
Sample circuit files

Files new to MC10 are shown in *italics*.

Schematic	Description
283	Use of digital primitives to model a 283 logic unit
381	Use of digital primitives to model a 381 logic unit
3D1	Use of 3D plots
3D2	Use of 3D plots
555ASTAB	Use of the 555 macro in an astable application
555MONO	Use of the 555 macro in a monostable application
A_BOOST_CM_OL	Boost current mode averaged model open loop plot
A_BOOST_CM_ZOUT	Boost current mode averaged model Zout plot
A_BOOST_VM	Boost voltage mode averaged model open loop plot
A_BUCK_CM	Buck current mode averaged model open loop plot
A_BUCK_VM	Buck voltage mode averaged model open loop plot
A_BUCKBOOST	Buckboost current mode averaged model open loop plot
A_FLYBACK	Flyback voltage mode averaged model open loop plot
A_FORWARD	Forward voltage mode averaged model open loop plot
A_NCP	NCP1200 Converter
A_RESO_DC	Resonant converter DC analysis
A_RESO_OL	Resonant converter averaged model open loop plot
A_SEPIC	Single Ended Primary Inductance Converter
AD16	AtoD and DtoA elements
AMTEST1	AM macro usage
ANIM3	Animation components
ANIM4	Animation components
ANIM5	Animation components
ANIM6	Animation components
ANIM7	Animation components
BAX	Steps a resistor to model a pot element
BPFILT	Analysis of a bandpass filter
BUTTERN	Use of a Laplace source to represent a Butterworth filter
BUFFER	Used to illustrate the Waveform Buffer
CARLO	Monte Carlo routines in transient and AC analysis
CARLO2	Monte Carlo routines in DC analysis
CARLO4	Monte Carlo routines in transient and AC analysis
CHOKE	Analysis of a diode choke circuit
CMOS	MOSFETs in an inverter configuration
CMOS_COUNTER	Hierarchically-organized CMOS counter
Schematic	Description
COLPITTS	Analysis of a colpitts oscillator
COMPDEMO	Comparator macro
CORE	Use of the core model and plotting a BH curve
CORE3	Use of the nonlinear core model with multiple inductors
COUNTER	Analysis of a binary counter
COUNTER2	Analysis of a BCD counter
CROSSOVR	Analysis of a passive 1kHz cross-over network
CURVES	BJT IV curves
DECODER	Use of a digital subcircuit as a decoder
DIAC1	Characteristic curves for a DIAC
DIAC2	Dimmer circuit using a DIAC and a TRIAC. Illustrates stepping of a component variable.

DIFFAMP	Analysis of a differential amplifier
DIG_POWER	How to change the digital power supplies
DIST_DEMO1	Harmonic and intermodulation distortion analysis
DIRA	Use of the operators d, avg, sum, and rms
ECLGATE	Analysis of an analog equivalent ECL gate
EYE_DIAGRAM	How to do an eye diagram plot
F1	Use of the VCO macro
F2	Use of a nonlinear function source
F3	Use of a nonlinear function source
F4	Use of the Triode macro
FFT1	Use of DSP and complex operators
FFT3	Use of cross-correlation and auto-correlation operators
FFT4	Use of the IFT operator
FFT5	Use of the auto-correlation operator
FFT7	Use of the DSP dialog box to eliminate startup transients
LINKS	Illustrates the use of file links.
FILTER	Chebyshev filter and use of the Noise macro
FSK2	Use of the FSK modulator macro
FSTIM8	Use of the file stimulus component
GASFET	Use of the GaAsFET component
GILBERT	Analysis of a Gilbert multiplier
GUMMEL	Use of the Gummel-Poon SPICE BJT model
GYRTEST	Use of the gyrator macro
IBIS3	IBIS component usage
IDEALTRANS	IDEAL2 and IDEAL3 transformer macros
IVBJT	Use of DC analysis to plot the IV curves of a BJT
L1	Use of a Laplace source to model a passive network
L2	Use of Laplace sources to model transmission lines
L3	Use of a Laplace source to model a Butterworth filter

Schematic

Description

LM117REG	Using the LM117 model
LP8	8'th order IIR digital filter using Z sources
LTRA3	Use of the lossy transmission line
MIXED	Analysis of a mixed-mode circuit
MIXED1	Analysis of a mixed-mode circuit
MIXED4	Analysis of a mixed-mode circuit
MODELRLC	Use of temperature stepping
MOSCAPS	Plotting of MOSFET capacitance curves
MOSDIFF	Analysis of a MOSFET differential amplifier
NOISEBJT	Plotting of input and output noise
NPORT4	N-PORT device
NYQUIST	Plotting of a Nyquist graph
O7	Analysis of a mixed-mode circuit
OPAMP1	Use of the three levels of opamps
OPT1	Using the Optimizer to maximize power transfer
OPT2	Using the Optimizer to maximize low frequency gain
OPT3	Using the Optimizer to design matching networks
OPT4	Using the Optimizer in curve fitting
OSC1	Use of the Schmitt macro in an oscillator
P1	Use of the Laplace table source for a RC network
PERF1	Demonstrates the use of performance plots
PERF2	Demonstrates the use of performance plots
PLA2	Use of a PLA subcircuit as an equality comparator

PLA3	Use of the PLA digital primitive
POTDEMO	Use of the pot macro
PRINT	Use of the print preview for the schematic
PRLC	Analysis of a simple passive network
PSK2	Use of the PSK modulator macro
<i>PSS1</i>	<i>PSS usage in transient analysis on a buck converter</i>
<i>PSS2</i>	<i>PSS usage in harmonic distortion on an audio amplifier</i>
<i>PSS3</i>	<i>PSS usage in transient analysis on a simple rectifier</i>
<i>PSS4</i>	<i>PSS usage in transient analysis for an RF mixer</i>
RCA3040	Analysis of a RCA3040 component
RECTIFIER_45	Three-phase SCR converter
RELAY	Using the relay models
RISE	Use of Monte Carlo routines for rise times
S_2FLY_CM	Two-Switch Flyback Converter
S_2FOR_CM	Two-Switch Forward Converter
S_BOOST_CM	Boost Current Mode Converter
S_BOOST_VM	Boost Voltage Mode Converter
S_BUCK_CM	Buck Current Mode Converter

Schematic

Description

S_BUCK_SYN	Synchronous Buck Voltage Mode Converter
S_BUCK_SYN2	Synchronous Buck Current Mode Converter
S_BUCK_VM	Buck Voltage Mode Converter
S_BUCKBOOST_CM	Buck-Boost Current Mode Converter
S_BUCKBOOST_VM	Buck-Boost Voltage Mode Converter
S_FLYBACK_CM	Flyback Current Mode Converter
S_FLYBACK_VM	Flyback Voltage Mode Converter
S_FORWARD_CM	Forward Current Mode Converter
S_FORWARD_VM	Forward Voltage Mode Converter
S_FULL_CM	Full Bridge Current Mode Converter
S_FULL_VM	Full Bridge Voltage Mode Converter
S_FULL_XFMR	Full Bridge with XFMR Current Mode Converter
S_HALF_CM	Half Bridge Current Mode Converter
S_HALF_VM	Half Bridge Voltage Mode Converter
S_HALF_XFMR	Half Bridge with XFMR Current Mode Converter
S_NCP	NCP1200 Converter
S_PUSH_CM	Push-Pull Current Mode Converter
S_PUSH_VM	Push-Pull Voltage Mode Converter
SH2	Sample and hold component.
SMITH	Smith chart
SPAR1	Use of the N_Port device. Importing S-parameters from a Touchstone file. Use of Smith charts.
SPARK	Spark-gap macro usage
STIM_DEMO	Digital stimulus generators
STIMSAMP	Digital stimulus generators
STIMTST2	Stim generator in counting from 0 to F
STIMTST3	INCR command in a Stim generator
STIMTST4	Random characters in a Stim generator
SUBCKT	Use of an analog subcircuit
SUBCKT1	Adding subcircuits to the library
SWITCH	Use of the three types of the Switch component
SYSTEM1	Analysis of a mechanical system
SYSTEM2	Analog behavioral modeling components
T1	Nonlinear table sources

TIMER	Timer device
THY1	Use of the Put, Triac, and SCR macros
THY2	Analysis of a SCR phase control
TL1	Use of transmission line and plotting line variables
TL2	AC simulation of a transmission line
TL3	Plotting the input small signal impedance

Schematic

	Description
TRANS	Use of the three methods of implementing a transformer
TTLINV	Use of mixed mode analysis
TUBE_AMP	Vacuum tube amplifier
TUBE6L6	Vacuum tube circuit
UA709	Analysis of a UA709 opamp
UA723REG	Using the UA723 model
UA741	Analysis of a UA741 opamp
USER	User source
USER2	Multiple user sources
XTAL1	Crystal macro
ZDOMAIN	Z transform source

SPICE files

	Description
ASTABLE.CKT	Analysis of a SPICE circuit
CHOKE.CKT	SPICE netlist of CHOKE.CIR
ECLGATE.CKT	SPICE netlist of ECLGATE.CIR
PLA1.CKT	Use of a PLA subcircuit in a SPICE file
PLA2.CKT	The PLA subcircuit that is used in PLA2
RCA3040.CKT	SPICE netlist of RCA3040
RTLINV.CKT	Analysis of a SPICE RTL inverter
SCHMITT.CKT	Analysis of a SPICE Schmitt trigger
TTLINV.CKT	SPICE analysis of a TTL inverter
UA709.CKT	SPICE netlist of UA709