

# MAXIM

## MAX742 Evaluation Kit

Evaluates: MAX742

### General Description

The MAX742 evaluation kit (EV kit) is a built and tested surface-mount printed circuit assembly intended for quick prototyping and testing purposes. This kit generates a dual regulated  $\pm 12V$  or  $\pm 15V$  output from a 5V regulated input supply. Power conversion efficiency ranges up to 90%, depending on output loading. Applications include low-noise power supplies for precision analog subsystems and distributed power.

### Component List

DESIGNATION	QTY	DESCRIPTION
C1, C2	2	220 $\mu$ F, 10V low-ESR tantalum capacitors AVX TPSE227M010R0100
C11-C16	6	120 $\mu$ F, 20V low-ESR tantalum capacitors Sprague 595D127X0020R2B
C6, C7	2	0.01 $\mu$ F ceramic capacitors
C3, C8	2	0.1 $\mu$ F ceramic capacitors
C4, C5	2	1 $\mu$ F, 20V tantalum capacitors Sprague 595D105X0020T2B or Matsuo 267M 1602 105
C10	1	22 $\mu$ F, 25V tantalum capacitor Sprague 595D225X0025B2B or Matsuo 267E 2502 225
C9	1	10 $\mu$ F, 10V tantalum capacitor Sprague 595D106X0010A2B
D1, D2	2	3A, 30V 1N5821 equivalent (SMT) Schottky diodes, Nihon NSQ03A03 or Motorola MBRS340T3
D3	1	Dual Schottky diode (SOT-23) Central Semiconductor CMPSH-3S
L1, L2	2	47 $\mu$ H inductors, Coiltronics CTX03-12384-1 (500mA output) or CoilCraft D03316-473 (alternate for $\pm 250$ mA output)
R1	1	100 $\Omega$ , 5% resistor
R2, R3	2	0.082 $\Omega$ , 1% resistors, Dale WSL-2512-R082F or IRC LR2512-01-R082-F
N1	1	Dual N-channel MOSFET (both sections in parallel), Motorola MMDF3N02HD or Siliconix Si9936HD
P1	1	Dual P-channel MOSFET (both sections in parallel), Motorola MMDF2P03HD
U1	1	Maxim MAX742CWP
JU1, JU2	2	3-pin headers
None	2	Shunts
None	1	MAX742 PC board
None	1	MAX742 data sheet

### Features

- ◆  $\pm 12V$  or  $\pm 15V$  Dual Tracking Outputs
- ◆ 15W Output Power:  $\pm 12V$  at 625mA  
 $\pm 15V$  at 500mA
- ◆ 13mA Quiescent Supply Current
- ◆ 100kHz or 200kHz Fixed-Frequency PWM Operation
- ◆ All Surface-Mount Construction

### Ordering Information

PART	TEMP. RANGE	BOARD TYPE
MAX742EVKIT-SO	0°C to +70°C	Surface Mount

### Component Suppliers

SUPPLIER	PHONE	FAX
AVX	(207) 282-5111	(207) 283-1941
CoilCraft	(708) 639-6400	(708) 639-1469
Coiltronics	(407) 241-7876	(407) 241-9339
Dale	(402) 563-6582	(402) 563-6418
IRC	(704) 264-8861	(704) 264-8866
Matsuo	(714) 969-2491	(714) 960-6492
Motorola	(602) 244-3576	(602) 244-4015
Murata-Erie	(404) 436-1300	(404) 684-1591
Siliconix	(408) 988-8000	(408) 970-3950
Sprague	(603) 224-1961	(603) 224-1430

### EV Kit



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## Quick Start

The MAX742 EV kit is a fully assembled and tested surface-mount board. Follow these steps to verify board operation. **Do not turn on the power supply until all connections are completed.**

- 1) Connect a 4.5V to 6.0V supply to the pad marked VIN. The ground connects to the GND pad.
- 2) Connect a voltmeter and load (if any) to the VOUT pad.
- 3) Place the shunt on JU1 across pins 1 & 2 for 200kHz operation and on JU2 across pins 1 & 2 for  $\pm 15V$  outputs.
- 4) Turn on the power and verify that the output voltage is  $\pm 15V$ .
- 5) For  $\pm 12V$  outputs, remove the shunt from JU2 pins 1 & 2 and place it across pins 2 & 3.

## Detailed Description

### Jumper Selection

The 3-pin header JU1 selects the frequency of operation. Table 1 lists the jumper-selectable options.

The 3-pin header JU2 selects the output voltages. Table 2 lists the jumper-selectable options.

**Table 1. Jumper JU1 Functions**

SHUNT LOCATION	100/200 PIN	FREQUENCY
2 & 3	Connected to VIN	100kHz
1 & 2	Connected to GND	200kHz

**Table 2. Jumper JU2 Functions**

SHUNT LOCATION	12/15 PIN	OUTPUT VOLTAGE
2 & 3	Connected to VIN	$\pm 12V$
1 & 2	Connected to GND	$\pm 15V$

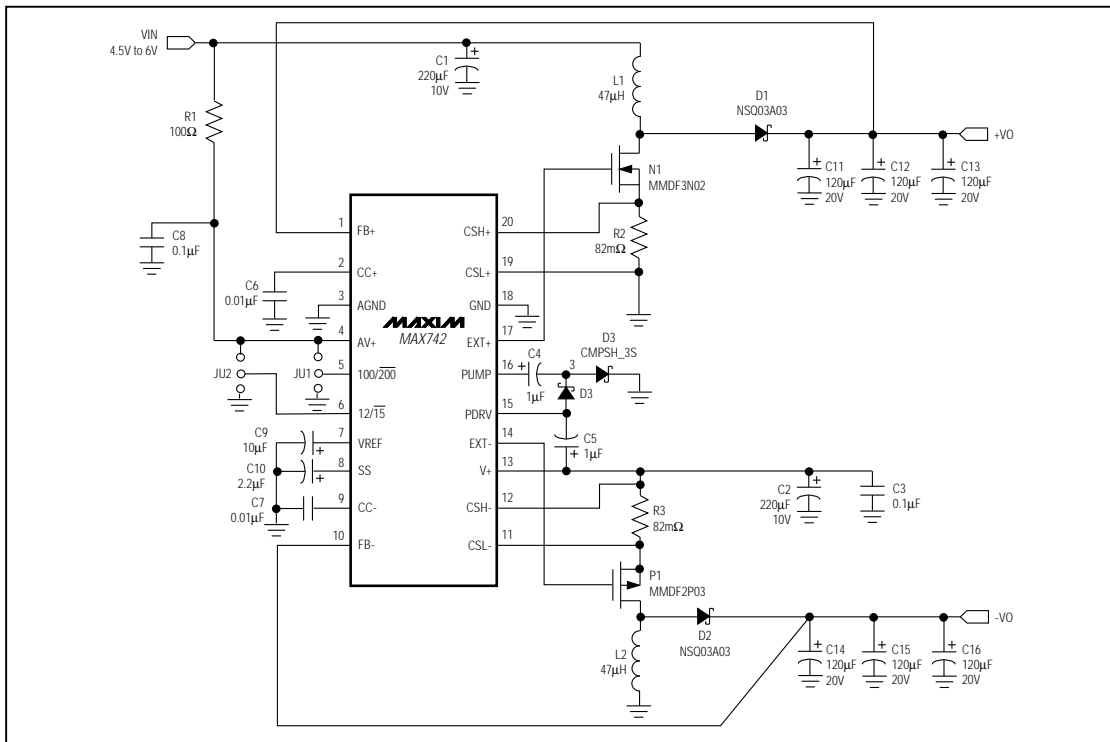


Figure 1. MAX742 EV Kit Schematic



