| 31 27 | 26 25 | 24 20 | 19 15 | 14 12 | 11 7 | 6 0 | |
|---|---|---|---|---|---|---|---|
| funct7 | | rs2 | rs1 | funct3 | rd | opcode | R-type |
| imm[11:0] | | | rs1 | funct3 | rd | opcode | I-type |
| imm[11:5] | | rs2 | rs1 | funct3 | imm[4:0] | opcode | S-type |
| imm[12\|10:5] | | rs2 | rs1 | funct3 | imm[4:1\|11] | opcode | B-type |
| imm[31:12] | | | | | rd | opcode | U-type |
| imm[20\|10:1\|11\|19:12] | | | | | rd | opcode | J-type |

**RV32I Base Instruction Set**

| | | | | | | |
|---|---|---|---|---|---|---|
| imm[31:12] | | | | | rd | 0110111 | LUI |
| imm[31:12] | | | | | rd | 0010111 | AUIPC |
| imm[20\|10:1\|11\|19:12] | | | | | rd | 1101111 | JAL |
| imm[11:0] | | | rs1 | 000 | rd | 1100111 | JALR |
| imm[12\|10:5] | | rs2 | rs1 | 000 | imm[4:1\|11] | 1100011 | BEQ |
| imm[12\|10:5] | | rs2 | rs1 | 001 | imm[4:1\|11] | 1100011 | BNE |
| imm[12\|10:5] | | rs2 | rs1 | 100 | imm[4:1\|11] | 1100011 | BLT |
| imm[12\|10:5] | | rs2 | rs1 | 101 | imm[4:1\|11] | 1100011 | BGE |
| imm[12\|10:5] | | rs2 | rs1 | 110 | imm[4:1\|11] | 1100011 | BLTU |
| imm[12\|10:5] | | rs2 | rs1 | 111 | imm[4:1\|11] | 1100011 | BGEU |
| imm[11:0] | | | rs1 | 000 | rd | 0000011 | LB |
| imm[11:0] | | | rs1 | 001 | rd | 0000011 | LH |
| imm[11:0] | | | rs1 | 010 | rd | 0000011 | LW |
| imm[11:0] | | | rs1 | 100 | rd | 0000011 | LBU |
| imm[11:0] | | | rs1 | 101 | rd | 0000011 | LHU |
| imm[11:5] | | rs2 | rs1 | 000 | imm[4:0] | 0100011 | SB |
| imm[11:5] | | rs2 | rs1 | 001 | imm[4:0] | 0100011 | SH |
| imm[11:5] | | rs2 | rs1 | 010 | imm[4:0] | 0100011 | SW |
| imm[11:0] | | | rs1 | 000 | rd | 0010011 | ADDI |
| imm[11:0] | | | rs1 | 010 | rd | 0010011 | SLTI |
| imm[11:0] | | | rs1 | 011 | rd | 0010011 | SLTIU |
| imm[11:0] | | | rs1 | 100 | rd | 0010011 | XORI |
| imm[11:0] | | | rs1 | 110 | rd | 0010011 | ORI |
| imm[11:0] | | | rs1 | 111 | rd | 0010011 | ANDI |
| 0000000 | | rs2 | rs1 | 000 | rd | 0110011 | ADD |
| 0100000 | | rs2 | rs1 | 000 | rd | 0110011 | SUB |
| 0000000 | | rs2 | rs1 | 001 | rd | 0110011 | SLL |
| 0000000 | | rs2 | rs1 | 010 | rd | 0110011 | SLT |
| 0000000 | | rs2 | rs1 | 011 | rd | 0110011 | SLTU |
| 0000000 | | rs2 | rs1 | 100 | rd | 0110011 | XOR |
| 0000000 | | rs2 | rs1 | 101 | rd | 0110011 | SRL |
| 0100000 | | rs2 | rs1 | 101 | rd | 0110011 | SRA |
| 0000000 | | rs2 | rs1 | 110 | rd | 0110011 | OR |
| 0000000 | | rs2 | rs1 | 111 | rd | 0110011 | AND |
| fm | pred | succ | rs1 | 000 | rd | 0001111 | FENCE |
| 0000000 | | 00000 | 00000 | 000 | 00000 | 1110011 | ECALL |
| 0000000 | | 00001 | 00000 | 000 | 00000 | 1110011 | EBREAK |
| 0000000 | | shamt | rs1 | 001 | rd | 0010011 | SLLI |
| 0000000 | | shamt | rs1 | 101 | rd | 0010011 | SRLI |
| 0100000 | | shamt | rs1 | 101 | rd | 0010011 | SRAI |
| 1000001 | | 10011 | rs1 | 000 | rd | 0001111 | FENCE.TSO |
| 0000000 | | 10000 | 00000 | 000 | 00000 | 0001111 | PAUSE |

| 31 27 | 26 25 | 24 20 | 19 15 | 14 12 | 11 7 | 6 0 | |
|---|---|---|---|---|---|---|---|
| funct7 | | rs2 | rs1 | funct3 | rd | opcode | R-type |
| imm[11:0] | | | rs1 | funct3 | rd | opcode | I-type |
| imm[11:5] | | rs2 | rs1 | funct3 | imm[4:0] | opcode | S-type |

**RV64I Base Instruction Set (in addition to RV32I)**

| | | | | | | |
|---|---|---|---|---|---|---|
| imm[11:0] | | rs1 | 110 | rd | 0000011 | LWU |
| imm[11:0] | | rs1 | 011 | rd | 0000011 | LD |
| imm[11:5] | rs2 | rs1 | 011 | imm[4:0] | 0100011 | SD |
| 000000 | shamt | rs1 | 001 | rd | 0010011 | SLLI |
| 000000 | shamt | rs1 | 101 | rd | 0010011 | SRLI |
| 010000 | shamt | rs1 | 101 | rd | 0010011 | SRAI |
| imm[11:0] | | rs1 | 000 | rd | 0011011 | ADDIW |
| 0000000 | shamt | rs1 | 001 | rd | 0011011 | SLLIW |
| 0000000 | shamt | rs1 | 101 | rd | 0011011 | SRLIW |
| 0100000 | shamt | rs1 | 101 | rd | 0011011 | SRAIW |
| 0000000 | rs2 | rs1 | 000 | rd | 0111011 | ADDW |
| 0100000 | rs2 | rs1 | 000 | rd | 0111011 | SUBW |
| 0000000 | rs2 | rs1 | 001 | rd | 0111011 | SLLW |
| 0000000 | rs2 | rs1 | 101 | rd | 0111011 | SRLW |
| 0100000 | rs2 | rs1 | 101 | rd | 0111011 | SRAW |

**RV32/RV64 Zifencei Standard Extension**

| | | | | | |
|---|---|---|---|---|---|
| imm[11:0] | rs1 | 001 | rd | 0001111 | FENCE.I |

**RV32/RV64 Zicsr Standard Extension**

| | | | | | |
|---|---|---|---|---|---|
| csr | rs1 | 001 | rd | 1110011 | CSRRW |
| csr | rs1 | 010 | rd | 1110011 | CSRRS |
| csr | rs1 | 011 | rd | 1110011 | CSRRC |
| csr | uimm | 101 | rd | 1110011 | CSRRWI |
| csr | uimm | 110 | rd | 1110011 | CSRRSI |
| csr | uimm | 111 | rd | 1110011 | CSRRCI |

**RV32M Standard Extension**

| | | | | | | |
|---|---|---|---|---|---|---|
| 0000001 | rs2 | rs1 | 000 | rd | 0110011 | MUL |
| 0000001 | rs2 | rs1 | 001 | rd | 0110011 | MULH |
| 0000001 | rs2 | rs1 | 010 | rd | 0110011 | MULHSU |
| 0000001 | rs2 | rs1 | 011 | rd | 0110011 | MULHU |
| 0000001 | rs2 | rs1 | 100 | rd | 0110011 | DIV |
| 0000001 | rs2 | rs1 | 101 | rd | 0110011 | DIVU |
| 0000001 | rs2 | rs1 | 110 | rd | 0110011 | REM |
| 0000001 | rs2 | rs1 | 111 | rd | 0110011 | REMU |

**RV64M Standard Extension (in addition to RV32M)**

| | | | | | | |
|---|---|---|---|---|---|---|
| 0000001 | rs2 | rs1 | 000 | rd | 0111011 | MULW |
| 0000001 | rs2 | rs1 | 100 | rd | 0111011 | DIVW |
| 0000001 | rs2 | rs1 | 101 | rd | 0111011 | DIVUW |
| 0000001 | rs2 | rs1 | 110 | rd | 0111011 | REMW |
| 0000001 | rs2 | rs1 | 111 | rd | 0111011 | REMUW |

| 31 27 | 26 | 25 | 24 20 | 19 15 | 14 12 | 11 7 | 6 0 | |
|---|---|---|---|---|---|---|---|---|
| funct7 | | | rs2 | rs1 | funct3 | rd | opcode | R-type |

**RV32A Standard Extension**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 00010 | aq | rl | 00000 | rs1 | 010 | rd | 0101111 | LR.W |
| 00011 | aq | rl | rs2 | rs1 | 010 | rd | 0101111 | SC.W |
| 00001 | aq | rl | rs2 | rs1 | 010 | rd | 0101111 | AMOSWAP.W |
| 00000 | aq | rl | rs2 | rs1 | 010 | rd | 0101111 | AMOADD.W |
| 00100 | aq | rl | rs2 | rs1 | 010 | rd | 0101111 | AMOXOR.W |
| 01100 | aq | rl | rs2 | rs1 | 010 | rd | 0101111 | AMOAND.W |
| 01000 | aq | rl | rs2 | rs1 | 010 | rd | 0101111 | AMOOR.W |
| 10000 | aq | rl | rs2 | rs1 | 010 | rd | 0101111 | AMOMIN.W |
| 10100 | aq | rl | rs2 | rs1 | 010 | rd | 0101111 | AMOMAX.W |
| 11000 | aq | rl | rs2 | rs1 | 010 | rd | 0101111 | AMOMINU.W |
| 11100 | aq | rl | rs2 | rs1 | 010 | rd | 0101111 | AMOMAXU.W |

**RV64A Standard Extension (in addition to RV32A)**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 00010 | aq | rl | 00000 | rs1 | 011 | rd | 0101111 | LR.D |
| 00011 | aq | rl | rs2 | rs1 | 011 | rd | 0101111 | SC.D |
| 00001 | aq | rl | rs2 | rs1 | 011 | rd | 0101111 | AMOSWAP.D |
| 00000 | aq | rl | rs2 | rs1 | 011 | rd | 0101111 | AMOADD.D |
| 00100 | aq | rl | rs2 | rs1 | 011 | rd | 0101111 | AMOXOR.D |
| 01100 | aq | rl | rs2 | rs1 | 011 | rd | 0101111 | AMOAND.D |
| 01000 | aq | rl | rs2 | rs1 | 011 | rd | 0101111 | AMOOR.D |
| 10000 | aq | rl | rs2 | rs1 | 011 | rd | 0101111 | AMOMIN.D |
| 10100 | aq | rl | rs2 | rs1 | 011 | rd | 0101111 | AMOMAX.D |
| 11000 | aq | rl | rs2 | rs1 | 011 | rd | 0101111 | AMOMINU.D |
| 11100 | aq | rl | rs2 | rs1 | 011 | rd | 0101111 | AMOMAXU.D |

| 31 27 | 26 25 | 24 20 | 19 15 | 14 12 | 11 7 | 6 0 | |
|---|---|---|---|---|---|---|---|
| funct7 | | rs2 | rs1 | funct3 | rd | opcode | R-type |
| rs3 | funct2 | rs2 | rs1 | funct3 | rd | opcode | R4-type |
| imm[11:0] | | | rs1 | funct3 | rd | opcode | I-type |
| imm[11:5] | | rs2 | rs1 | funct3 | imm[4:0] | opcode | S-type |

**RV32F Standard Extension**

| | | | | | | |
|---|---|---|---|---|---|---|
| imm[11:0] | | rs1 | 010 | rd | 0000111 | FLW |
| imm[11:5] | rs2 | rs1 | 010 | imm[4:0] | 0100111 | FSW |
| rs3 | 00 | rs2 | rs1 | rm | rd | 1000011 | FMADD.S |
| rs3 | 00 | rs2 | rs1 | rm | rd | 1000111 | FMSUB.S |
| rs3 | 00 | rs2 | rs1 | rm | rd | 1001011 | FNMSUB.S |
| rs3 | 00 | rs2 | rs1 | rm | rd | 1001111 | FNMADD.S |
| 0000000 | | rs2 | rs1 | rm | rd | 1010011 | FADD.S |
| 0000100 | | rs2 | rs1 | rm | rd | 1010011 | FSUB.S |
| 0001000 | | rs2 | rs1 | rm | rd | 1010011 | FMUL.S |
| 0001100 | | rs2 | rs1 | rm | rd | 1010011 | FDIV.S |
| 0101100 | | 00000 | rs1 | rm | rd | 1010011 | FSQRT.S |
| 0010000 | | rs2 | rs1 | 000 | rd | 1010011 | FSGNJ.S |
| 0010000 | | rs2 | rs1 | 001 | rd | 1010011 | FSGNJN.S |
| 0010000 | | rs2 | rs1 | 010 | rd | 1010011 | FSGNJX.S |
| 0010100 | | rs2 | rs1 | 000 | rd | 1010011 | FMIN.S |
| 0010100 | | rs2 | rs1 | 001 | rd | 1010011 | FMAX.S |
| 1100000 | | 00000 | rs1 | rm | rd | 1010011 | FCVT.W.S |
| 1100000 | | 00001 | rs1 | rm | rd | 1010011 | FCVT.WU.S |
| 1110000 | | 00000 | rs1 | 000 | rd | 1010011 | FMV.X.W |
| 1010000 | | rs2 | rs1 | 010 | rd | 1010011 | FEQ.S |
| 1010000 | | rs2 | rs1 | 001 | rd | 1010011 | FLT.S |
| 1010000 | | rs2 | rs1 | 000 | rd | 1010011 | FLE.S |
| 1110000 | | 00000 | rs1 | 001 | rd | 1010011 | FCLASS.S |
| 1101000 | | 00000 | rs1 | rm | rd | 1010011 | FCVT.S.W |
| 1101000 | | 00001 | rs1 | rm | rd | 1010011 | FCVT.S.WU |
| 1111000 | | 00000 | rs1 | 000 | rd | 1010011 | FMV.W.X |

**RV64F Standard Extension (in addition to RV32F)**

| | | | | | | |
|---|---|---|---|---|---|---|
| 1100000 | | 00010 | rs1 | rm | rd | 1010011 | FCVT.L.S |
| 1100000 | | 00011 | rs1 | rm | rd | 1010011 | FCVT.LU.S |
| 1101000 | | 00010 | rs1 | rm | rd | 1010011 | FCVT.S.L |
| 1101000 | | 00011 | rs1 | rm | rd | 1010011 | FCVT.S.LU |

| 31 27 | 26 25 | 24 20 | 19 15 | 14 12 | 11 7 | 6 0 | |
|---|---|---|---|---|---|---|---|
| funct7 | | rs2 | rs1 | funct3 | rd | opcode | R-type |
| rs3 | funct2 | rs2 | rs1 | funct3 | rd | opcode | R4-type |
| imm[11:0] | | | rs1 | funct3 | rd | opcode | I-type |
| imm[11:5] | | rs2 | rs1 | funct3 | imm[4:0] | opcode | S-type |

**RV32D Standard Extension**

| | | | | | | |
|---|---|---|---|---|---|---|
| imm[11:0] | | rs1 | 011 | rd | 0000111 | FLD |
| imm[11:5] | | rs2 | rs1 | 011 | imm[4:0] | 0100111 | FSD |
| rs3 | 01 | rs2 | rs1 | rm | rd | 1000011 | FMADD.D |
| rs3 | 01 | rs2 | rs1 | rm | rd | 1000111 | FMSUB.D |
| rs3 | 01 | rs2 | rs1 | rm | rd | 1001011 | FNMSUB.D |
| rs3 | 01 | rs2 | rs1 | rm | rd | 1001111 | FNMADD.D |
| 0000001 | | rs2 | rs1 | rm | rd | 1010011 | FADD.D |
| 0000101 | | rs2 | rs1 | rm | rd | 1010011 | FSUB.D |
| 0001001 | | rs2 | rs1 | rm | rd | 1010011 | FMUL.D |
| 0001101 | | rs2 | rs1 | rm | rd | 1010011 | FDIV.D |
| 0101101 | | 00000 | rs1 | rm | rd | 1010011 | FSQRT.D |
| 0010001 | | rs2 | rs1 | 000 | rd | 1010011 | FSGNJ.D |
| 0010001 | | rs2 | rs1 | 001 | rd | 1010011 | FSGNJN.D |
| 0010001 | | rs2 | rs1 | 010 | rd | 1010011 | FSGNJX.D |
| 0010101 | | rs2 | rs1 | 000 | rd | 1010011 | FMIN.D |
| 0010101 | | rs2 | rs1 | 001 | rd | 1010011 | FMAX.D |
| 0100000 | | 00001 | rs1 | rm | rd | 1010011 | FCVT.S.D |
| 0100001 | | 00000 | rs1 | rm | rd | 1010011 | FCVT.D.S |
| 1010001 | | rs2 | rs1 | 010 | rd | 1010011 | FEQ.D |
| 1010001 | | rs2 | rs1 | 001 | rd | 1010011 | FLT.D |
| 1010001 | | rs2 | rs1 | 000 | rd | 1010011 | FLE.D |
| 1110001 | | 00000 | rs1 | 001 | rd | 1010011 | FCLASS.D |
| 1100001 | | 00000 | rs1 | rm | rd | 1010011 | FCVT.W.D |
| 1100001 | | 00001 | rs1 | rm | rd | 1010011 | FCVT.WU.D |
| 1101001 | | 00000 | rs1 | rm | rd | 1010011 | FCVT.D.W |
| 1101001 | | 00001 | rs1 | rm | rd | 1010011 | FCVT.D.WU |

**RV64D Standard Extension (in addition to RV32D)**

| | | | | | | |
|---|---|---|---|---|---|---|
| 1100001 | | 00010 | rs1 | rm | rd | 1010011 | FCVT.L.D |
| 1100001 | | 00011 | rs1 | rm | rd | 1010011 | FCVT.LU.D |
| 1110001 | | 00000 | rs1 | 000 | rd | 1010011 | FMV.X.D |
| 1101001 | | 00010 | rs1 | rm | rd | 1010011 | FCVT.D.L |
| 1101001 | | 00011 | rs1 | rm | rd | 1010011 | FCVT.D.LU |
| 1111001 | | 00000 | rs1 | 000 | rd | 1010011 | FMV.D.X |

| 31 27 | 26 25 | 24 20 | 19 15 | 14 12 | 11 7 | 6 0 | |
|---|---|---|---|---|---|---|---|
| funct7 | | rs2 | rs1 | funct3 | rd | opcode | R-type |
| rs3 | funct2 | rs2 | rs1 | funct3 | rd | opcode | R4-type |
| imm[11:0] | | | rs1 | funct3 | rd | opcode | I-type |
| imm[11:5] | | rs2 | rs1 | funct3 | imm[4:0] | opcode | S-type |

**RV32Q Standard Extension**

| | | | | | | |
|---|---|---|---|---|---|---|
| imm[11:0] | | rs1 | 100 | rd | 0000111 | FLQ |
| imm[11:5] | | rs2 | rs1 | 100 | imm[4:0] | 0100111 | FSQ |
| rs3 | 11 | rs2 | rs1 | rm | rd | 1000011 | FMADD.Q |
| rs3 | 11 | rs2 | rs1 | rm | rd | 1000111 | FMSUB.Q |
| rs3 | 11 | rs2 | rs1 | rm | rd | 1001011 | FNMSUB.Q |
| rs3 | 11 | rs2 | rs1 | rm | rd | 1001111 | FNMADD.Q |
| 0000011 | | rs2 | rs1 | rm | rd | 1010011 | FADD.Q |
| 0000111 | | rs2 | rs1 | rm | rd | 1010011 | FSUB.Q |
| 0001011 | | rs2 | rs1 | rm | rd | 1010011 | FMUL.Q |
| 0001111 | | rs2 | rs1 | rm | rd | 1010011 | FDIV.Q |
| 0101111 | | 00000 | rs1 | rm | rd | 1010011 | FSQRT.Q |
| 0010011 | | rs2 | rs1 | 000 | rd | 1010011 | FSGNJ.Q |
| 0010011 | | rs2 | rs1 | 001 | rd | 1010011 | FSGNJN.Q |
| 0010011 | | rs2 | rs1 | 010 | rd | 1010011 | FSGNJX.Q |
| 0010111 | | rs2 | rs1 | 000 | rd | 1010011 | FMIN.Q |
| 0010111 | | rs2 | rs1 | 001 | rd | 1010011 | FMAX.Q |
| 0100000 | | 00011 | rs1 | rm | rd | 1010011 | FCVT.S.Q |
| 0100011 | | 00000 | rs1 | rm | rd | 1010011 | FCVT.Q.S |
| 0100001 | | 00011 | rs1 | rm | rd | 1010011 | FCVT.D.Q |
| 0100011 | | 00001 | rs1 | rm | rd | 1010011 | FCVT.Q.D |
| 1010011 | | rs2 | rs1 | 010 | rd | 1010011 | FEQ.Q |
| 1010011 | | rs2 | rs1 | 001 | rd | 1010011 | FLT.Q |
| 1010011 | | rs2 | rs1 | 000 | rd | 1010011 | FLE.Q |
| 1110011 | | 00000 | rs1 | 001 | rd | 1010011 | FCLASS.Q |
| 1100011 | | 00000 | rs1 | rm | rd | 1010011 | FCVT.W.Q |
| 1100011 | | 00001 | rs1 | rm | rd | 1010011 | FCVT.WU.Q |
| 1101011 | | 00000 | rs1 | rm | rd | 1010011 | FCVT.Q.W |
| 1101011 | | 00001 | rs1 | rm | rd | 1010011 | FCVT.Q.WU |

**RV64Q Standard Extension (in addition to RV32Q)**

| | | | | | |
|---|---|---|---|---|---|
| 1100011 | 00010 | rs1 | rm | rd | 1010011 | FCVT.L.Q |
| 1100011 | 00011 | rs1 | rm | rd | 1010011 | FCVT.LU.Q |
| 1101011 | 00010 | rs1 | rm | rd | 1010011 | FCVT.Q.L |
| 1101011 | 00011 | rs1 | rm | rd | 1010011 | FCVT.Q.LU |

| 31 27 | 26 25 | 24 20 | 19 15 | 14 12 | 11 7 | 6 0 | |
|---|---|---|---|---|---|---|---|
| funct7 | | rs2 | rs1 | funct3 | rd | opcode | R-type |
| rs3 | funct2 | rs2 | rs1 | funct3 | rd | opcode | R4-type |
| imm[11:0] | | | rs1 | funct3 | rd | opcode | I-type |
| imm[11:5] | | rs2 | rs1 | funct3 | imm[4:0] | opcode | S-type |

**RV32Zfh Standard Extension**

| | | | | | | |
|---|---|---|---|---|---|---|
| imm[11:0] | | | rs1 | 001 | rd | 0000111 | FLH |
| imm[11:5] | | rs2 | rs1 | 001 | imm[4:0] | 0100111 | FSH |
| rs3 | 10 | rs2 | rs1 | rm | rd | 1000011 | FMADD.H |
| rs3 | 10 | rs2 | rs1 | rm | rd | 1000111 | FMSUB.H |
| rs3 | 10 | rs2 | rs1 | rm | rd | 1001011 | FNMSUB.H |
| rs3 | 10 | rs2 | rs1 | rm | rd | 1001111 | FNMADD.H |
| 0000010 | | rs2 | rs1 | rm | rd | 1010011 | FADD.H |
| 0000110 | | rs2 | rs1 | rm | rd | 1010011 | FSUB.H |
| 0001010 | | rs2 | rs1 | rm | rd | 1010011 | FMUL.H |
| 0001110 | | rs2 | rs1 | rm | rd | 1010011 | FDIV.H |
| 0101110 | | 00000 | rs1 | rm | rd | 1010011 | FSQRT.H |
| 0010010 | | rs2 | rs1 | 000 | rd | 1010011 | FSGNJ.H |
| 0010010 | | rs2 | rs1 | 001 | rd | 1010011 | FSGNJN.H |
| 0010010 | | rs2 | rs1 | 010 | rd | 1010011 | FSGNJX.H |
| 0010110 | | rs2 | rs1 | 000 | rd | 1010011 | FMIN.H |
| 0010110 | | rs2 | rs1 | 001 | rd | 1010011 | FMAX.H |
| 0100000 | | 00010 | rs1 | rm | rd | 1010011 | FCVT.S.H |
| 0100010 | | 00000 | rs1 | rm | rd | 1010011 | FCVT.H.S |
| 1010010 | | rs2 | rs1 | 010 | rd | 1010011 | FEQ.H |
| 1010010 | | rs2 | rs1 | 001 | rd | 1010011 | FLT.H |
| 1010010 | | rs2 | rs1 | 000 | rd | 1010011 | FLE.H |
| 1110010 | | 00000 | rs1 | 001 | rd | 1010011 | FCLASS.H |
| 1100010 | | 00000 | rs1 | rm | rd | 1010011 | FCVT.W.H |
| 1100010 | | 00001 | rs1 | rm | rd | 1010011 | FCVT.WU.H |
| 1110010 | | 00000 | rs1 | 000 | rd | 1010011 | FMV.X.H |
| 1101010 | | 00000 | rs1 | rm | rd | 1010011 | FCVT.H.W |
| 1101010 | | 00001 | rs1 | rm | rd | 1010011 | FCVT.H.WU |
| 1111010 | | 00000 | rs1 | 000 | rd | 1010011 | FMV.H.X |
| 0100001 | | 00010 | rs1 | rm | rd | 1010011 | FCVT.D.H |
| 0100010 | | 00001 | rs1 | rm | rd | 1010011 | FCVT.H.D |
| 0100011 | | 00010 | rs1 | rm | rd | 1010011 | FCVT.Q.H |
| 0100010 | | 00011 | rs1 | rm | rd | 1010011 | FCVT.H.Q |

**RV64Zfh Standard Extension (in addition to RV32Zfh)**

| | | | | | |
|---|---|---|---|---|---|
| 1100010 | 00010 | rs1 | rm | rd | 1010011 | FCVT.L.H |
| 1100010 | 00011 | rs1 | rm | rd | 1010011 | FCVT.LU.H |
| 1101010 | 00010 | rs1 | rm | rd | 1010011 | FCVT.H.L |
| 1101010 | 00011 | rs1 | rm | rd | 1010011 | FCVT.H.LU |

Table 1: Instruction listing for RISC-V