

Index

- '311 (lab), 369
- '555, 373–375
- #344 lamp (lab), 375
- #47 lamp (lab), 183
- 1N5294 current-limiting diode, 374, 487
- 1N5294 current-limiting diode (lab), 223, 372
- 1N5711 Schottky diode (lab), 143
- 2N3904 (lab), 177
- 2N3906 (lab), 289
- 4046 PLL, 819
- 74HC00 (lab):, 592
- 74HC14 (lab), 371
- 74HC161, 693
- 74HC175 (lab), 673
- 74HC4040 (lab), 831
- 74HC4046 (lab), 831
- 74HC574 (lab), 829
- 74HC74 (lab), 668
- 74LS00 (lab), 592
- 74LS469 (lab), 701
- 74LS503 (lab), 827
- 78L05 regulator (lab), 497
- 8051 microcontroller, 871
- A in feedback loop: open-loop gain, 429
- AB in feedback: loop gain, 429, 431
- AC/DC (scope input select), 37
- active filter, 386
 - Bessel, 419
 - Bessel (lab), 406
 - Butterworth, 419
 - Butterworth (lab), 406
 - Chebyshev, 419
 - Chebyshev (lab), 406
 - transient response, 420
 - VCVS, 386
- active filter (lab), 405–406
- active pullup gate output: CMOS (lab):, 598
- active rectifier, 299
- active-low
 - ... in Verilog, 631, 633
 - explained, 573
 - why prevalent, 580
- AD558 (lab), 825
- AD630
 - integrated modulator, 456
- ADC, *see* analog ↔ digital conversion
- ADC (lab), 827–830
- ADC & DAC to micro
 - modify waveforms
 - lowpass filter, 952–953
 - rectify: full-wave, 950
 - rectify: half-wave, 952
 - number formats, 951
- adder (digital)
 - worked example, 613–614
- AGC (automatic gain control) lab, 543
- aliasing, 796, 836, 839–840
- ALU
 - design with gates, 617
 - worked example, 617
- AM radio (lab), 143–144
- ammeter (lab), 32
- analog
 - contrasted with digital, 564
- analog ↔ digital conversion
 - ADC designs, 802–813
 - ... compared, 802
 - “flash” or parallel, 803
 - binary search (SAR), 806–808
 - delta-sigma, 808–813
 - dual-slope, 804
 - how delta-sigma highpasses quantization noise, 811–813
 - how delta-sigma lowpasses signal, 813
 - oversampling, 810
 - pipelining, 804
 - single-slope, 716
 - tracking, 806
 - aliasing, 816
 - DAC designs, 798–802
 - current summing R:2R, 798
 - PWM, 801
 - switched-capacitor, 800
 - thermometer, 798
 - dither, 816
 - quantization error, 795
 - R:2R ladder, 798–800
 - resolution, 794
 - sample-and-hold, 806
 - sampling artifacts, 814–816
 - sampling rate, 795–797
 - aliasing, 796
- analog switch
 - application
 - chopper (lab), 534
 - flying capacitor (lab), 536