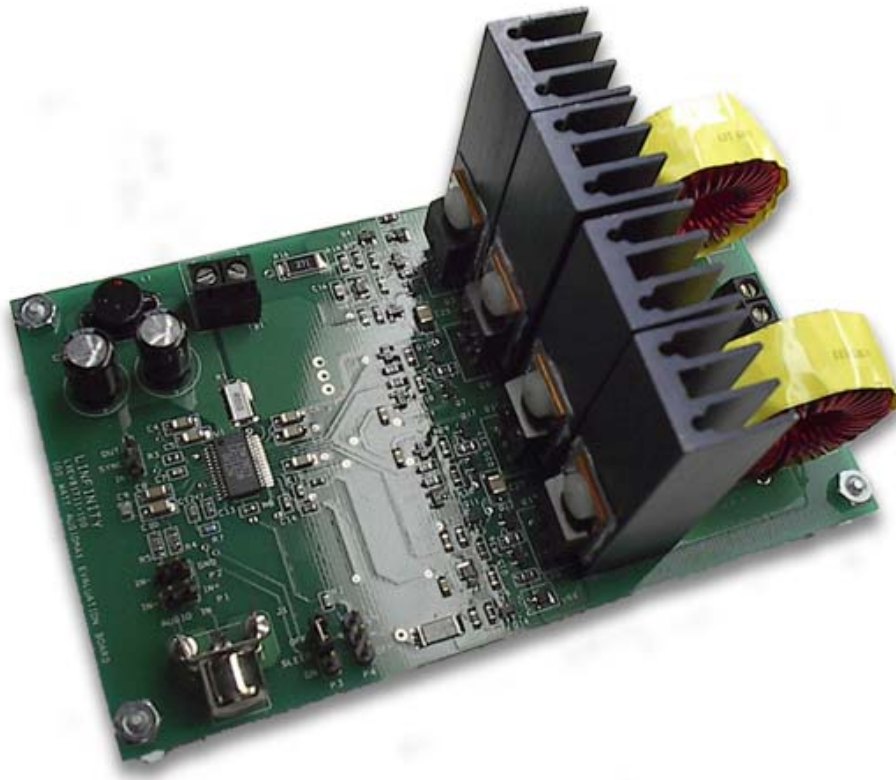


LXE1711-100 AUDIOMAX EVALUATION KIT USER'S GUIDE



LXE1711-100 Evaluation Board Quick Start Guide

The LXE1711-100 Evaluation Board is a fully functional mono class-D amplifier. Connection to a single power supply, one speaker, and an audio source is all that is required to begin evaluating the amplifier. The amplifier will support continuous output power levels up to **>110W** into 2 ohm load (<1% THD+N).

Board Setting

1. Power and Ground Connections: The terminal TB1 is for the power supply connection. Vcc is connected to the positive polarity of the power supply or battery (+7V ~ +25V); the GND is connected to the negative polarity of the power supply or battery. Please make sure your power supply polarity connection and supply voltage is correct before you start to evaluate the board.
2. Speaker Connection: TB2 is speaker output. Connect speaker “+” and “-“ to “OUT+” and “OUT-“ of TB2. This evaluation board is designed for standard 4 ohm speaker loads. For different impedance speakers, the output filter values should be modified to optimize the output frequency response. Please see AudioMAX Design Resource (AN-16) for LC filter values.
3. Audio Input Connections: P1 and J1 are the audio input connections. P1 supports differential audio inputs, and J1 is for the single-ended audio inputs. When audio inputs are differential, the positive audio inputs are connected to IN+ pin, while the negative input is connected to IN- pin of the P1 terminal. P2 jumper is left open when using differential input. When audio inputs are single-ended, the inputs audio source can either be connected to terminal P1, or to J1. In this single-ended connection, jumpers P2 must be closed so that the IN- is connected to Ground.
4. SLEEP/MUTE Connections: P3 is the jumper selection for ON/OFF of the MUTE function, and P4 is the jumper for ON/OFF of the SLEEP function. To enable the amplifier, both jumpers should be set to “OFF” (SLEEP is OFF, default is left OPEN, and MUTE is OFF).

Audio Performance

1. 20Hz-20kHz Audio Bandwidth, less than $\pm 1\text{dB}$;
2. THD+N <0.06% Typical (1Wrms, 1kHz, 4 ohms);
3. Maximum Efficiency 85%-90%;
4. Output Power:
60W @4ohm, <1% THD+N; 80W @4ohm, 10% THD+N
110W @2ohm, <1% THD+N; 150W @2ohm, 10% THD+N;
5. PSRR: 70dB Typical ;
6. Differential Input To Minimize noise Effects;

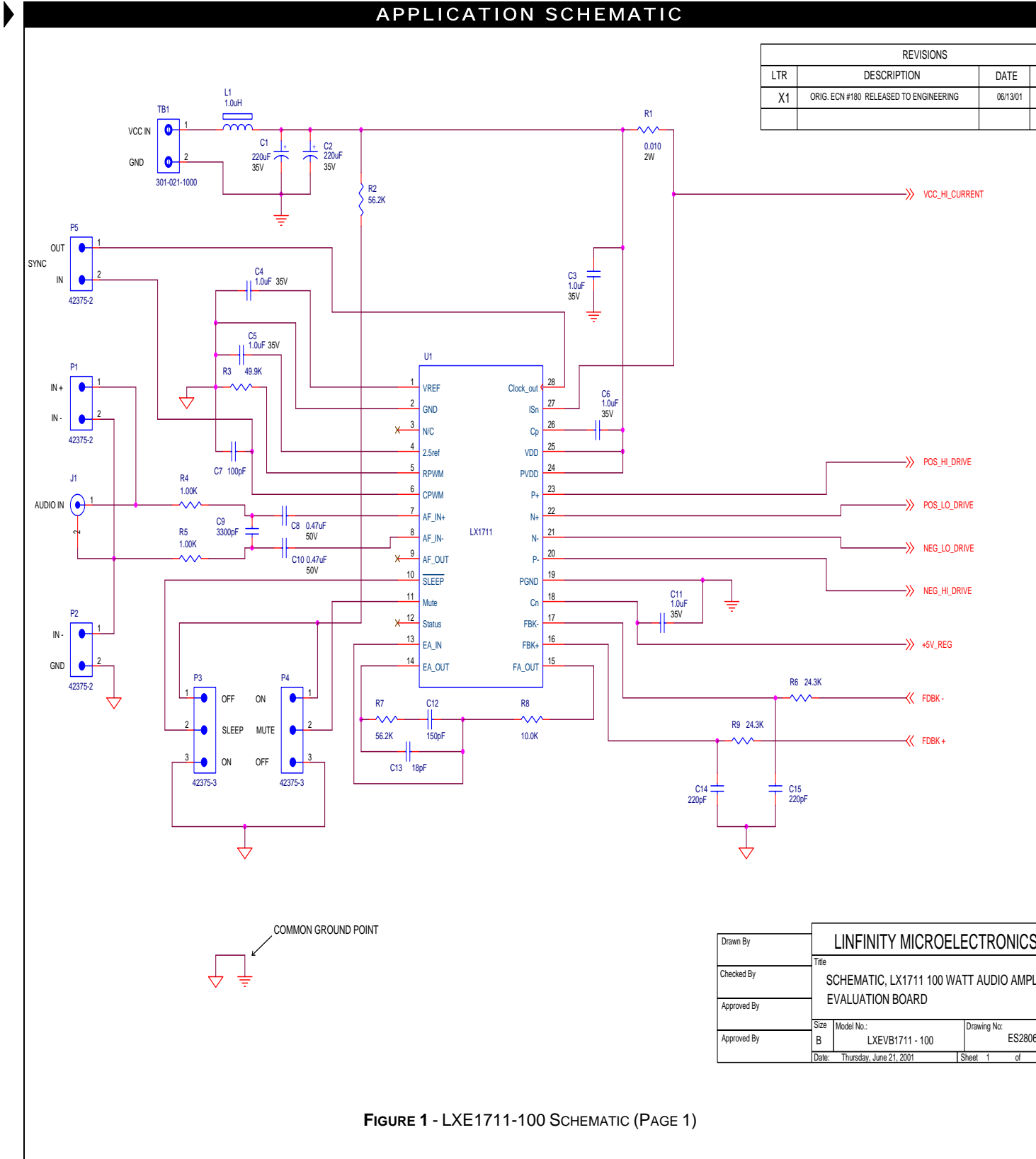
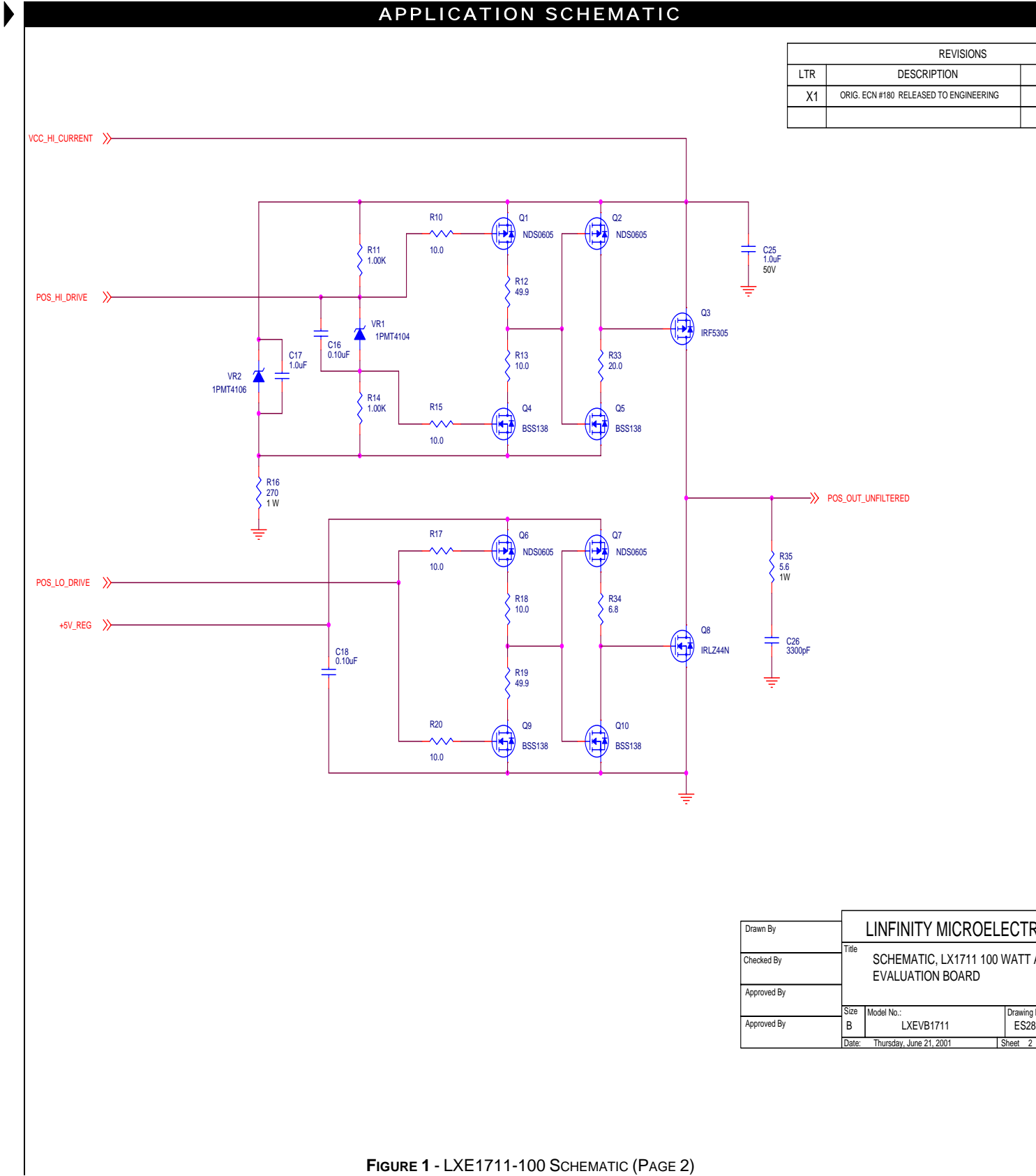


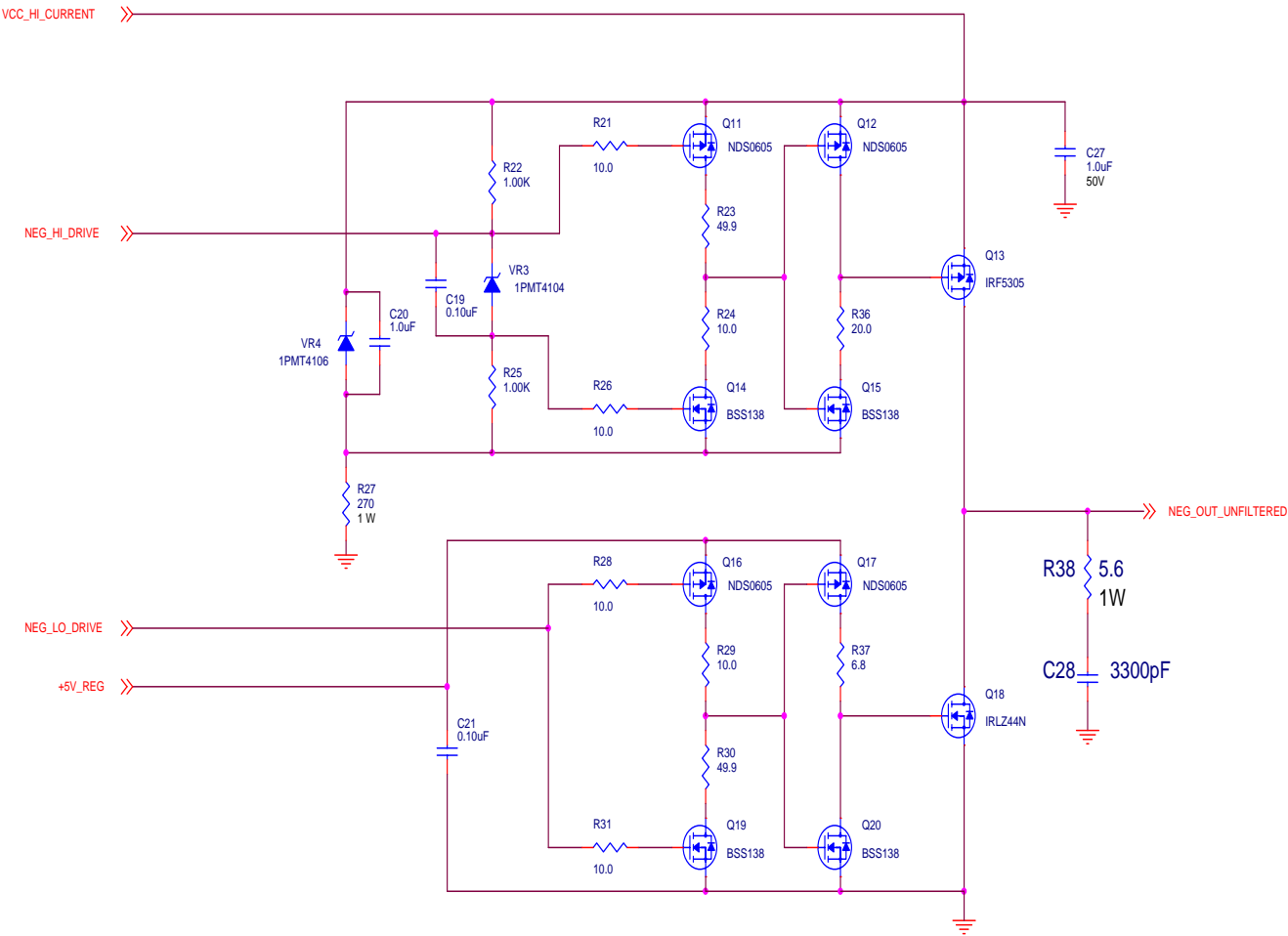
FIGURE 1 - LX1711-100 SCHEMATIC (PAGE 1)



Drawn By	LINFINITY MICROELECTR		
Checked By	Title SCHEMATIC, LX1711 100 WATT / EVALUATION BOARD		
Approved By			
Approved By	Size B	Model No.: LXEVB1711	Drawing: ES28
Date:		Thursday, June 21, 2001	Sheet 2

APPLICATION SCHEMATIC

REVISIONS	
LTR	DESCRIPTION
X1	ORIG. ECN #180 RELEASED TO ENGINEERING

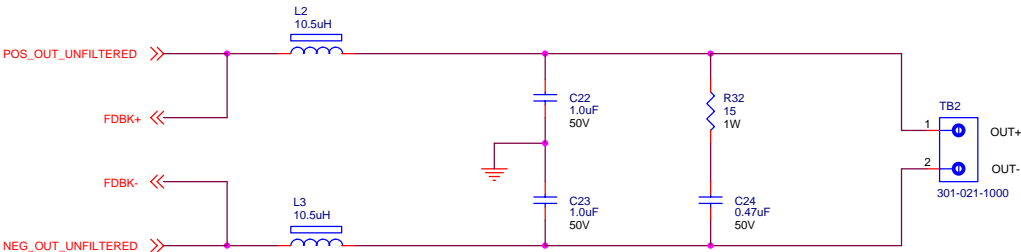


Drawn By	LINFINITY MICROEL	
Checked By	Title	SCHEMATIC, LX1711 100 EVALUATION BOARD
Approved By	Size	B
Approved By	Model No.:	LXEB1711
Date: Thursday, June 21, 2001		

FIGURE 1 - LXE1711-100 SCHEMATIC (PAGE 3)

APPLICATION SCHEMATIC

REVISIONS		
LTR	DESCRIPTION	DATE
X1	ORIG. ECN #180 RELEASED TO ENGINEERING	0



Drawn By	LINFINITY MICROELECTR		
Checked By	Title		
Approved By	SCHEMATIC, LX1711 100 WATT AI EVALUATION BOARD		
Approved By	Size	Model No.:	Drawing No.
	B	LXEVB1711	ES2806
	Date:	Thursday, June 21, 2001	Sheet 4

FIGURE 1 - LX1711-100 SCHEMATIC (PAGE 4)

ABSOLUTE MAXIMUM RATINGS

Unless otherwise specified, the following specifications apply over the operating ambient temperature $0^{\circ}\text{C} \leq T_A \leq 70^{\circ}\text{C}$

Parameter	Symbol	Test Conditions	LX1722			Units
			Min	Typ	Max	
Supply Voltage	VCC		7		25	V
Supply Current	IDD	VCC=25V			8	A
Quiescent Current	IQ	VCC=25V, Output Open		200		mA
Sleep, Status		VCC = 25V	-0.3		VCC + 0.3	V
RPWM, CPWM, Mute		VCC = 25V	-0.3		VCC + 0.3	V
LIN+, LIN-, RIN+, RIN-	VIN	VCC = 25V	-0.3		VCC + 0.3	V
LPREOUT, RPREOUT	VPRE	VCC = 25V	-0.3		VCC + 0.3	V
Clock Frequency	FOSC	VCC = 25V	250	330	500	KHz

BILL OF MATERIALS

MISCELLANEOUS COMPONENTS

Line Item	Part Description	Manufacturer & Part #	Case	Reference Designators	Qty
1	IC, LX1711 Class D Audio Power Amplifier	MICROSEMI LX1711CDB		U1	1
2	Inductor, 1.0uH SMD Power Inductor			L1	1
2	Inductor, 10.5uH SMD High Current Power Inductor			L2, L3	2
4	Transistor, FET, NDS0605 SOT23 General Purpose P Channel			Q1, Q2, Q6, Q7, Q11, Q12, Q16, Q17	8
5	Transistor, FET, IRF5305 TO220 Power P Channel			Q3, Q13	2
6	Transistor, FET, BSS138 SOT23 General Purpose N Channel			Q4, Q5, Q9, Q10, Q14, Q15, Q19, Q20	8
7	Transistor, FET, IRLZ44N TO220 Power N Channel			Q8, Q18	2
8	Diode, Zener, 10V, 1 Watt,	POWERMITE 1PMT4104		VR1, VR3	2
9	Diode, Zener, 12V, 1 Watt	POWERMITE 1PMT4106		VR2, VR4	2
10	Jack, PCB Mount, RCA Phono Type			J1	1
11	Header, 2 Pin			P1, P2, P5	3
12	Header, 3 Pin			P3, P4	2
13	Terminal Block, 2 Position			TB1, TB2	2
14	Heatsink, TO-220 PCB Mount			HS1, HS2, HS3, HS4	4

CAPACITORS

Line Item	Part Description	Manufacturer & Part #	Case	Reference Designators	Qty
1	Cap: Electrolytic, 220uF, 35 Volt, 20%, 10 x 12.5 Type Thru Hole			C1, C2	2
2	Cap: Ceramic, 1.0uF, 35 Volt, 20%, SMD		1206	C3, C4-C6, C11, C17, C20	7
3	Cap: Ceramic, 100pF, 50 Volt, 5%, SMD		0603	C7	1
4	Cap: Ceramic, 0.47uF, 50 Volt, 20%, SMD		1206	C8, C10, C24	3
5	Cap: Ceramic, 3300pF, 50 Volt, 10%, SMD		1206	C9, C26, C28	3
6	Cap: Ceramic, 150pF, 50 Volt, 5%, SMD		0603	C12	1
7	Cap: Ceramic, 18pF, 50 Volt, 5%, SMD		0603	C13	1
8	Cap: Ceramic, 220pF, 50 Volt, 5%, SMD		0603	C14, C15	2
9	Cap: Ceramic, 0.10uF, 50 Volt, 10%, SMD		0805	C16, C18, C19, C21	4
10	Cap: Ceramic, 1.0uF, 50V, 20%		1210	C22, C23, C25, C27	4

RESISTORS

Line Item	Part Description	Manufacturer & Part #	Case	Reference Designators	Qty
1	Resistor, 0.01 Ohms, 2 Watt, 5% SMD		1225	R1	1
2	Resistor, 56.2K Ohms, 1/10 Watt, 1% SMD		0603	R2, R7	2
3	Resistor, 49.9K Ohms, 1/10 Watt, 1% SMD		0603	R3	1
4	Resistor, 1.00K Ohms, 1/10 Watt, 1% SMD		0805	R4, R5, R11, R14, R22, R25	6
5	Resistor, 24.3K Ohms, 1/10 Watt, 1% SMD		0603	R6, R9	2
6	Resistor, 10.0K Ohms, 1/10 Watt, 1% SMD		0603	R8	1
7	Resistor, 10.0 Ohms, 1/10 Watt, 1% SMD		0805	R10, R13, R15, R17, R18, R20, R21, R24, R26, R28, R29, R31	12
8	Resistor, 49.9 Ohms, 1/10 Watt, 1% SMD		0805	R12, R19, R23, R30	4
9	Resistor, 270 Ohms, 1 Watt, 5% SMD		2512	R16, R27	2
10	Resistor, 15 Ohms, 1 Watt, 5% SMD		2512	R32	1
11	Resistor, 20.0 Ohms, 1/10 Watt, 1% SMD		0805	R33, R36	2
12	Resistor, 6.8 Ohms, 1/10 Watt, 10% SMD		0805	R34, R37	2
13	Resistor, 5.6 Ohms, 1 Watt, 10% SMD		2512	R35, R38	2