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**$UNENCRYPTED_LIB
**$INTERFACE
* PSpice Model Editor - Version 16.2.0
*$
* LM3485
********************************************************************************
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** and performance is with the customer
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** Released by: WEBENCH Design Center, Texas Instruments Inc.
* Part: LM3485
* Date: 26DEC2012
* Model Type: Transient
* Simulator: PSPICE
* Simulator Version: 16.2.0.s003
* EVM Order Number: AN-1227
* EVM Users Guide: SNVA052A, 10MAY2004
* Datasheet: SNVS178F, 29SEP2009
*
* Model Version: Final 1.0
*
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* Updates:
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* Final 1.0
* Release to Web.
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********************************************************************************
.SUBCKT LM3485_TRANS ISEN GND FB ADJ PGATE VIN
E1 VIN VCC VALUE = {IF(V(VIN)<9,(V(VIN)-0),8.4)}
XFB FB REFLO COMPLO COMPWDEL_0
XFB2 FB REFHI COMPHI COMPWDEL_0
XFB3 ADJ ISEN ILIM COMPWDEL_2
G2 ADJ GND VALUE={5.5u}
XA3 ILIM 32 ONESHOT AND2A
XA4 PWM 32 INVERTERA4
X3 ONESHOT RESET Q QN RSFF
RGATE PGATEo PGATE 20
E4 PGATEo GND VALUE = {IF(V(DRIVE)>1,V(VIN),V(VCC))}
XA5 Q COMP PWM OR2A5
X6 RESET GND QN GND SSWITCH
G6 0 RESET VALUE = {IF(V(Q)>2.5,2m,0)}
C7 RESET GND 8n IC=5
D2 GND RESET DN751
.MODEL DN751 D BV=4.9458 CJO=406.80P IBV=10MA IS=1E-11
+ M=.33 N=1.27 RS=7.7083 TT=50N VJ=.75
V1 REFHI GND DC=1.247
V2 REFLO GND DC=1.237
XA1 COMPLO 17 COMP AND2A
XA2 COMPHI COMP 17 OR2A3
R5 DRIVE COMP 1m
.ENDS LM3485_TRANS
*$
.SUBCKT COMPWDEL_0 1 2 3 PARAMS: TD=190N
E1 4 0 VALUE = {IF(V(1)>V(2),5,0)}
T1 4 0 5 0 Z0=1 TD={TD}
R1 5 0 1
E2 3 0 VALUE = {IF(V(5)<0,0,V(5))}
.ENDS COMPWDEL_0
*$
.SUBCKT COMPWDEL_2 1 2 3 PARAMS: TD=10N
E1 4 0 VALUE = {IF(V(1)>V(2),5,0)}
T1 4 0 5 0 Z0=1 TD={TD}
R1 5 0 1
E2 3 0 VALUE = {IF(V(5)<0,0,V(5))}
.ENDS COMPWDEL_2
*$
.SUBCKT RSFF SET RESET Q QN
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*A1 1 2 3 SET_DIN RESET_DIN Q_DOUT QN_DOUT SRLATCH2A1
EA1_Q 5 0  VALUE = {IF(V(SET)>2.5,5,IF(V(RESET)>2.5
+ & V(SET)<0.1,0.1,V(Q)))}
EA2_QN 6 0 VALUE = {IF(V(SET)>2.5,0.1,IF(V(RESET)>2.5
+ & V(SET)<0.1,5,V(QN)))}
RQ 5 Q 1
CQ Q 0 1e-15 IC=100m
RQN 6 QN 1
CQN QN 0 1e-15 IC=5
.ENDS
*$
.SUBCKT SSWITCH 1 2 3 4 PARAMS: RON=1 ROFF=1MEG VON=5 VOFF=0
*CONNECTIONS    + - NC+ NC-
*PARAMETERS: RON ON RESISTANCE IN OHMS, ROFF OFF RESISTANCE IN OHMS
* VON ON CURRENT IN AMPS, VOFF OFF CURRENT IN AMPS
* IF V(3,4) > VON THEN RSWITCH=RON, IF V(3,4) < VOFF THEN RSWITCH=ROFF, ELSE
* RSWITCH WILL SMOOTHLY TRANSISTION BETWEEN THE ON AND OFF STATES
S_A1 1 2 3 4 SMOOTH
.MODEL SMOOTH VSWITCH RON={RON} ROFF={ROFF} VON={VON} VOFF={VOFF}
.ENDS SSWITCH
*$
.SUBCKT AND2A A B Y PARAMS: VDD=5 VSS=0 VTHRESH=2.5
E_ABMGATE   YINT 0 VALUE {{IF(V(A) > {VTHRESH}  &
+ V(B) > {VTHRESH},{VDD},{VSS})}}
RINT YINT Y 1
CINT Y 0 3n
.ENDS AND2A
*$
.SUBCKT INVERTERA4 A  Y PARAMS: VDD=5 VSS=0 VTHRESH=2.5
E_ABMGATE    YINT 0 VALUE {{IF(V(A) > {VTHRESH} ,
+ {VSS},{VDD})}}
RINT YINT Y 1
CINT Y 0 0.8n
.ENDS INVERTERA4
*$
.SUBCKT OR2A5 A B Y PARAMS: VDD=5 VSS=0 VTHRESH=2.5
E_ABMGATE   YINT 0 VALUE {{IF(V(A) > {VTHRESH}  |
+ V(B) > {VTHRESH},{VDD},{VSS})}}
RINT YINT Y 1
CINT Y 0 1f
.ENDS OR2A5
*$
.SUBCKT OR2A3 A B Y PARAMS: VDD=5 VSS=0 VTHRESH=2.5
E_ABMGATE   YINT 0 VALUE {{IF(V(A) > {VTHRESH}  |
+ V(B) > {VTHRESH},{VDD},{VSS})}}
RINT YINT Y 1
CINT Y 0 1n
.ENDS OR2A3
*$
.SUBCKT LDCR 1 2 PARAMS: IC=0 L=1.5E-5 DCR=0.04
*{ L = 1.5E-5 DCR = 0.04 }
* PARAMETERS: L INDUCTANCE IN HENRIES, DCR DC SERIES RESISTANCE IN OHMS
L1 2 3 1.5E-5  IC = { IC }
RDCR 3 1 { DCR }
.ENDS LDCR
*$
.SUBCKT COUT 1 2 PARAMS: IC=0 C=9.4E-5 ESR=0.0325
* C = 9.4E-5 F
* ESR = 0.0325 Ohm
Ccap 1 3 { C }  IC = { IC }
Resr 3 2 { ESR }
.ENDS COUT
*$
.SUBCKT CIN 1 2 PARAMS: IC=0 C=3.0E-6 ESR=0.0033333333333333335
* C = 3.0E-6 F
* ESR = 0.0033333333333333335 Ohm
Ccap 1 3 { C } IC = { IC }
Resr 3 2 { ESR }
.ENDS CIN
*$
.SUBCKT MBRS140T3 A K
D1 A K DIODE_SCHOTTKY
.MODEL DIODE_SCHOTTKY D
+BV=500 CJO=470E-12 EG=0.69 IBV=1E-6
+ IS=9E-6 M=0.8 N=1.442 RS=60E-3 VJ=1 XTI=2
.ENDS MBRS140T3
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*$
.SUBCKT FCD5614P drain gate source
* Cgd = 2.5E-10 F -> Gate to drain Capacitance fit to approximate gate charge
* Cgs = 1.0E-9 F -> Gate to source Capacitance
* Cj0 = 2.5E-10 F -> Approximated Source to Drain Capacitance at Vds=0 (by given Coss at certain Vd
s)
* VdsMax = 66.0 V -> Maximum drain to source Voltage
* RdsON = (2 * 0.0525 ) Ohms -> MOSFET on resistance
* Rgate = 3.0 Ohms -> Gate Resistance
* Vth = -3.0 V -> Threshold Voltage
Cgd g d 2.5E-10
M1 d g s s _M1_modX L=1u W=1u
.MODEL _M1_modX PMOS CGDO=0 CGSO=0 KP=100 RD=0 RS=0
+ TOX=1E-7 UO=600 VTO= -3.0
Rds2 source s 0.0525
Rds1 drain d 0.0525
RG gate g 3.0
Cgs g s 1.0E-9
Dbd drain source Dbt
.MODEL Dbt D
+BV= 66.0 CJO= 2.5E-10 M=0.35 VJ=0.9
.ENDS FCD5614P
*$
```