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Semiconductor device doping

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Semiconductor device fabrication; cf. Integrated-circuit fabrication; Semiconductor device doping

Semiconductor device modeling; cf. Microwave FETs; Schottky diode mixers

Semiconductor diodes

impedance model for quasi-optical diode array. *Sjogren, Lance B.*, + , *MGWL Oct 91* 297-299

Semiconductor diodes; cf. Microwave diodes; Tunnel diodes

Semiconductor heterojunction; cf. Microwave bipolar transistor...

Semiconductor lasers

characterizing intrinsic and extrinsic parameters of semiconductor laser diodes. *Majewski, Marian L.*, + , *MGWL Sep 91* 246-248

laser diode pumping with transmission line transformer. *Carvalho, Marie C. R.*, + , *MGWL Dec 91* 368-370

Signal sampling/reconstruction; cf. Quantization

Silicon materials/devices

microwave reflection measurements on doped semiconductors with picosecond transient radiation. *Robertson, W. M.*, + , *MGWL Dec 91* 371-373

Simulation; cf. Circuit simulation; *Specific topic or device*

Slotline components

velocity-matched LiNbO₃ waveguide optical modulator using inverted slot line. *Yoneyama, Tsukasa*, + , *MGWL Aug 91* 192-194

Solid lasers; cf. Semiconductor lasers

Solitons

28-39 GHz distributed harmonic generation on soliton nonlinear transmission line. *Carman, Eric*, + , *MGWL Feb 91* 28-31

Spectral analysis; cf. Harmonic analysis

Spectral-domain method; cf. Moment methods

Spectroscopy; cf. Microwave spectroscopy

Spheres

active optomechanical media for nonlinear microwave processes comprising 3-D arrays of electrically small particles. *Rogovin, D.*, + , *MGWL Dec 91* 388-390

Spline functions

large-signal analysis of InP-HEMT oscillators using interpolation and harmonic-balance techniques. *Kwon, Youngwoo*, + , *MGWL Dec 91* 365-367

Stochastic processes

microwave imaging method using simulated annealing approach and stochastic relaxation algorithm. *Caorsi, S.*, + , *MGWL Nov 91* 331-333

Strip transmission lines; cf. Microstrip...

Stripline; cf. Coplanar transmission lines

Stripline discontinuities

21-22-GHz compressed-length offset three-resonator bandpass filter using broadside end coupling and suspended-substrate striplines. *Tzuang, Ching-Kuang C.*, + , *MGWL Oct 91* 285-287

Submillimeter-wave (300-3000 GHz); cf. Millimeter-wave (30-300 GHz)

Submillimeter-wave diodes; cf. Submillimeter-wave mixers

Submillimeter-wave filters

1-THz dichroic plates for use at high angles of incidence. *Siegel, Peter H.*, + , *MGWL Jan 91* 8-9

Submillimeter-wave mixers

600 GHz mixer performance analyses at cryogenic temperatures using improved model to compute Schottky diode C-V relationship. *Siegel, Peter H.*, + , *MGWL Jun 91* 129-131

Submillimeter-wave oscillators

large-signal analysis of InP-HEMT oscillators using interpolation and harmonic-balance techniques. *Kwon, Youngwoo*, + , *MGWL Dec 91* 365-367

Superconducting films

electrical characteristics of thin-film $\text{Ba}_2\text{YCu}_3\text{O}_7$ superconducting ring resonators. *Polakos, P. A.*, + , *MGWL Mar 91* 54-56
 evaluating superconducting Ti-Ca-Ba-Cu-O thin-film surface resistance using microstrip ring resonator. *Hietala, V. M.*, + , *MGWL Apr 91* 84-86

Superconducting switches

reflective microwave switch made of Ti-Ca-Ba-Cu-O bridge embedded in coplanar waveguide for signal control applications. *Martens, J. S.*, + , *MGWL Oct 91* 291-293

Superconducting transmission lines

analyzing microstrip lines by flexible approach combining spectral domain method and impedance boundary condition. *Kuo, Chih-Wen.*, + , *MGWL Jul 91* 172-174

effects of superconducting losses on pulse propagation on microstrip lines. *Baiocchi, O. R.*, + , *MGWL Jan 91* 2-4

high- T_c superconducting microstrip lines; peak current and magnetic flux density variations with strip width. *El-Ghazaly, Samir M.*, + , *MGWL Sep 91* 255-257

high- T_c superconducting microwave transmission line fields and currents; rigorous formulation. *El-Ghazaly, Samir M.*, *MGWL Sep 91* 252-254

mode-matching analysis of high- T_c superconducting planar transmission lines taking finite conductor thickness into account. *Heinrich, Wolfgang.*, *MGWL Oct 91* 294-296

Switches/switching; cf. Millimeter-wave switches; Superconducting switches; Waveguide switches

T

Testing; cf. Self-testing

Thin-film circuits; cf. MMICs

Thin films; cf. Superconducting films

Time-domain methods; cf. Finite-difference methods

Transformers

laser diode pumping with transmission line transformer. *Carvalho, Marie C. R.*, + , *MGWL Dec 91* 368-370

Transient analysis; cf. Circuit transient analysis

Transient propagation; cf. Electromagnetic transient propagation; Waveguide transient propagation

Transient scattering; cf. Electromagnetic transient scattering

Transistors; cf. Microwave bipolar transistor...; Microwave FETs; Millimeter-wave FETs

Transitions; cf. Microstrip transitions

Transmission coefficient measurement; cf. Scattering parameters measurement

Transmission-line discontinuities; cf. Microstrip discontinuities; Stripline discontinuities; Waveguide discontinuities

Transmission-line measurements

built-in monolithic circuit using GaAs Schottky diodes for reflection coefficient measurement; results for 5–18-GHz. *Neidert, Robert E.*, *MGWL Aug 91* 195-197

two methods for measuring capacitance of coplanar transmission lines. *Williams, Dylan F.*, + , *MGWL Sep 91* 243-245

Transmission lines

boundary-element analysis of trapezoidal transmission line. *Toland, B.*, + , *MGWL Dec 91* 391-392

calculating characteristic impedance of transmission lines using measured propagation constant. *Marks, Roger B.*, + , *MGWL Jun 91* 141-143

laser diode pumping with transmission line transformer. *Carvalho, Marie C. R.*, + , *MGWL Dec 91* 368-370

Transmission lines; cf. Coaxial transmission lines; Coplanar transmission lines; Coupled transmission lines; Distributed-parameter circuits; Microstrip...; Multiconductor transmission lines; Superconducting transmission lines; Waveguide...

Traveling-wave antennas

integrated 119- μm linear corner-cube array comprising traveling-wave antenna on dielectric membrane suspended in cavity; measured patterns. *Gearhart, Steven S.*, + , *MGWL Jul 91* 155-157

Tunable devices

MESFET-tuned X-band active bandpass filter. *Yamamoto, Yukio.*, + , *MGWL May 91* 110-111

Tunnel diodes

11-GHz self-oscillating mixer using resonant tunneling diode. *Millington, Garry.*, + , *MGWL Nov 91* 320-321

Two-port circuits

two-port FET oscillators with applications to active arrays for spatial power combining; results for 6-GHz linear array. *Birkeland, Joel.*, + , *MGWL May 91* 112-113

U**UHF bipolar transistor amplifiers**

monolithic AlGaAs-GaAs HBT single- and dual-stage ultrabroadband amplifiers. *Ali, Fazal.*, + , *MGWL May 91* 107-109

Ultra-high-speed integrated circuits

subpicosecond pulse propagation on coplanar transmission line structures; experimental and simulation results. *Gupta, S.*, + , *MGWL Jul 91* 161-163

Ultrafast electronics

2.3-ps monolithic GaAs time-domain reflectometer for millimeter-wave network analysis. *Yu, Ruai Y.*, + , *MGWL Nov 91* 334-336

picosecond characterization of bent coplanar waveguides. *Alexandrou, Sotiris.*, + , *MGWL Sep 91* 236-238

V**Variational methods**

analysis of open-type waveguides by vector finite-element method. *Matsuhara, Masanori.*, + , *MGWL Dec 91* 376-378

Very-high-speed integrated circuits

5-Gb/s Si bipolar decision circuit for optical communication. *Swartz, R. G.*, + , *MGWL May 91* 103-106

VHF amplifiers

monolithic AlGaAs-GaAs HBT single- and dual-stage ultrabroadband amplifiers. *Ali, Fazal.*, + , *MGWL May 91* 107-109

VHSIC; cf. Very-high-speed integrated circuits

Voltage-controlled oscillators

Ku-band VCO subsystem using broadband GaAs MMIC push-pull amplifier/doubler. *Martin, Robert.*, + , *MGWL Nov 91* 348-350

W**Waveguide bends**

picosecond characterization of bent coplanar waveguides. *Alexandrou, Sotiris.*, + , *MGWL Sep 91* 236-238

Waveguide components; cf. IMPATT oscillators

Waveguide discontinuities

29.3-GHz cavity-enclosed circular patch antenna fed by aperture-coupled microstrip for microwave circuit integration. *Navarro, Julio A.*, + , *MGWL Jul 91* 170-171

analyzing waveguide aperture coupling by FD-TD method. *Alinikula, P.*, + , *MGWL Aug 91* 189-191

Waveguide junctions

millimeter-wave four-port circulator using distributed coupling effect. *Mazur, Jerzy.*, + , *MGWL Dec 91* 396-398

theoretical three-port coaxial-line rectangular waveguide model and its application to millimeter-wave structures. *Rydberg, A.*, + , *MGWL Dec 91* 393-395

Waveguide junctions; cf. Multiport circuits

Waveguide pulse propagation; cf. Waveguide transient propagation

Waveguide switches

reflective microwave switch made of Ti-Ca-Ba-Cu-O bridge embedded in coplanar waveguide for signal control applications. *Martens, J. S.*, + , *MGWL Oct 91* 291-293

Waveguide transient propagation

28–39 GHz distributed harmonic generation on soliton nonlinear transmission line. *Carman, Eric.*, + , *MGWL Feb 91* 28-31

subpicosecond pulse propagation on coplanar transmission line structures; experimental and simulation results. *Gupta, S.*, + , *MGWL Jul 91* 161-163

Waveguide transitions

modeling analysis of coaxial-to-waveguide adaptor incorporating dielectric-coated probe. *Bialkowski, Marek E.*, *MGWL Aug 91* 211-214

Waveguide transitions; cf. Microstrip transitions

Waveguides

analysis of open-type waveguides by vector finite-element method. *Matsuhara, Masanori.*, + , *MGWL Dec 91* 376-378

rapid pulsed microwave propagation measurements showing that leading edge propagates at phase velocity in waveguide. *Giakos, George C.*, + , *MGWL Dec 91* 374-375

Waveguides; cf. Coplanar transmission lines; Ferrite-loaded waveguides; Microstrip...; Millimeter-wave waveguides; Optical waveguides

Y**Yield optimization**

high-performance, high-yield, low-noise Ka-band MMIC amplifier using 0.25- μm ion-implanted MESFET. *Mondal, J.*, + , *MGWL Jul 91* 167-169