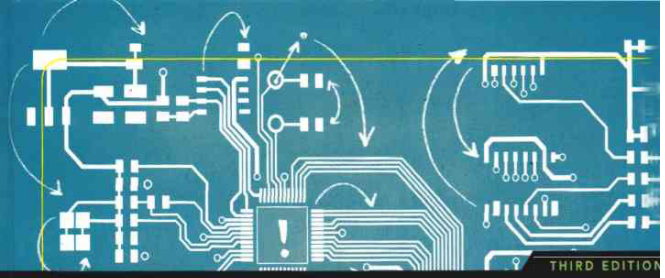

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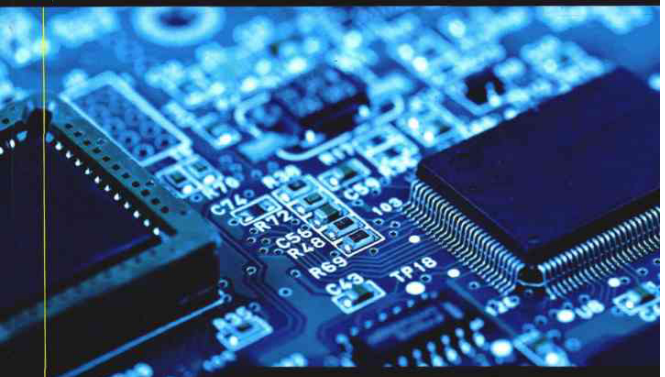
MICROELECTRONIC CIRCUITS

ANALYSIS AND DESIGN



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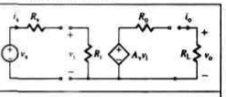
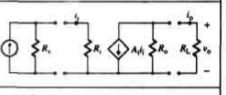
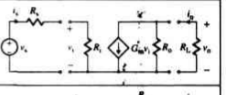
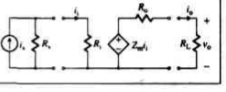
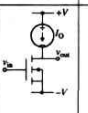
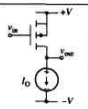
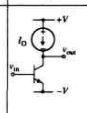
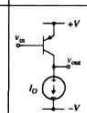
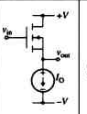
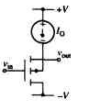
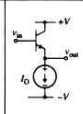
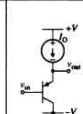
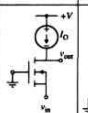
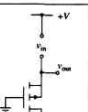
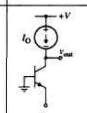
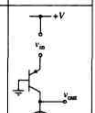
Two-port amplifier models

Voltage amplifier	
Current amplifier	
Transconductance amplifier	
Transresistance amplifier	

Single-stage amplifier configurations

Amplifier Type	Transistor Type			
	NMOS	PMOS	*npn*	*pnp*
Common-source/ common-emitter (CS/CE)				
Common-drain/ common-collector (CD/CC)				
Common-gate/ common-base (CG/CB)				

Microelectronic Circuits

ANALYSIS AND DESIGN

THIRD EDITION

Muhammad H. Rashid
Ph.D., Fellow IET (UK), Life Fellow IEEE (USA)
University of West Florida

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Muhammad H. Rashid

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To my parents,
my wife, Fatema,
my children,
Faeza, Farzana, and Hasan,
my grandchildren,
Hannah, Laith, Laila, Nora, Amal,
Issac, and Inara

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