400 IDEAS FOR DESIGN

COMPUTER AND PULSE CIRCUITS (cont.)

RC Pair Safely Sets Initial State of Relay Driver Delayed-Pulse Generator Uses Fewer Components SCR Drives Cold Cathode Counter Tube Simple Gates Provide Binary Scale-of-Ten Counter Mercury Relay Makes Fast-Rise Pulse Generator Blocking Oscillator-And Gate Produces Standard Output Pulse Transistorized Voltage-Frequency Converter Operates Linearly Delay-Line Discriminator Detects Sequences of Pulse FM Preserves Pulse Polarity in Ultrasonic Delay Lines Indicating Shift Register Uses Silicon-Controlled Rectifiers Tunnel Diode Triggers Avalanche Pulse Generator	74 75 76 76 77 77 78 78 78 79
Fixed Interval Timer Gates Random Pulse Stream Transistor Stage Yields Polarity-Controlled Output SCR Charge-Discharge Circuit Samples Slow Rep-Rate Pulses Variable-Width Pulse Generator Provides Fast Rise/Fall Times Root Taker Using Biased Diode Networks Gate Circuit Inhibits Pulses on Command Two-Transistors, Feedback Produce Free-Running Pulser Inverted Exclusive-OR Circuit Compares Binary Bits Zener, Diode Bridge Forms Double-Ended Clipper Circuit Squares DC Input Voltage Cascode Circuit Compensates for Heater-Voltage Sensitivity	79 80 81 81 82 82 83 83 83 84
Simple Transistor Circuits Generate Phantastron Sweeps Biased-On AC Amplifier Boosts Low-Level Pulses TD, Current-Mode Switch Deliver Fast 1-w Pulse Photoelectric Elements Help Analog Circuits Divide, Multiply Extra Triode Unloads Analog Computer Signal Source Exclusive OR Circuit Uses Three Transistors Differential 'Exclusive OR' Reduces Logic Modules Majority-Logic Adder Cuts Component Needs Diode Sets Flip-Flops for Initial State at Turn-On Direct-Coupled Transistors Provide Simple Parity Check Exclusive-OR Needs No Complement Mousetrap Generator Builds a Better Pulse Magnetic Tape Detects Sections of Rotating Wheel Neon Driver Circuit Uses Low Voltage Transistor	84 85 86 87 87 88 88 89 90 91 91
Zener Diode Reduces Schmitt Trigger Hysteresis Short-Duration Pulses Drive Visual Indicators Starter Circuit Guides Counter-Tube Beam Simplified Pulse Circuit Has Low Output Impedance Temperature Sensitive Resistors Are Low Cost Function Inverters Modified NOR Circuit Automatically Presets Flip-Flop Fast Squaring Circuit Preserves Phase Information	93 94 94 95
Quotient Circuit Substitutes for Difference Variable	97 97 98 98 99