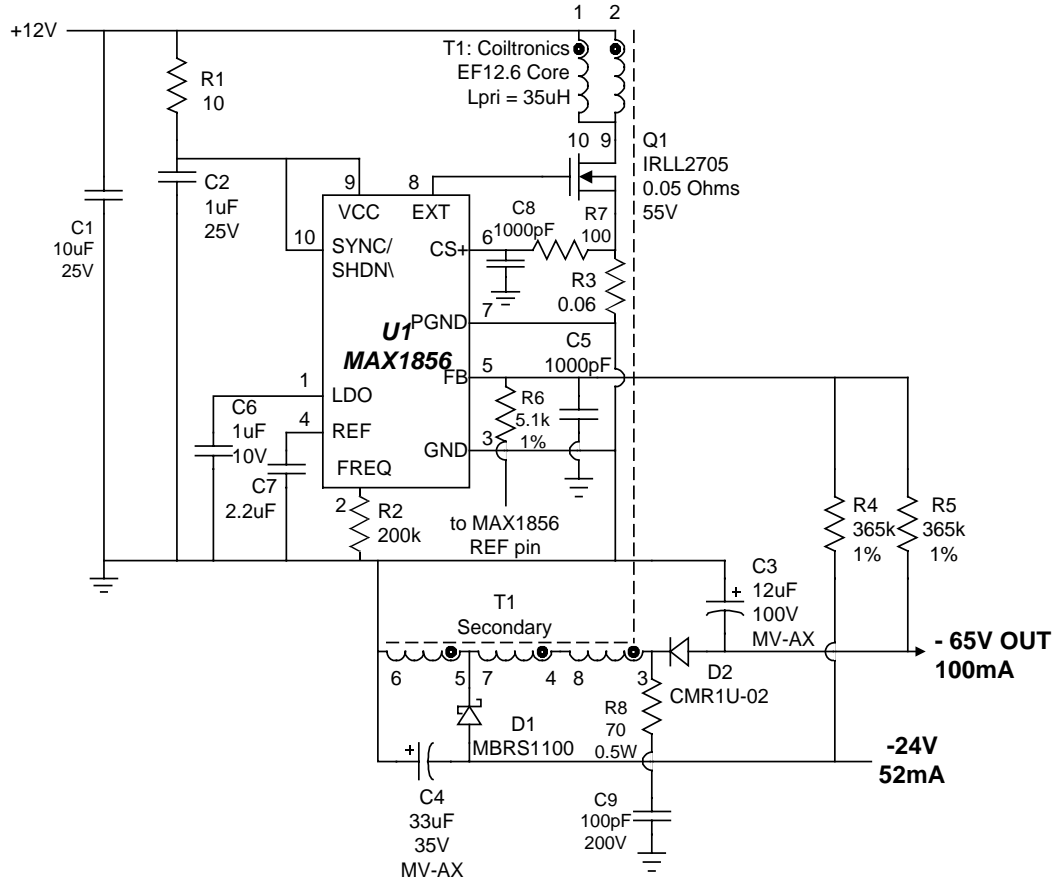


VoIP SLIC Supply

7/19/01 - RWY - 1856-24c

+12V to -24V at 52mA, -65V at 100mA. This uses the MAX1856 and a transformer (that will need about a 1:2:2:1.5 turns ratio) to make a flyback converter.



Notes:

T1: Coiltronics SG7 core (EF12.6) or equivalent (95nH/N*N). The general specs are:
 Primary L = about 35uH (not critical), Primary current rating = >1.5Amps, Turns ratio 1:2:2:1.5.
 Q1: Any logic-level (Ron rated at 5V) N-FET with similar ratings may be substituted.
 C5: Compensates for output capacitor ESR zero, if necessary.

Transformer design:

- Layer 1: Pin 5 to pin 6 – 34 turns #34AWG
- Layer 2: Pin 1 to pin 10 – 17 turns #28AWG
- Layer 3: Pin 4 to pin 7 – 34 turns #34AWG
- Layer 4: Pin 2 to pin 9 – 17 turns #28AWG
- Layer 5: Pin 3 to pin 8 – 22 turns #34AWG

Snubber (R8, C9) needs adjustment in circuit.

SLIC SUPPLY BILL OF MATERIALS
12V Input
-24V @ 52mA or -65V @ 100mA Output
07/19/01

1856-24c

DESIGNATION	QTY	DESCRIPTION
C1	1	10uF 25V ceramic capacitor (1812) Taiyo Yuden TMK432BJ106MM
C2	1	1uF 25V ceramic capacitor (1206) Taiyo Yuden TMK316BJ105ML
C3	1	12uF 100V aluminum electrolytic Sanyo 100MV12AX
C4	2	33uF 35V aluminum electrolytic cap Sanyo 35CV33AX
C5,C8	2	1000pF ceramic capacitor (0805)
C6	1	1uF 10V ceramic capacitor (0805) Taiyo Yuden LMK212BJ105MG
C7	1	2.2uF ceramic capacitor (0805) Taiyo Yuden LMK212BJ225MG
C9	1	100pF 200V ceramic capacitor (radial)
D1	1	1A 100V Schottky diode Motorola MBRS1100
D2	1	1A 200V Ultra-fast recovery diode Central Semi CMR1U-02
N1	1	50m Ohm 55V MOSFET (SOT-223) IRLL2705
R1	1	10 Ohm 5% resistor (0805)
R2	1	200k Ohm 5% resistor (0805)
R3	1	0.06 Ohm 0.5W resistor (2010) Dale WSL-2010-R060F
R4,R5	2	365k Ohm 1% resistor (0805)
R6	1	5.11k Ohm 1% resistor (0805)
R7	1	100 Ohm 5% resistor (0805)
R8	1	70 Ohm 0.5W 5% resistor (axial)
T1	1	1:2,2,1.5 transformer Coiltronics SG7Core Lpri = 35uH
U1	1	MAX1856EUB (10-uMAX)