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FAIRCHILD RESEARCH & DEVELOPMENT

LIST OF TECHNICAL MEMORANDUMS

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258	Air Analysis During Cleaning of Furnace Used for Metallizing Beryllium Oxide Ceramic Package Components	B. Yurash	8/8/66

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259	Preferred R&D Laboratory Procedure for Measuring the Absolute Responsivity of Photodiodes and Phototransistors to an Accuracy of About ±3%	R. Dyck	8/10/66
260	Printed Circuit Board Etch Characteristics	E. Duffek E. Armstrong	9/7/66
261	Investigation of MOS Evaluation Procedures for the Aluminum EB Evaporator	J. Kelley	8/18/66
262	X-ray Topographs of GaAs Wafers	E. Meieran	8/16/66
263	Residues on General Precision Diode Leads	E. Duffek	9/20/66
264	Use of Beryllium Metal on Silicon Devices as a Possible Replacement of Aluminum: A Literature Survey	A. Lewis	9/20/66
265	Effects of Fast Neutron Radiation on TO-502 2 Amp h_{FE}	L. Danley	9/22/66
266	Special Problems in Fabrication of TO-502 VHF Power Transistors	L. Danley	8/20/66
267	Special Problems of the DTuL 9969	B. Frescura	9/27/66
268	The Etching of Gallium Arsenide in Bromine/Methanol	W. Lehrer	10/5/66
269	Reflection X-ray Topograph of GaAs Deposited on Ge	E. Meieran	9/30/66
270	Drift Experiments on RCA MOS Capacitors	D. Fitzgerald A. Grove	10/20/66
271	Special Problems in Fabrication of TO 115-npn 20V LV_{CEO} Radiation Tolerant General-Purpose Amplifier	D. Myers	10/14/66
272	Preliminary Evaluation of Illumination	E. Blome S. Fok	10/17/66
273	Photoresist and Etch Systems for SiO_2-Al_2O_3 and 7059 Glass Dielectric Films	A. Engvall	10/18/66
274	Evaluation of Prototype R&D Resist Dispenser	T. Menzies	10/18/66

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275	Some Qualitative Aspects of Electrotransport Let Failure	H. Kroemer	11/3/66
276	Pattern Plating Flip-Chip Ceramic Substrates	E. Duffek	10/18/66
277	Status of Scanning Electron Microscopy	E. Meieran	11/7/66
278	Cause of Glass Breakage in Molded Diode Arrays	R. Harline	11/11/66
279	Removal of Photoresist from Metal & Oxide Surfaces	C. Gunter P. Portesi	11/15/66
280	Emitter-Base Junction Degradation in the P-1000 Phototransistor During Power Lifetest	R. Dyck	11/23/66
281	Evaluation of GI "Herculeads" Beam Lead Diodes	I. Blech	11/29/66
282	Structure of Sputtered Thin Ta Films	E. Meieran	12/13/66
283	Life Test Comparison of Metal Can Packages with Standard Epoxy H586 Encapsulation for Three Fairchild Devices (1250, 4204, 0054)	M. Dumesnil	12/6/66
284	Rapid Separation of Marked Bad Dice	R. Olberg	12/6/66
*285	Silicon Monoxide Films as Transparent Working Plates	W. Lehrer	12/9/66
286	Single Position Spin Coater	C. Gunter W. Hokeness	12/9/66
287	Design and Development of the 0058	J. Archer	12/20/66
288	Properties and Microstructural Characteristics of Beryllium Oxide-Part I	M. Mendelson	12/19/66
289	Improved Dicing Yields	E. Meieran	12/13/66
290	CATV Systems	B. Jones	12/20/66
*291	Hard Surface Mask Output(s) on a Rapid Turn Around Basis	E. Blome	1/26/67
292	Pico-Amp Diode Package Evaluation	R. Hurlston	1/27/67
293	Heat Treatments to Lower Aluminum to Aluminum Interface Resistance	G. McNeil	1/23/67

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294	Minimizing Horizontal Spiking of Aluminum During Alloying	G. McNeil	1/23/67
295	Use of Ceramic Liners in MOST Furnaces	B. Deal	1/24/67
296	Suggested Devices for Linear RF Power Applications	B. Jones	1/25/67
297	Effects of $POCl_3$ Predep Temperature on Emitter Profile	D. Henderson	1/24/67
*298	Carrousel Plating of Diode Leads	E. Armstrong	1/25/67
299	MOS Circuit Design in the Presence of Surface Inversion Due to Metal Inter-Connection Lines	D. Frohman/ Bentchkowsky L. Vadasz	1/26/67
300	Durability of Solder Glasses: I. Solubility	D. Forbes	1/30/67
301	Corrosion of Heat Exchange Tubing, Hong Kong Plant	B. Yurash	1/7/67
302	Dust Analysis, Mt. View Manufacturing Plant	B. Yurash	2/9/67
303	Aluminum Films on Thermal Oxides Evaporated by RF Heating	B. Deal	2/10/67
304	Report on the 3rd "Informal Conference on Active Microwave Effects in Bulk Semiconductors"	H. Koremer R. Rao R. Solomon	2/17/67
305	TO-107 Small Signal npn Transistor	B. Kennedy	3/3/67
306	Oxidation Schedule for PO Package (Needle Bar Sleeve)	W. Phy	2/16/67
307	Beryllium Contamination During Fine Polishing of Beryllium Oxide	M. Mendelson	2/21/67
308	Special Problems in Fabrication of TO-117 npn UHF Oscillator	D. Myers	3/3/67
309	Experiments on the Effectiveness of Diffused Resistors as a Gate Protection	E. Wilder L. Vadasz	2/17/67
310	Problems of the TO-400 (TO-901) and TO-402 Discrete Emitter pnp Power Transistors	J. Muschinske	3/10/67
*311	Hard Surface Mask Processes	E. Blome	3/8/67

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312	Lapping and Backlapping Process Change and Standardization	D. McCall	3/1/67
*313	KFTR Life-Off of 1 μ Aluminum	G. McNeil	4/17/67
314	Factors Determining SCR and TRIAC Die Size and Cost	W. Kauffman	3/27/67
315	Application of Ultrasonic Bonding with Aluminum Wire to the Epoxy Package	R. Olberg	9/14/67
316	Stained Leads: Electro-Mex, Tijuana	E. Duffek	9/8/67
317	The Determination of Concentration Profiles by Anodic Profiling	D. Henderson	4/21/67
318	The Removal of Surface Debris from Mounted Dice	J. Lawrence	3/21/67
319	Conductive Epoxy and Silver Migration	L. J. Kabell	3/27/67
*320	Comparison of Castorex 11-2 (R&D Epoxy) vs Hysol 586	R. Olberg	3/17/67
321	High Pressure Mercury Arc Lamp Exposure Light Variations	E. Blome	3/31/67
*322	Trip Report, Visit to Bell Telephone Laboratories, Allentown, Pa, and Murray Hill, NJ	C. Bittmann I. Blech R. Tucker	4/5/67
323	Special Problems of the TO-303	J. LeGall	4/10/67
324	Special Problems of TO-306	F. C. Jones	4/10/67
325	Spike Defects on Epitaxial Si Wafers	E. Meieran	4/2/67
326	Results of Microprobe Analysis of Glass Masks	E. Meieran	3/6/67
327	Special Problems of D9100	J. Schroeder	4/30/67
328	Status Report on High Voltage Mesa Rectifiers	R. Hurlston	4/13/67
329	Power Transistors with Discrete Nichrome Resistors - Control of Resistor Value and Burnout Current	J. Muschinske	4/17/67
330	Cancelled		

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331	Diode Leads - Solder Dipping and Solderability Problems	E. Duffek	6/28/67
332	Terminology Associated with MOS Surface Charge Measurements and Related Processing	P. Castro M. Sklar B. Deal	5/9/67
333	Scratch Resistant Protective Glass on Fairchild Light Pulser Arrays	W. Lafky	5/12/67
*334	Evaluation of a Transparent Silicon Monoxide Film Process for use with Visually Transparent Masks	E. Blome	5/10/67
*335	Evaluation of SGS Epoxy Resin Systems	R. Olberg	5/18/67
336	Boron Pin-Hole Diffusions in Integrated Circuits	J. Lawrence	6/2/67
337	Thick Film Production Line	M. Dumesnil	6/2/67
338	Preliminary Evaluation of Gallium Arsenide MOS Field Effect Transistors	C. Bittmann	6/5/67
339	Sodium Content of Materials used in Device Processing	B. Yurash	6/7/67
340	Evaluation of Lens for Projection Printing Leitz Canada, C00003 UNELCAN C91, f/4.5 72 mm	C. Van Ness	6/6/67
* 341	Sputtered Silicide Resistor Status	R. Waits	6/8/67
342	Addendum to Technical Memorandum #239 "Comments on the Ni-Cr Process"	K. Gohring	6/19/67
343	TO-803 Transfer Memo	W. Kauffman	6/19/67
344	Combination Metal of Bimetal Evaporation Masks	M. Focht	6/20/67
345	The Cause and Prevention of Star Defects in Integrated Circuits	J. Lawrence	6/22/67
346	Report on Visits to European Laboratories	H. Kroemer	7/12/67
347	New Film Element Analysis	F. Greene	7/6/67
348	Procedure for Cleaning Headers Rejected for Electrical Leakage	J. Lawrence	7/25/67

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349	Boron Predeposition-Wafer Storage Defects	J. Lawrence	7/14/67
350	Current Density Limits of Thick Aluminum Stripes in the FLA-610 and FLA-630	R. Dyck W. Lafky	8/4/67
351	Evaluation of Mt. View FT-0057 MOST	R. Hurlston	7/25/67
352	Cancelled		
353	SAM Stack Design Report	J. Friedrich	8/25/67
354	Some Causes of Inadequate Gold Alloying	J. Lawrence	8/23/67
355	h_{FE} Degradation Resulting from Emitter-Base Junction Avalanching	D. Fitzgerald	8/28/67
356	72-Bit Memory Array Fabricated with Redundant Rows of Cells for Yield Enhancement	J. Angell	9/7/67
357	On Dislocations in Silicon Semiconductor Devices	J. Lawrence	11/20/67
358	Dust Counts, R&D and Military Products Assembly Areas	B. Yurash	10/17/67
359	Sodium Content of Barnstead Cascade Wash System	B. Yurash	10/17/67
360	Contamination During Wafer Drying	P. Portesi	10/25/67
361	Competitive Gallium Arsenide Infrared Light Emitter Diode - RCA TA-7008	M. Khambaty	10/25/67
362	Technique for Achieving Uniform Aluminum Etching	R. Dorilag G. McNiel	10/23/67
363	Photoresist Removal by Low Temperature Ashing Using Electrically Excited Oxygen	D. Davis B. Yurash	10/18/67
364	Shift of C-V Characteristic in MOS Capacitors - More Data on Time Temperature Dependence	B. Raney	10/20/67
365	LIC Component Optimization, µA725 Kit Part Evaluation	B. Kennedy	11/9/67
366	Evaluation of TO-18 Plastic Header	R. Olberg	11/9/67
367	The Effects of the Graded EB Diode on Base Transit Time	D. Duncan	11/27/67

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368	Etching Fairpak Substrates with AZ 345 Photoresist	E. Duffek	11/20/67
369	Evaluation K+S 688 Telefunken-Zeiss Projection Mask Alignment System	G. McNiel F. Rosengarten	12/5/67
370	Lifetime Measurements in Epitaxial Layers	W. Kohler	12/8/67
371	Cracking in Silicon Nitride Films	W. Kohler	12/29/67
372	Stained Posts: Electro-Mex, Tijuana	E. Duffek	11/29/67
373	Wrinkled Aluminum Caused by Copper Contamination	R. Waits	12/8/67
374	Base Transit Time for Inverted Mode Operation of Bipolar Transistors	D. Duncan	12/13/67
375	Minimizing Aluminum to Silicon Contact Resistance	G. McNiel	12/13/67
376	Electrochemical Society Meeting Chicago, Illinois - October 15-20, 1967	H. Sello	1/12/68
377	Contact Spring Pressure and Reliability Test	W. Willis	12/13/67
378	Pyrolytic Deposition of Silicon Nitride in a Flokol Reactor	W. Kohler J. Flood	12/28/67
379	Specific Resistance, Particle and Bacteria Colony Counts and Sodium Content of Deionized Water at R&D	R. Kouyoumdjian F. Grasso	1/1/68
*380	TO-109 Development	J. Archer	1/17/68
*381	Hermeticity of Epoxy Sealed Ceramic Packages	R. Olberg	1/1/68
382	Improvement of Diode Array Glassing Process	R. Rusert	12/28/67
383	Synthesis of Arsenious Chloride	R. Kouyoumdjian	1/15/68
*384	The Etching of Silicon Nitride in Phosphoric Acid with Silane Primes Photoresist as a Mask	A. Engvall	1/17/68
385	Evaluation of Device Development Silicon Nitride--Hot Tube and RF Systems	B. Deal	1/17/68

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386	Possibility for the Determination of Sodium Content of Water Derived from the Condensation of Water Vapor from Oxidation Furnaces by Measurements of Specific Resistance	R. Kouyoumdjian B. Yurash	1/30/68
387	Wafer Etching and Inspection for Epitaxial Growth	W. Kohler	2/8/68
388	Conduction and Switching Mechanism in Glass Films	M. Dumesnil	2/5/68
389	β Test for High Gain Bipolar Transistors	R. Whittier R. Jenkins	8/23/68
*390	I. Low Q vs High Q Emitter Processing of npn Transistors II. Processing Effects on npn Transistor Noise	P. Downing R. Whittier	2/29/68
391	Cancelled		
392	Maximizing the Gain Bandwidth Product of RC Coupled IC MOS Tetrodes	R. Lane	2/29/68
393	DIED 6 Head Spinner	G. McNiel	3/4/68
394	Developments in Fine-Line Patterning on Metallized Ceramics Processing of the CPE-1003 Substrate	E. Duffek M. Focht	3/4/68
395	Design of Low Noise Transistors	R. Whittier	3/11/68
396	Definition of Diode Array "Zapping" Problem	R. Rusert	3/12/68
397	Dielectric Strength of Insulators on Silicon	B. Deal	3/19/68
398	Stress Performance of #10 Glassed npn 1250	M. Dumesnil	4/2/68
399	Preliminary Evaluation of Aluminum-Silicon Schottky Barrier Diodes	A. Yu E. Snow P. Downing	3/22/68
400	Temperature & Humidity Resistance of Typical Photo-Sensing Array Packages Sealed with Film Epoxy (Enviroseal)	B. Phy	3/18/68
401	Vapox Passivation by Means of Phosphorus Glass	C. Steele D. Frohman/ Bentchkowsky	3/25/68

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402	Cause and Prevention of Soft Junctions in Integrated Circuits	J. Lawrence	3/21/68
403	Feasibility Studies of Si-Gated MOS Structures	T. Klein	3/25/68
404	Post Masking and Pre-Diffusion Wafer Cleaning	G. McNiel F. Hall	3/29/68
405	Improvement of Air Isolation Glassing Process	R. Rusert	4/29/68
406	Characterization of 2 kΩ/□ Silicon Chromium Resistors	D. Oberlin K. Stafford	3/3/68
407	Distillation of Arsenious Chloride (Part I)	R. Kouyoumdjian	4/8/68
408	4500-29 Test Array Analysis	J. Campbell R. Carlstead	4/8/68
409	Variation of Drift VI and Phosphorus Glass Polarization with Alloying Temperature	C. Steele	5/10/68
410	A Delineating Technique for Stain Films on Aluminum Pads	J. Lawrence	5/7/68
411	Correlation Between MOS Transistor and C-V Measurements	D. Frohman/ Bentchkowsky	5/17/68
412	Properties of Mo-Mn Metallization on Alumina - Initial Investigation	M. Mendelson	5/14/68
413	On the Theory and Measurement of Base Current Due to Recombination of Excess Carriers in the Neutral Base	J. Downing R. Whittier	5/15/68
414	Stabilizing Bipolar Arrays with Silicon Nitride	D. Pilling	5/21/68
415	Comparison of Magnetics and Semiconductor Memory Systems	C. Bittmann	5/24/68
416	Test Structure for the Study of Package Related Failure Mechanisms	E. Snow	5/29/68
417	Electrochemical Society Meeting Boston, Massachusetts - May 5-9, 1968	B. Deal L. Bernstein B. Cairns E. MacKenna	6/4/68

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418	Quality Control of Anhydrides Used in Epoxy Cure	B. Yurash R. Ceynowa	6/4/68
419	Low Defect Masking Processes	A. Mills	6/12/68
420	Encapsulation of FPT-100 Phototransistors with Nupol Thermosetting Acrylic	W. Phy	6/21/68
421	Thermal Resistance of Beam Leaded Devices on Dual In-Line Packages	M. Mendelson	6/18/68
422	Stress Cracking Failure of Polypropylene Waste Piping	B. Yurash	7/8/68
423	Oxidation Rates Applicable to Bipolar Circuit Processing	J. Podell	7/26/68
424	Fairchild Memory Study (Magnetic Films on Silicon) *Iowa State Univ. EE Dept.	A. V. Pohm* C. A. Bittmann	7/31/68
425	Evaluation of Kodak Photoresist MX-741 (A Clarified KMER)	A. Mills	8/5/68
426	Silane Priming for the Prevention of KMER and DTFR Lifting in Production	A. Engvall	8/19/68
427	Evaluation of Diamond Band Saw	W. Phy	8/9/68
428	Phosphorus Penetration into Silicon Dioxide from a $POCl_3$ Source	J. Podell F. Rosengarten	8/15/68
429	Sputtered Si-Cr Resistive Films	R. Waits	8/15/68
430	A New Technique for Delineating Sputtered Mo-Si 200 Ω/□ Thin Film Resistors	W. Khadder J. Weber	8/12/68
431	Saturation Resistance and Current Gain as a Function of Collector Geometry of a CML Transistor	P. Doshi	8/23/68
432	X-Ray Topographs of GaAs Wafers	E. Meieran	9/5/68
433	Anisotropic Etching of Silicon	R. Rusert	8/23/68
434	Cancelled		
435	Effective Boron $\sqrt{D}$ with One Hour Oxidations	F. Rosengarten D. Peltzer	9/11/68

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436	Solvent Resistance of Acrylic Encapsulated FPT-100 Phototransistors	W. Phy	9/18/68
437	Note on the Polishing of Solution Grown GaAs Epitaxial Layers	R. Solomon	9/13/68
438	Particles from Thread Lubricant--An Alert!	H. Sello	9/11/68
439	Evaluation of Stripping Agents for Plastic Packages	R. Olberg	9/13/68
440	Autonetics FPT Package: Moisture Resistance Failures	E. Duffek	9/11/68
441	Notes on the Process for Etching Silicon Nitride	A. Engvall	9/23/68
442	Performance of GaAs Bulk Effect Oscillators	M. Shyam	9/3/68
443	Avalanche Degradation of h_{FE}	B. McDonald	10/31/68
444	Failure Analysis of D9100 Diode Array	R. Rusert	10/4/68
445	Evaluation of 250 mm Ultra-Micro-Nikkor f/1.0 1:1 Lens (Serial #102302) for Projection Printing	S. Fok J. Winding	10/25/68
446	A Comparison of Non-Epitaxial Deposited Si Films	E. Meieran	11/4/68
447	Sputtered Silicon-Chromium Resistor Films on Silicon Oxide and Silicon Nitride Surfaces	P. Fehlhaber	11/15/68
448	Sodium Content of Materials: Addendum #1	B. Ceynowa	11/14/68
449	Very Low Power Circuits	S. Townsend	11/19/68
450	Aluminum-Silicon Schottky Barrier Diode Life Test	A. Yu	11/19/68
451	Electrochemical Society Meeting Montreal, Canada - October 6-11, 1968	B. Deal	11/19/68
452	Epoxy Die-Down for Hybrids - A Final Summary	S. Cagnina	11/22/68
453	Integrated Circuit High Ohms/Square Diffused Resistors	J. Podell	12/9/68

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454	Epitaxial Growth on (100) and (111) Substrates	T. Swanson E. Yim	12/2/68
455	The Measurement of Contact Resistance	D. Duncan	12/10/68
456	Evaluation of Commercial Molding Powders	R. Olberg D. Harline	12/4/68
457	FAE Package: Moisture Resistance Failure II. Base Header Corrosion and Glass Cracking	E. Duffek	1/17/69
458	The New 1/10X Micro-Tropar Lens	S. Fok J. Winding	12/12/68
459	Effect of Post-Vacuum Impregnation of Molded Dips on Moisture Penetration	R. Olberg D. Harline	12/18/68
460	Calculation of High Frequency Available Gain and Noise Figure of Bipolar Devices	M. Purnaiya	12/20/68
461	TO-122 npn Transistor	D. Duncan	1/69
462	Degree of Cure of Castorez 11-2 Epoxy as a Function of Time and Temperature	R. Olberg	1/20/69
463	Comparison of Gold-Doped Transistors	R. Aldrich R. Foglesong	5/21/69
464	The Effect of Emitter Area on V_{BE} and TC of V_{BE} Matching for npn Transistor Pairs	D. Oberlin	1/28/69
465	The Hitachi npn 2SC458. An Analysis	M. Dumesnil W. Kauffman B. Jones	2/16/69
466	Uniformity of Photoresponse of Linear Diode Arrays	W. Lafky	1/30/69
467	Report on the Atlanta Workshop on GaAs Microwave Oscillators, January 28-29, 1969	M. Shyam	2/17/69
468	Cancelled		
469	Gold Etch Back Technology for Producing Multichip Substrates	E. Stefanowicz	3/14/69
470	Contaminants in Epoxy Resin	R. Olberg	3/3/69

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471	Comparison of the Applied Materials Technology "Silox" Process and the Fairchild Phosphovapox Process	M. Barry	3/11/69
472	Vapor Phase Etching of Silicon Oxides	A. Engvall	3/19/69
473	Projection Printing with the Model #1 Projection Alignment Jig	A. Engvall	3/25/69
474	Report on Visits to SPSE Seminar, HLC Eng. Co., and Jade Corp., March 6 & 7, 1969	S. Fok	3/26/69
475	Simple Empirical Method for Estimating Thermal Resistance Component of Ceramic Substrate	S. Cagnina	3/28/69
476	Properties of Silicon Nitride Films	V. Rodriguez	4/11/69
477	Evaluation of Applied Materials Technology Phosphovapox Films	B. Deal M. Sklar E. MacKenna	4/14/69
478	Some Special Designs of Hot-Electron Diodes (HEDs)	A. Yu	4/16/69
479	APS March 1969 Meeting	A. Yu	4/22/69
480	Realloy of Aluminum Contacts to Bipolar Transistors	P. Downing	4/14/69
481	Evaluation of "Isodiode" of Isofilm International	A. Yu	4/17/69
482	Optimization of Aluminum Deposition Thickness and Uniformity in Fairchild "Sputter Clean" Vacuum Systems	L. Fritz	3/20/69
483	Detection and Prevention of Carbon Impurities in Silicon Dioxide Prior to Silicon Nitride Growth	W. Kohler	5/7/69
484	Re-evaluation of the R&D Copy Camera Preliminary Test Results	S. Fok J. Winding	6/4/69
485	Ineffectiveness of Aluminum as a Sodium Barrier	B. McDonald	5/26/69
486	Electrochemical Society Meeting New York: May 4-9, 1969	B. Deal	6/12/69

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487	Increasing the Efficiency and Decreasing the Overall Cost of Using X-ray Orientation and Radiography at Fairchild Semiconductor	E. Meieran	6/18/69
488	Varo Prototype Pattern Generator Evaluation	S. Fok	6/20/69
489	Pyrolytic Silicon Nitride Deposition in a Conveyor Belt Furnace	W. Kohler J. Flood	6/24/69
490	Further Verification of a Model for Diffusion from Doped Oxides	M. Barry J. Manoliu	6/27/69
491	Temperature Measurement in an RF-Heated Reactor	E. MacKenna P. Kodama	6/26/69
492	Junction Gettering with Phosphovapox	M. Barry	7/3/69
493	Direct Plotting of Carrier Concentration Profiles	P. Hower	7/10/69
494	Epoxy Adhesive Sealants for Ceramic Packages	R. Olberg	7/14/69
495	Drift in Aluminum - Silicon Contact Resistance	E. Yim	7/16/69
496	Metal Cracking Observed on MOS Integrated Circuits	D. Forsythe	8/4/69
497	Design of Schottky Barrier Diode pnp Transistor	M. Lenzlinger	7/18/69
498	Bulk GaAs Evaluation	E. Meieran	7/28/69
499	High Gain-Bandwidth Phototransistor	G. Slaten	8/15/69
500	Phosphorus Penetration into Vapox from $POCl_3$ Source	M. Barry	8/13/69
501	The Effect of Heated Substrate Aluminum Evaporation on MOS Stability	M. Sklar	8/26/69
502	Gun Effect Oscillator - Detailed Experimental Results	M. Shyam	8/28/69
503	Residual Gases During Filament Evaporations	J. Campbell	10/3/69
504	T-0107 Small Signal, High Gain Transistor	G. Sloan	9/2/69

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506	Geometrical Shadowing Effects During Deposition of Thin Al Films Over Steps	I. Blech J. Campbell	9/22/69
507	Analysis and Control of Deionized Water Used for Semiconductor Processing	B. Yurash	9/25/69
508	The Measurement of Contact Resistance Using Mask-Set CRTA	D. Duncan	10/10/69
509	A Method to Limit the Spectral Response of Silicon Photosensors to the Visible Range	W. Phy	9/26/69
510	Evaluation of Silicone Junction Coatings	R. Olberg	10/15/69
511	Autopsy and Analysis of Philco LIC Package	R. Olberg W. Wandry	10/15/69
512	Preliminary Evaluation of AMT's Infrared Heated Silicon	E. MacKenna	10/15/69
513	Recent Developments Concerning the Nikon 1:1 Projection and Other Lenses	S. Fok	11/3/69
514	Dependence of Beta on Collector Current for a New Linear Phototransistor Array Design	W. Lafky	10/15/69
515	Dislocations in Si Crystals	E. Meieran	10/15/69
516	Evaluation of Mt. View Clic Si_3N_4 Process	E. MacKenna	11/10/69
517	Leitz 1:1 Lens for Projection Printing	S. Fok J. Winding	11/3/69
518	Stripping Epoxy Encapsulated Devices with Fuming Sulfuric Acid	R. Olberg	11/12/69
519	Controlling Viscosity of Hysol Castorez	R. Olberg	11/14/69
520	"Figure of Merit" for Gate Protection	M. Lenzlinger	11/7/69
521	Current Level Logic or Clamped Mode Logic	D. Duncan	11/28/69
522	Initial Characterization of Collector Diffused Isolation Transistors	G. Spedea	4/20/70
523	Electrochemical Society Meeting Detroit - November 5-10, 1969	M. L. Barry	11/21/69

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524	Comparison Between Reflective and Anti-reflective Chrome Mass	D. Courtis	4/1/70
525	Conference at Freeman Chemical Company on Nupol	W. Phy R. Olberg	11/28/69
526	Out-Diffusion from Diffused Phosphorus Layers	C. Steele	12/1/69
527	Noise in MOS Transistors	S. Hsu	12/10/69
528	Fast Surface States Associated with Si-Gate Processing	P. Castro	12/10/69
529	Residual Gas Analysis During Electron Beam Evaporation	J. Campbell	12/15/69
530	Effect of Substrate Orientation on Poly-Si-Isolation Structures	T. Kamins	12/30/69
531	Optimum Base Shaped Design to Minimize Corner Breakdown of Rectangular Planar Diodes	D. Duncan	12/29/69
532	Ineffectiveness of Polycrystalline Silicon as a Sodium Barrier	B. McDonald	12/15/69
533	Updated Silane Priming Recommendation	A. E. Engvall	1/2/70
534	Gunn Effect Oscillator - Studies Using Mesa Structure	M. Shyam	12/30/69
535	An Improved Method of Anodic Sectioning	D. Duncan	12/29/69
536	Properties of Plastic Materials for Optoelectronic Devices	R. Olberg	1/5/70
537	An Extremely Accurate Backlapping Technique - Waxless Backlapping	D. Oberlin	2/25/70
538	Electrochemical Etching for Dielectric Isolation	D. Oberlin J. Michel	3/30/70
539	Investigation into the Effects of the Tracerlab Plasma Photoresist Dry Stripper-504 on Surface Charges	P. Castro	1/28/70
540	Sodium Masking by Silicon Nitride	V. Rodriguez P. Fleming E. MacKenna	1/26/70

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541	Preliminary Evaluation of Silane Epitaxial Layers Grown on SF_6-Etched Surfaces	T. Kamins	1/20/70
542	Field Plate Design	P. Froess	1/29/70
543	Evaluation of Filaments for Aluminum Evaporation	M. Sklar	2/2/70
544	Evaluation of Toshiba Silicon Microwave Transistors	J. Archer	2/5/70
545	Report on the 1970 GaAs Microwave Oscillator Workshop, St. Louis, Mo.	M. Shyam B. Cairns	2/16/70
546	Trip Report: GaP Technology at Bell Telephone Laboratories	E. Snow R. Solomon J. Raymond R. Zettler	2/20/70
547	Gold Tin Soldered Leads on Packages with all Aluminum Metallizing	E. Stefanowicz	3/19/70
548	Continuous Nitride Process - Some Additional Experiments	W. Kohler	3/25/70
549	Comparison of 680° and 1035°C Poly-Silicon: Electrical Properties	T. Kamins	4/1/70
550	Evaluation of New G.E. Transistor in the TO-92 Package	R. C. Olberg	2/5/70
551	Silicon Nitride Reactors	E. MacKenna	4/13/70
552	A Way to Increase the Field Oxide Threshold on MOS Devices Using a Thin Antimony Layer	D. Cheung	4/1/70
553	Silicon Stains on MSI Devices	E. W. Yim	4/10/70
554	Improvement of Gold-Aluminum Thermocompression Bonds	R. Hansen W. Wandry	4/8/70
555	Frequency Effects in Polycrystalline Silicon	T. Kamins J. Manoliu	4/24/70
556	Chip Protection: High Humidity Reliability Study of a Silicon Nitride Passivated npn Device (TFC 0100) in Epoxy Plastic Packaging	M. Dumesnil	6/5/70

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557	Preparation of Standard Thermox	M. Sklar	5/14/70
558	Preparation of Standard MOS Capacitors	M. Sklar	5/14/70
559	Minimization of Q_o Due to Aluminum Evaporation	M. Sklar D. McCall	5/14/70
560	MOS Capacitance-Voltage Measurement	M. Sklar	5/14/70
561	Orientation of Si Wafers for Maximum Scribing Yields	E. Meieran	5/20/70
562	Evaluation of the Headway Photoresist Spinner, Model AHT3	F. Rosengarten	5/20/70
563	Some Correlations Between MSIA Test Data and 4100 Circuit Parameters	W. Shepherd	5/26/70
564	TFCA 101 Progress Report	J. Shea	5/12/70
565	Chemical Analysis by Atomic Absorption Spectroscopy, Requirements and Limitations	B. Yurash	6/2/70
566	Evaluation of Amaplast Red 2Y Dye Filters in Nupol and Castorez 96-1 Plastic Lens	R. Olberg E. Martich	5/29/70
567	Evaporated Film Profiles Over Steps in Substrates	I. A. Blech	7/1/70
568	Silicon Nitride Deposition in the pnp Flokol Production Reactor	W. Kohler	6/22/70
569	Electrochemical Society Meeting Los Angeles California May 10-15, 1970	M. Barry	7/6/70
570	Epitaxial Growth by Silane Decomposition on Silicon - Boron Doped Oxide Structures	W. Kohler	6/30/70
571	Scribing of Si and GaAs	E. Meieran	7/28/70
572	Resist Scum Formation and Wafer Storage	A. Engvall	7/30/70
573	Self-Scanned Photosensor Arrays	R. Dyck	7/8/70
574	Correlation of Various Humidity Tests	R. Olberg	8/3/70
575	/EPLOT/ and ECAP Output Combining and Plotting Program for use on Tymshare	R. Lane	7/24/70

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576	Elimination of Aluminum Corrosion Around Gold Ball Bonds in Plastic Packages	I. A. Blech	8/7/70
577	Some Practical Aspects of Ellipsometry	C. Dell'Oca	9/1/70
578	Digital Photosensor	D. Hu	7/17/70
579	Deposition Pressure Rate Effects on Aluminum Film Properties	A. J. Learn	9/21/70
580	An Evaluation of the Zicon Photoresist Spray Coater	R. Judd A. Engvall	9/28/70
581	The Effect of Poly-Silicon Deposition Temperature on the Electrical Properties of Silicon-Gate MOSFET Devices	P. Fleming	9/29/70
582	1970 AIME Conference on Preparation and Properties of Electronic and Magnetic Materials for Computers	A. Yu	9/16/70
583	Electromigration in Al-Cu Metallization	I. Blech	10/9/70
584	Reduction of Al Corrosion Around Au Ball Bonds in Plastic Packages	I. Blech	10/9/70
585	100% Photomask Inspection	R. Weigand	10/19/70
586	Electrochemical Society Meeting, Atlantic City, October 1970	C. Dell'Oca	11/20/70
587	Feasibility of Repairing the Unibond Bump System on Ceramic Substrates	R. O'Neill	12/4/70
588	Evaluation of the K&S Automatic Mask Alignment (AUTOLIGN) Jig	D. Davis	2/12/71
589	Design Rules for Thin Film Resistors	R. Waits	1/26/71
590	Residual Surface Films on Single Crystal GaAs by Ellipsometry	R. Fairman	2/11/71
591	Large Capacity Resistance Heated Reactor	T. Kamins D. McCall J. Flood	3/8/71
592	Evaluation of Dough Molding Epoxy on Dual In-Line LIC Devices	R. Olberg	3/8/71
593	Contact Resistivity of Aluminum-Silicon (2%) Contacts on p- and n^+ Silicon	J. Archer	5/5/71

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594	Evaluation of Shipley Developer XP-7110	D. Davis R. Judd	5/20/71
595	Comparison of Six Moderately Priced Scanning Electron Microscopes Under $50K	T. Cass	6/4/71
596	Video Non-Uniformity on First Two Elements of Self Scanned Arrays	L. Walsh	6/9/71
597	cancelled		
598	Electrochemical Society Meeting DCA, May 1971	E. Yim	5/10/71
599	Polycrystalline Silicon Deposited from Dichlorosilane	T. Kamins	7/1/71
600	Anodization of Aluminum to Inhibit Hillock Growth During High Temperature Processing	C. Dell'Oca A. Learn	7/9/71
601	Proposal for Automatic Diameter Control for High Pressure Czochralski Growth	R. Solomon	7/30/71
602	Temperature Coefficients of $2K\Omega$/sq Si-Cr Resistors	R. Waits	8/2/71
603	Channeling of Phosphorus Ions in Silicon	V. Reddi J. Sansbury	8/2/71
604	cancelled		
605	Comparative Evaluation of Epoxy Dough Mold with Commercial Epoxy, Silicone, Phenolic, and Diallylphthalate Molding Compounds	R. Olberg	8/11/71
607	Oxidation of Silicon Nitride	E. MacKenna	8/27/

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608	Electrochemical Society Meeting Cleveland, Ohio - October 1970	Dell'Oca, C.	11/1/71
609	Some Properties of Thick Dielectric Films	Barry, M./ Deal, B.	11/19/71
610	Low Voltage Reference Analysis and Design	Lane, R.	11/30/71
611	Effects of Crystalline Defects on Device Yield	Manoliu, J./ Meieran, E.	12/9/71
612	Photoresist Thickness Measurement by Visible Light Scan	Courtis, D./ Davis, D.	12/9/71
613	Defects in Gate Oxides	Sklar, M./ Person, B.	1/12/72
614	Si_3N_4 Processing-N_{st} and h_{FE} Correlation	MacKenna, E./ Blanchard, R.	1/20/72
615	A New Dielectric Isolation Technique for Bipolar Circuits Using Thin Single Crystal Silicon Films	Kamins, T.	2/23/72
616	Analysis of Motorola Metallization	Meieran, E./ Wandry, W./ Seiferling, J.	3/20/72
617	The Effect of Hydrogen and Steam on Diffusion of Boron and Phosphorus Through Thin Thermal Oxide Films	Sklar, M.	4/17/72
618	Double Crystal X-Ray Topography	Meieran, E.	5/18/72
619	The Effect of Cleaning on the Dielectric Breakdown of Thin Thermal Oxides on Non-Epitaxial Silicon	Sklar, M.	5/31/72
620	"STRIPIT" Plastic Stripping Agent	Olberg, R.	8/18/72
621	Diffusivity Summary of B, Ga, P, As and Sb in SiO_2	Deal, B.	1/12/73
622	Photoresist Study of Kodak MR 747 vs Hunt Waycoat Type II	Neuman, R.	8/21/73
623	Design & Operation of Buried Channel Charge-Coupled Devices	Kim, C.	9/13/73

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624	Correlation of Dark Current Spikes in Charge Coupled Area Imaging Devices with Stacking Fault-Type Crystallographic Defects	E. MacKenna	12/4/73
625	Minimization of Q_o During Hot Substrate Aluminum Evaporation	D. Hess	3/1/74
626			
627	Characteristics of $SiSiO_2$ Interfaces Beneath Thin Silicon Films Defined by Electrochemical Etching	T. Kamins	3/29/7
628	Electrochemical Society Meeting, San Francisco, May 13-17, 1974	B. Deal	6/3/74
629	Spin-On Dry Adhesive for Epoxy Die Attach	R. Olberg J. Bozarth	6/6/74
630	Gordon Research Conference on MIS Systems	D. Hess	9/13/7
631	Effect of Low Temperature Steam Oxidations on the Threshold of Isoplanar Oxides and on the Resulting Oxide Thickness Increase on Thin (1400 Å to 1700 Å) Oxides	D. Hess	9/24/7
632	Characterization of the Dupont Sylck 201, Nickel-Boron Electroless Plate	S. Feltham	9/25/7
633	Effect of Tegal Plasma Photoresist Asher on Oxide Charges	D. Hess	11/7/7
634	Aluminum Corrosion in Plastic Packages. II. The Effect of Mixing and Postcuring of DM-6 and of the Use of Junction Coatings on Moisture Induced Corrosion Failures	R. Olberg	1/25/7
635	Improvement of the Diffusion Barrier Properties of RF Sputtered Ti:W	R. Nowicki	9/22/

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636	Electrochemical Society Meeting, Dallas Texas, October 1975	B. Deal D. Hess	10/24/75
637	Determination of Hydrogen Peroxide in Sulfuric-Peroxide Clean Solution	B. Wong	1/19/76
638	Quantitative Analysis of Phosphorus Concentration in Silicon Dioxide Films Using X-Ray Fluorescence	R. McDonald	2/18/76
639	LSI Metallization	A. Learn	3/10/76
640	Investigation of Blister Formation at the Si/SiO$_2$ Interface During Thermal Oxidation of Silicon in HCl/O$_2$ Atmospheres	D. Hess	3/19/76
641	Electrochemical Society Meeting, Washington DC, May 1976	B. Deal. D. Hess	5/28/76
642	Effect of Low Temperature Plasma Deposited Silicon Nitride as a Protective Barrier to Moisture Induced Aluminum Corrosion	R. Olberg	6/10/76
643	18th Electronic Materials Conference, Salt Lake, Utah, June 1976	D. Baylis	8/13/76
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645	R&D Materials Analysis Lab	R. McDonald	1/28/77
646	Important Developments Presented at the 1977 IITR SEM Symposium Relevant to Fairchild Activities	R. McDonald	7/22/77
647	Dose Control and Uniformity Problems in Ion Implants with Doubly Ionized Species	J. Pierce	8/26/77
648	Soft Bit Failures in CCD RAM's Due to Energetic Nuclear Particles	J. Pierce RESTRICTED DISTRIBUTION	3/27/78
649	The Scaling of NMOS	P.A. Crossley	11/1/78
650	A Review of Current Interconnection Technology	W. Lehrer	12/12/78
651	Stat-of-the Art of Semiconductor Surface Annealing	M. Delfino	7/25/79
651A	Bibliography--Chlorine Oxidation of Silicon	B. Deal	9/19/79

TM652	Implementation of Processing Simulation Programs Suprem II (Verson 03) & Sample	Mruzki/M. Suaya, R.	10/19/79	1539
TM 653	Bibliography--Plasma Etching	Keyser, T. Pėerce, J.	10/25/79	1537
TM 654	Electromigration in narrow aluminum alloy lines: preliminary results	Thomas, M. Pierce, J.	1/12/80	1540
TM 655	Surface annealing bibliography addendum	Delfino, M.	1/25/80	1541
TM 656.	Three techniques for determining the depth of deep and shallow juctions	S. Justi/ J. Bravman	1/30/80	1542
TM 657	Gettering Bibliography	Delfino, M.	3/20/80	1543
TM 658	A Self-Aligned Single Pixel Antiblooming Structur for CCD Image Sensors	Farrier, M.G. Dyck, R.	7/18/80	1545
TM659	Surface Annealing Bibliography Addendum 11	Delfino, M.	8/29/80	1549
TM 660	Investigation of Vertical Register Electrode Shorting in the CCD 2120 Area Imaging Device	Skåar, M.	8/29/80	1548
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TM 662	256K CCD Memory Design: Redundancy & Partial consideration	Venkateswaran, K.	11/5/81	1555
TM 663	PHOSPHOSILICATE GLASS BIBLIOGRAPHY	DELFINO, M · Reifsteck, T. A Lie. L. N.	1/22/81	1553
TM 664	X-ray Lithography Bibliography	Cagan, M	2/4/81	1554
TM 666	Laser Activated Flow of Phosphosilicate Glass	Delfino, M Reifstack, t.a	5/11/81	1560
TM 665	DMOS Power Transistors	Patel, V.	4/29/81	1561
TM 667	Bibliography: Carrier Trapping in Thermal SiO_2	Westphal, S. Razouk, R.	5/21/81	1562
TM 668	A System For The Automatic Wafer Mapping Of Sheet Resistance	A. A. Milgram	6/2/81	1563
TM 669	Surface Annealing Bibliography Addendumm III	Delfino, M	8/13/81	1566
TM 670	Bibliography--Thermal Oxidation of Polycrystalline Silicon	L.N. LIE R.R. Razouk	9/18/81	1569
TM 671.	Monitoring ION Implantation	A. A. Milgram	11/3/81	1570
TM 672	Bibliography--Lift-Off Process	A. A. Milgram	11/6/81	1571

TM 673	The Glassy State and Germano-Silicate Glass	Asif Iqbal	11/16/81	1572
TM 675	Lift-off Process for Achieving Fine Line Metallization-- Part I	A. Milgram	11/23/81	1573
Tm 674	Highlights of Fall Meeting of The Electrochemical Society, Denver, Colo. Oct. 1981	Deal, Bruce and Barry, Michael	11/19/81	1574
TM 676	Bibligraphy Portable Conformable Masking (PCM) Process	M. Cagan P. Leitner	1/8/82	1575
TM 677	A High Resolution Trilevel Photolithographic Porcess	M. Cagan T Keyser	12/18/81	1576
TM 680	Residual Gas Analysis of Dupont Polyimide PI-2555	M. R. Cagan J.A. Major	1/22/82	1577
TM 679	Highlights of Semiconductor Interface Specialists Conf. New Orleans, La,Dec.2-5,'81	Bruce Deal Juliana Manoliu Sylvia Westphal	1/25/82	1579
TM 678	PLASMA ETCHING OF VIAS IN PHOSPHORUS-DOPED CVD SiO_2	D. HANSON t. Keyser J. Pierce	1/12/82	1580
TM 681	Swiching elements for LCD devices	Milgram, A.	3/11/82	1581
TM 682	HIGHLIGHTS OF THE ASTM SYMPOSIUM ON SILICON PROCESSING, SAN JSOE, CA. JAN. 19-22, 1982	W.M. BULLIS	3/26/82	1586
TM 683	LOCAL OXIDATION OF SILICON METHODS FOR MINIMAL LATERAL OXIDATION	PRESSACCO,S RAZOUK, REDA	5/25/82	1589
TM 684	Lift-Off process for achieving fine line metallization Part II	Milgram, A,	4/23/82	1587
TM 685	cancelled			
TM 686	Thermal resistance calculations of copper lead frame in a standard 40 lead P.D.I.P.	Harrah, S.	10/82	1594
TM 687	Initial aluminum ball bonding experiments	Harrah, S.	10/82	1595
TM 688	Modeling of Static Parameters in Vertical DMOS Power Transistor	Patel, V.	11/22/82	1596
TM 689	Current Trends in Thermal Oxidation in VLSI Figures	Deal, B.	12/13/82	1597