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| **LM741CN/NOPB** | **MCP6242-E/P** | **LM358AN/NOPB** | **LM386N-1/NOPB** |
|  |  |  |  |
| **General Purpose Op-Amp** | **2 Circuit Rail-to-Rail Op Amp** | **2 Circuit General P. Op-Amp** | **Low Voltage Audio Pw. Amplifier** |
| VS = **±15 V Nom.**  IS  = **2.8 mA Max**  VDiff. In = **±30 V Max** IIB  = **80 nA Typ.**  VOS  = **2 mV Typ.** IOS  = **20 mA Typ.**  IOut. Short. C. = **25 mA** AV = **200 V/Vm Typ.**  CMMR = **90 dB Typ.** RIn = **2 MΩ Typ.**  TOP = **0 to 70° C** RθJA = **100° C/W** | VDD = **1.8 to 5.5 V**  ISC  = **±6 to ±23 mA**  IQ = **50 µA Typ.** IB  = **±1 pA Typ.**  VOS  = **±5 mV** IOS  = **±1 pA Typ.**  GBWP = **550 kHz** AOL = **110 dB Typ.**  CMMR = **75 dB Typ.**  TA = **-40 to 125° C** θJA = **85° C/W** | VS(single) = **3 to 32 V**  ISC  = **40 mA Typ.**  IS = **1 mA Typ.** IB  = **45 nA Typ.**  VOS  = **2 mV Typ.** IOS  = **5 nA Typ.**  GBW = **1 MHz** AV = **100 V/Vm Typ.**  CMMR = **85 dB Typ.**  TA = **0 to 70° C** RθJA = **120° C/W** | VCC = **4 to 12 V**  ISC  = **40 mA Typ.**  IQ = **4 mA Typ.** IBias = **250 nA**  AV (Vs=6V, f=1kHz)= **26 dB** RIN  = **50 Ω**  BW = **300 kHz** THD = **0.2%**  POUT  = **325 mW Typ.** PSRR = **50 dB**  TA = **0 to 70° C** RθJA = **53° C/W** |
| **24LC256-I/P** | **24LC1026-I/P** | **25LC256-I/P** | **ATTINY85-20PU** |
|  |  |  |  |
| **256-Kbit I2C Serial EEPROM** | **1024-Kbit I2C CMOS Serial EEPROM** | **256-Kbit SPI Bus Serial EEPROM** | **8-bit MCU, 8kB Flash 6 I/O Pins** |
| VCC = **2.5 to 5.5 V**  VOL = **0.4 V Max**  FCLCK = **400 kHz Max** VHYS = **0.05 VCC Min**  VIH = **0.7 VCC Min** VIL = **0.3 VCC Max**  ICC Read = **400 µA** ICC Write = **3 mA**  ICCS  = **1.5 µA Max** ESD Protc. = **≥4kV**  TOP = **-40 to 85° C** | VCC = **2.5 to 5.5 V**  VOL = **0.4 V Max**  FCLCK = **400 kHz Max** VHYS = **0.05 VCC Min**  VIH = **0.7 VCC Min** VIL = **0.3 VCC Max**  ICC Read = **450 µA** ICC Write = **5 mA**  ICCS  = **5 µA Max** ESD Protc. = **≥4kV**  TOP = **-40 to 85° C** | VCC = **2.5 to 5.5 V**  VOL = **0.4 V Max**  FCLCK = **10 MHz Max** VOL = **VCC -0.5 V Min**  VIH = **0.7 VCC Min** VIL = **0.3 VCC Max**  ICC Read = **6 mA** ICC Write = **5 mA**  ICCS  = **1 µA Max** ESD Protc. = **4kV**  TOP = **-40 to 125° C** | VCC = **2.7 to 5.5 V**  FCLCK = **20 MHz Max**  Flash = **8 KB** SRAM = **256 B**  TOP = **-40 to 85° C** EEPROM= **512 B**  DC Current per I/O Pin = **40 mA Max**  RPU (I/O Pull-up Res.) = **20 kΩ Min, 50 kΩ Max**  Interfaces: **USI, debugWIRE, SPI** |
| **CD4017BE** | **SN74AHCT14N** | **SN74HC595N** | **L293DNE** |
|  |  |  |  |
| **5-stage Johnson Decade Counter** | **Hex Schmitt-Trigger Inverter** | **8-bit Shift Register w/3-State Outp. R.** | **600 mA Quadruple Half-H Drivers** |
| VDD = **3 to 18 V**  fCL (clock inp. frequency) at 5 V= **2.5 MHz Max**  tW (clock pulse width) at 5 V = **200 ns Min**  IOL Min at 5 V = **1 mA** IOL Min at 5 V = **-1 mA**  IDD Max (quiescent dev. curr.) at 5V = **0.04 µA Max**  TA = **-55 to 125° C** | VCC = **4.5 to 5.5 V**  VI = **0 to 5.5 V Max** VO = **0.3 to VCC**  IOH = **-8 mA Max** IOL = **8 mA Max**  VOH = **3.8 V Min** VOL = **0.44 V Max**  ΔVT  = **1.5 V Max**  TOP = **-40 to 125° C** RθJA = **61.1° C/W** | VCC = **2 to 6 V**  IO = **±45 mA Max**  fclock = **25 MHz Max**  VI = **0 to VCC** VO = **0 to VCC**  VIH = **3.15 V Min** VIL = **1.35 V Max**  Δt/Δv = **500 ns/V Max**  TOP = **-40 to 85° C** RθJA = **67° C/W** | VCC1 = **4.5 to 7 V**  VCC2 = **VCC1 to 36 V**  IO = **-600 mA / 600mA Min/Max**  VIH = **2.3 to 7 V**  VIL = **-0.3 to 1.5 V**  RθJA = **36.4° C/W**  TA = **0 to 70° C** |
| **SN754410NE** | **ATMEGA328P-PN** | **ATMEGA168PA-PN** | **TXS0102DQMR** |
|  |  |  |  |
| **1 A Quadruple Half-H Driver** | **8-bit MCU, 32KB Flash 23 I/O Pins** | **8-bit MCU, 16KB Flash 23 I/O Pins** | **2-Bit Bidirect. Volt.-Level Translator** |
| VCC1 = **4.5 to 5.5 V**  VCC2 = **4.5 to 36 V**  IO = **±1 A Max**  VIH = **2 to 5.5 V**  VIL = **-0.3 to 0.8 V**  RθJA = **60° C/W**  TA = **-40 to 85° C** | VCC = **1.8 to 5.5 V**  FCLCK = **20 MHz Max**  Flash = **32 KB** SRAM = **2 KB**  TOP = **-40 to 105° C** EEPROM= **1 KB**  DC Current per I/O Pin = **40 mA Max**  RPU (I/O Pull-up Res.) = **20 kΩ Min, 50 kΩ Max**  Interfaces: **USART, I2C, SPI, ADC, PWM, debugWIRE** | VCC = **1.8 to 5.5 V**  FCLCK = **20 MHz Max**  Flash = **16 KB** SRAM = **1 KB**  TOP = **-40 to 105° C** EEPROM= **512 B**  DC Current per I/O Pin = **40 mA Max**  RPU (I/O Pull-up Res.) = **20 kΩ Min, 50 kΩ Max**  Interfaces: **USART, I2C, SPI, ADC, PWM, debugWIRE** | VCCA = **1.65 to 3.6 V**  VCCB = **2.3 to 5.5 V**  VIH = **VCC – 0.4 to VCCI** VIL = **0 to 0.15 V**  VOHA = **VCCA x 0.67 V** VOLA = **0.4 V**  VOHB = **VCCB x 0.67 V** VOLB = **0.4 V**  Δt/Δv = **10 ns/V Max**  TOP = **-40 to 85° C** RθJA = **239° C/W** |
| **BV1HD090FJ-CE2** | **BV1LE080EFJ-CE2** | **BM2LE080FJ-CE2** | **FODM217DR2V** |
|  |  |  |  |
| **1 Channel High-Side Switch** | **1 Channel Low-Side Switch** | **2 Channel Low-Side Switch** | **1 Channel Phototransis. Octocoupler** |
| VBB = **4.5 to 36 V**  IOUT = **9 A**  VIN = **-0.3 to 7 V** EAS at 25**°** C = **242 mJ**  IST = **10 mA**  VINHYS = **0.4 V Typ.**  VINH = **2.8 V Min** VINL = **1.5 V Max**  IINH = **150 µA Max** IINL = **±150 µA**  TJ = **-40 to 150° C** θJA = **147° C/W** | VOUT = **-0.3 to 40 V**  IOUT(LIM) =  **13 A Typ.**  VIN = **3 to 5.5 V** EAS at 25**°** C = **200 mJ**  IST = **10 mA** RDS(ON) = **80 mΩ Typ.**  VINH(TH) = **3 V Max**  IINH1 = **200 µA Max** IINL = **±10 µA**  TJ = **-40 to 150° C** θJA = **131° C/W** | VOUT = **-0.3 to 40 V**  IOUT =  **9 A**  VIN = **3 to 5.5 V** EAS at 25**°** C = **200 mJ**  IST = **10 mA** RDS(ON) = **80 mΩ Typ.**  VIN(TH) = **3 V Max**  IINH1 = **200 µA Max** IINL = **±10 µA**  TJ = **-40 to 150° C** θJA = **141° C/W** | BVCEO = **80 V Min**  IC(AVG) = **50 mA Max**  BVECO = **7 V Min** VISO = **3750 VACRMS**  VF(Emitter) = **1.2 V Typ.** IR(Emitter) = **10 µA Max**  VR(Emitter) = **6 V Typ.** IF(AVG) = **50 mA Max**  CTRCE = **300 to 600%** CT 1 kHz = **30 pF Typ.**  TOPR = **-55 to 110° C** |

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| **140356145400** | **TL071CP** | **LM324N** | **NE5532P** |
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| **1 Channel Phototransis. Octocoupler** | **Low-Noise FET-Input Op Amp** | **Gen. Purpose Quadruple Op Amp** | **Dual Low-Noise Op Amp** |
| VCE = **80 V Max**  ICE.P = **50 mA Max**  VEC = **7 V Min** VISO = **3750 V (RMS)**  VF(Emitter) = **1.24 V Typ.** IR(Emitter) = **10 µA Max**  VR(Emitter) = **6 V Max** IF(MAX) = **60 mA Max**  CTRCE = **300 to 500%** Cin 1 kHz = **10 pF**  TOPR = **-55 to 110° C** | VSS = **0 to 42 V**  ISC  = **±26 mA**  IQ = **1.4 mA Typ.** IB  = **65 pA Typ.**  VOS  = **10 mV Max** IOS  = **5 pA Typ.**  GBW = **5.25 MHz** SR= **20 V/µs Typ.**  CMMR = **100 dB Typ.**  TA = **0 to 70° C** RθJA = **85° C/W** | VI = **-0.3 to 32 V**  ICC  = **1.4 mA**  IQ (source) = **-10 mA Min** IIB  = **-20 nA Typ.**  VIO  = **3 mV Typ.** IOS  = **±40 mA**  B1 = **1.2 MHz** SR= **0.5 V/µs Typ.**  CMRR = **80 dB Typ.**  TA = **0 to 70° C** | VCC = **0 to 22 V**  ICC = **8 mA Typ.**  IIO = **10 nA Typ.** IIB  = **200 nA Typ.**  VIO  = **5 mV Max** IOS  = **38 mA Typ.**  B1 = **10 MHz** SR= **9 V/µs Typ.**  CMRR = **100 dB Typ.**  TA = **0 to 70° C** RθJA = **85° C/W** |
| **OPA2376AQDRQ1** | **UA741CP** | **TLP3553A(F** | **CD74HC154M96** |
|  |  |  |  |
| **Dual Rail-to-Rail, Low-Noise, e-trim Op Amp** | **Gen. Purpose Op Amp w/Offset-voltage Null** | **SSR SPST-NO Photocoupler/Photorelay** | **H. Speed CMOS 4-to-16 Decoder/Demultiplexer** |
| VS = **7 V Max**  IIP = **-10 to 10 mA**  IQ = **10 mA Max** IB  = **0.2 pA Typ.**  VOS  = **5 µV Typ.** ISC  = **30/-50 mA**  GBW = **5.5 MHz** SR= **2 V/µs Typ.**  CMRR = **90 dB Typ.**  TA = **-40 to 150° C** RθJA = **100.1° C/W** | VCC = **±18 V**  ICC  = **1.7 mA Typ.**  IIO = **20 nA Typ.** IIB  = **80 nA Typ.**  VIO  = **1 mV Typ.** IOS  = **±25 mA Typ.**  GBW = **1 MHz** SR= **0.5 V/µs Typ.**  CMMR = **90 dB Typ.**  TA = **0 to 70° C** RθJA = **87.4° C/W** | VDD = **24 V Max**  IF = **25 mA Max**  VOFF = **30 V**  BVS = **2500 V (RMS)**  VF = **1.64 V Typ.**  IF = **30 mA Max**  ION = **4 A Max** Ct LED = **70 pF**  RS Isolation = **1014 Ω** PO = **550 mW**  TOPR = **-40 to 110° C** | VCC = **±18 V**  ICC  = **1.7 mA Typ.**  IIO = **20 nA Typ.** IIB  = **80 nA Typ.**  VIO  = **1 mV Typ.** IOS  = **±25 mA Typ.**  GBW = **1 MHz** SR= **0.5 V/µs Typ.**  CMMR = **90 dB Typ.**  TA = **0 to 70° C** RθJA = **87.4° C/W** |
| **SN7404N** | **NE555P** | **CD4093BE** | **SN74ALS244CN** |
|  |  |  |  |
| **Hex Inverter** | **Precision Timer/Oscillator** | **Quad 2-Inp. NAND Schmitt Trigger** | **Octal Buffer & Line Driver w/3-state Outp.** |
| VCC = **4.75 to 5.25 V**  VIH = **2 V Min** VIL = **0.8 V Max**  IOH = **-0.4 mA Max** IOL = **16 mA Max**  VOH = **3.4 V Typ.** VOL = **0.2 V Typ.**  tPLH = **9 ns Typ.** tPHL = **10 ns Typ.**  TA = **0 to 70° C** θJA = **80°C/W** | VCC = **4.5 to 16 V**  IO = **±200 mA Max**  THRESH V. Level at 5V = **2.4 to 4.2 V**  THRESH Current = **30 nA Typ.**  TRIG V. Level = **1.1 to 2.2 V**  Outp.-Pulse Rise/Fall Time = **100 ns Typ.**  TA = **0 to 70° C** RθJA = **85° C/W** | VDD = **3 to 18 V**  IDD = **0.2 µA Typ.** CIN = **5 pF Typ.**  VP Min and Max at 5V = **3.3 V Typ.**  tPLH = **65 ns Typ.** tPHL = **90 ns Typ.**  tTLH = **40 ns Typ.** tTHL = **50 ns Typ.**  TA = **-55 to 125° C** θJA = **86°C/W** | VCC = **4.5 to 5.5 V** ICC (out. High) = **49 mA Typ.**  VIH = **2 V Min** VIL = **0.8 V Max**  IOH = **-15 mA Max** IOL = **24 mA Max**  VOH = **3.2 V Typ.** VOL = **0.35 V Typ.**  tPLH = **10 ns Max** tPHL = **10 ns Max**  TA = **0 to 70° C** |
| **CD74HC137E** | **74HCT03D,653** | **TC74HC14APF** | **ATMEGA164PA-ANR** |
|  |  |  |  |
| **H. Speed CMOS 3-to-8 Decoder/Demux w/Latch** | **Quad 2-Inp. NAND Gate w/Open Drain Out.** | **CMOS Hex Schmitt Inverter** | **8-bit MCU, 16KB Flash 32 I/O Pins** |
| VCC = **-0.5 to 7 V** ICC  = **±50 mA**  VIH = **3.15 V Min** VIL = **1.35 V Max**  CI = **10 pF Max**  VOH = **4.4 V Min** VOL = **0.1 V Max**  tPLH, tPHL at 4.5V= **36 ns Max**  TA = **-55 to 125° C** θJA = **67°C/W** | VCC = **-0.5 to 7 V** ICC  = **50 mA**  VIH = **2 Min** VIL = **0.8 V Max**  IOZ = **±0.5 mA Max** CI = **3.5 pF Max**  Δt/Δv = **10 ns/V Max**  tpd = **24 ns Max** tt = **7 ns Typ.**  Tamb = **-40 to 125° C** Ptot = **500 mW Max** | VCC = **2 to 6 V** IOUT  = **±25 mA**  VP = **2.75 V Typ.** VN = **1.6 V Typ.**  VH = **1.1 V Typ.** CIN = **5 pF Typ.**  VOH = **4.3 V Typ.** VOL = **0.17 V Typ.**  tPLH, tPHL at 4.5V= **11 ns Typ.**  Topr = **-40 to 85° C** PD = **500 mW** | VCC = **1.8 to 5.5 V**  FCLCK = **20 MHz Max**  Flash = **16 KB** SRAM = **1 KB**  TOP = **-40 to 105° C** EEPROM= **512 B**  DC Current per I/O Pin = **40 mA Max**  RPU (I/O Pull-up Res.) = **20 kΩ Min, 50 kΩ Max**  Interfaces: **UART/USART, I2C, SPI, POR, ADC, WDT** |
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Note: For the θJA parameter, when asked about the package in the datasheet, check the datasheet for CD74HC137E, it specifies that, for instance, the PDIP packaged corresponds to E and then the given thermal parameter is given.

**Updates:**

**2025-Jan-13**

1. Changed all “S” suffixes (seconds) to lower case “s”
2. Fixed Δt/Δv units for SN74HC595N and TXS0102DQMR
3. Updated diagrams for LM741CN/NOPB, MCP6242-E/P, LM358AN/NOPB, LM386N-1/NOPB, SN74AHCT14N, FODM217DR2V and 140356145400
4. Added new components: TL071CP, LM324N, NE5532P, OPA2376AQDRQ1, UA741CP, TLP3553A(F, CD74HC154M96, SN7404N, NE555P, CD4093BE, SN74ALS244CN, CD74HC137E, 74HCT03D,653, TC74HC14APF and ATMEGA164PA-ANR