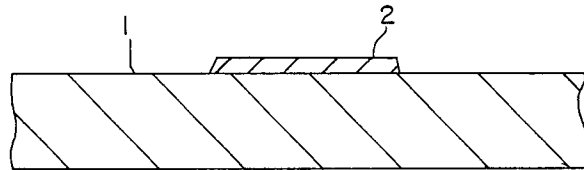


FIG. 2

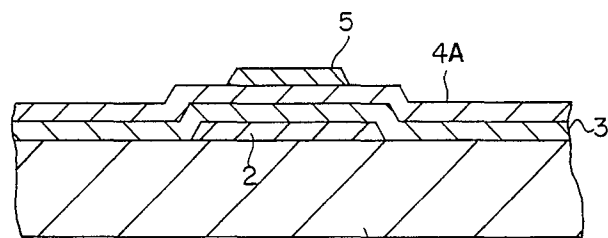


FIG. 3

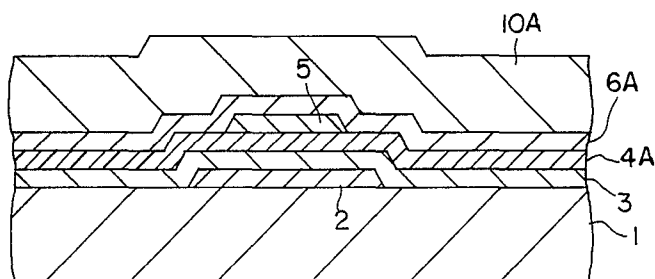


FIG. 4

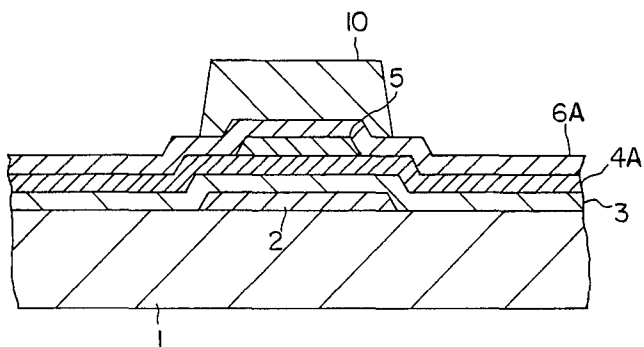


FIG. 5

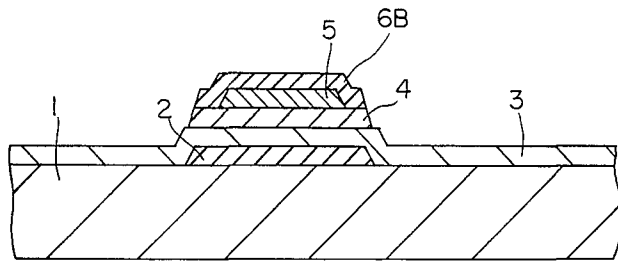


FIG. 6

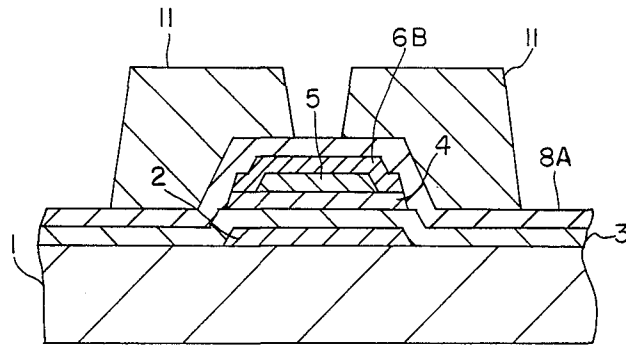


FIG. 7

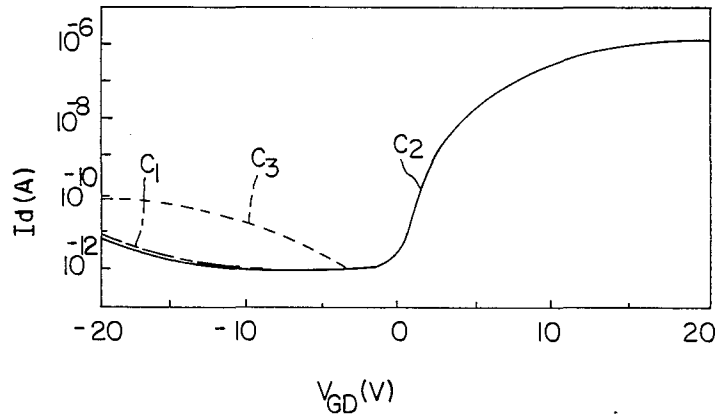


FIG. 8

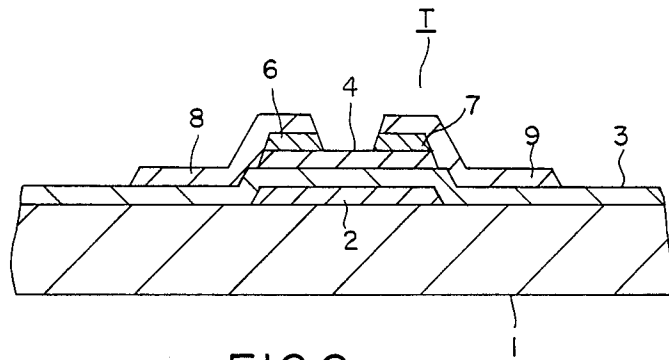


FIG. 9

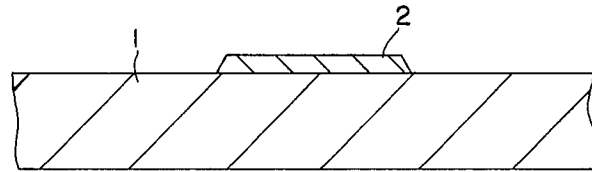


FIG. 10

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.