

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD. AND SAMSUNG ELECTRONICS
AMERICA, INC.
Petitioner

v.

INVENSAS CORPORATION
Patent Owner

U.S. Patent No. 6,054,336

**PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 6,054,336**

TABLE OF CONTENTS

Contents

I.	INTRODUCTION	1
II.	MANDATORY NOTICES UNDER 37 C.F.R.....	2
III.	PAYMENT OF FEES UNDER 37 C.F.R.....	4
IV.	GROUND FOR STANDING.....	4
V.	PRECISE RELIEF REQUESTED	4
VI.	OVERVIEW OF THE RELEVANT TECHNOLOGY	5
VII.	THE '336 PATENT.....	10
	A. The Patent Specification.....	10
	B. Prosecution History	14
VIII.	LEGAL STANDARDS	15
	A. Claim Construction	15
	B. Level Of Ordinary Skill In The Art.....	16
IX.	OVERVIEW OF PRIOR ART	16
	A. U.S. Patent No. 5,428,231 (“Tanaka”) (Ex-1006)	16
	B. U.S. Patent No. 5,847,460 (“Liou”) (Ex-1005)	23
X.	EXPLANATION OF GROUNDS FOR INVALIDITY	28
	A. Ground 1: Tanaka Anticipates Challenged Claims 1-3	28
	1. Claim 1	30
	2. Claim 2	53
	3. Claim 3	54
	B. Ground 2: Tanaka In View Of Knowledge Of A POSA Renders Obvious Challenged Claims 1-3	55

C.	Ground 3: Tanaka In View Of Liou Renders Obvious Challenged Claims 1-3	59
1.	Motivation To Combine Tanaka And Liou	59
2.	Claim 1	67
3.	Claims 2-3	73
XI.	SECONDARY CONSIDERATIONS OF NON-OBVIOUSNESS	73
XII.	CONCLUSION.....	74

LIST OF EXHIBITS

1001	U.S. Patent No. 6,054,336 (“the ’336 Patent”)
1002	Declaration of Dr. Miltiadis Hatalis
1003	Curriculum Vitae for Dr. Miltiadis Hatalis
1004	Prosecution File History of U.S. Patent No. 6,054,336
1005	U.S. Patent No. 5,847,460 (“Liou”)
1006	U.S. Patent No. 5,428,231 (“Tanaka”)
1007	Nakamura et al., “A Single-Layer Metal-Electrode CCD Image Sensor,” Digest of technical papers of the 1995 IEEE International Solid-State Circuits Conference, pp. 222-223.
1008	Ben G. Streetman, <i>Solid State Electronic Devices</i> (Prentice Hall 1995)
1009	Ted Kamins, <i>Polycrystalline Silicon for Integrated Circuit Applications</i> (Springer 1988)
1010	W. Maly, <i>Atlas of IC technologies: An Introduction to VLSI Processes</i> (Benjamin/Cummings 1987)
1011	Sorab K. Ghandhi, <i>VLSI Fabrication Principles</i> (Wiley 1983)

I. INTRODUCTION

Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. (collectively “Samsung”) request *inter partes* review (“IPR”) of Claims 1-3 of U.S. Patent No. 6,054,336 (“the ’336 Patent”; Ex-1001), assigned to Invensas Corporation (“Patent Owner”).

The ’336 Patent claims a semiconductor fabrication process that uses “spacers” to form conductor patterns having dimensions smaller than those that can be formed using lithography and masks. Ex-1001, Claim 1. During prosecution, the applicant argued that Claim 1’s combination of steps — including forming spacers by etching “auxiliary windows” in a “first dielectric layer,” adding a “second layer,” “anisotropic etching of this second layer” to form spacers, and then using the spacers to form “very narrow conductor tracks” — taught over the prior art cited by the Examiner. Ex-1004, 65-72.¹ The Examiner accepted these arguments and allowed the claims. *Id.*, 73-76.

However, the ’336 Patent’s combination of steps for using spacers to create conductive patterns with small dimensions was known before the ’336 Patent’s priority date of May 29, 1997. For example, these steps were disclosed in prior art

¹ All citations to Ex-1004 are to the repaginated page numbers applied to the File History by Samsung.

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.