

### GENERAL DESCRIPTION

The EV1542DK-SEPIC-00A is the demo board for sepic applications using the MP1542, a current mode step up converter with a 2A, 0.18Ω internal switch to provide a highly efficient regulator with fast response. The EV1542DK-SEPIC-00A can be operated at 700KHz or 1.3MHz allowing for easy filtering and low noise. An external compensation pin gives the user flexibility in setting loop dynamics, which allows the use of small, low ESR ceramic output capacitors. The soft-start results in small inrush current and can be programmed with an external capacitor. The EV1542DK-SEPIC-00A can operate from a single Li-Ion battery to generate 3.3V at up to 500mA.

Other features include under voltage lockout, current limiting and thermal overload protection, all available in a low profile 8-pin MSOP package.

### ELECTRICAL SPECIFICATIONS

Parameter	Symbol	Value	Units
Input Voltage	V <sub>IN</sub>	3 – 4.2	V
Output Voltage	V <sub>OUT</sub>	3.3	V
Output Current	I <sub>OUT</sub>	500	mA

### FEATURES

- Automatic Up-Down Conversion
- Operates from a Single Li-Ion Battery to Generate 3.3V at up to 500mA
- Uses Tiny Capacitors and Inductors
- Pin Selectable 700KHz or 1.3MHz Fixed Switching Frequency
- Programmable Soft-Start
- UVLO, 2A Switch, Thermal Shutdown
- Internal Current Limit

### APPLICATIONS

- LCD Displays
- Portable Applications
- Handheld Computers and PDAs
- Digital Still and Video Cameras

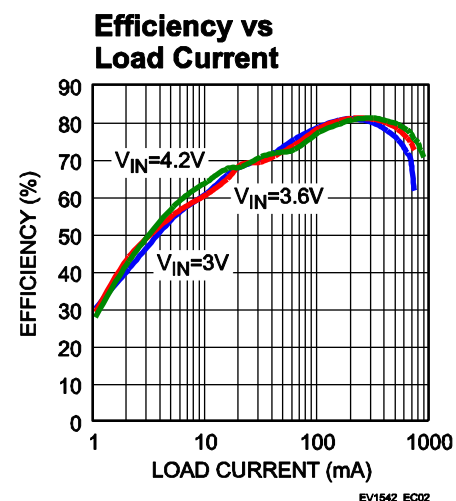
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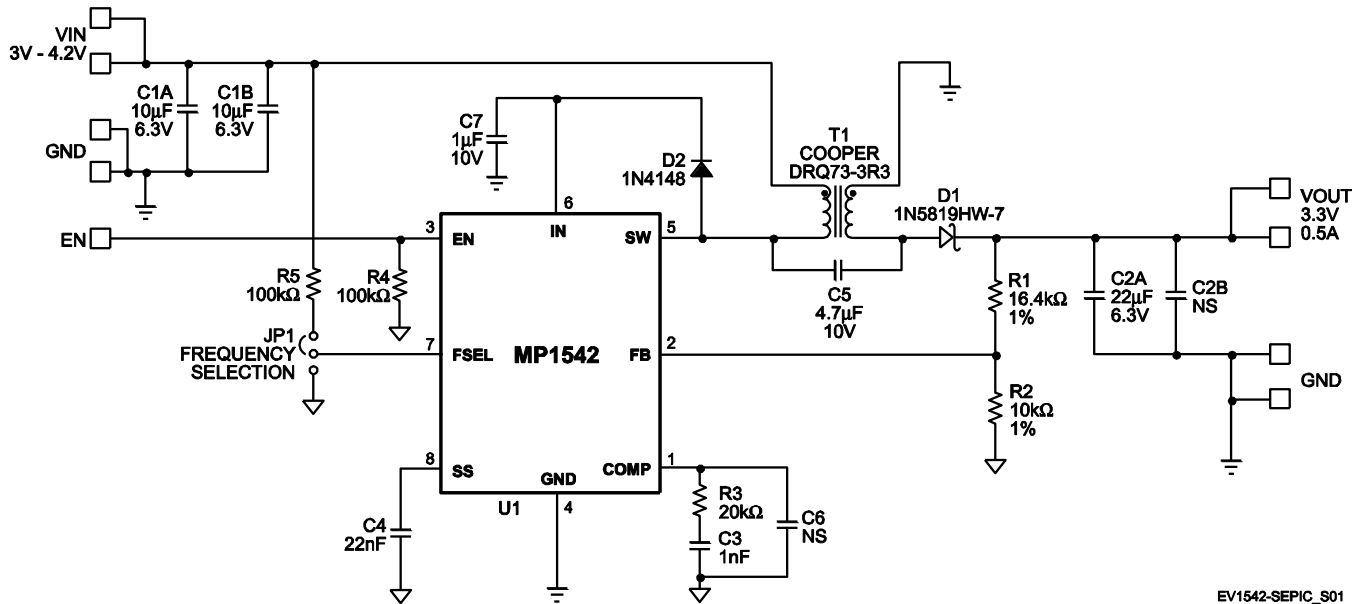
## EV1542DK-SEPIC-00A EVALUATION BOARD



Dimensions (2.0"X x 2.0"Y x 0.0"Z)

Board Number	MPS IC Number
EV1542DK-SEPIC-00A	MP1542DK



**EVALUATION BOARD SCHEMATIC**


EV1542-SEPIC\_S01

**EV1542DK-SEPIC-00A BILL OF MATERIALS**

Qty	Ref	Value	Description	Package	Manufacturer	Manufacturer P/N
2	C1A, C1B	10µF	Ceramic Cap, 6.3V, X5R	1210	TDK	C3225X5R1A106K
1	C2A	22µF	Ceramic Cap, 6.3V, X5R	1210	TDK	C3225X5R0J226M
1	C3	1nF	Ceramic Cap, 50V, X7R	0805	TDK	C2012X7R1H102K
1	C4	22nF	Ceramic Cap, 100V, X7R	0805	TDK	C2012X7R2A223M
1	C5	4.7µF	Ceramic Cap, 10V, Y5V	0805	TDK	C2012Y5V1A475Z
2	C6, C2B	NS	Not Stuffed			
1	C7	1µF	Ceramic Cap, 10V, X5R	0805	TDK	C2012X5R1A105K
1	D1		Schottky Diode, 40V, 1A	SOD-123	Diodes Inc	1N5819HW-7
1	D2		Rectifier Diode, 75V, 200mW	SOD-323	Diodes Inc	1N4148WS-7
1	JP1		3-Pin Connector Header, 0.100		Sullins	PTC03SAAN
1	L1	3.3µH	Transformer, 1.66A		Cooper	DRQ73-3R3
1	R1	16.4kΩ	Metal Film Resistor, 1%	0805	Panasonic	ERJ-6ENF1642V
1	R2	10kΩ	Metal Film Resistor, 1%	0805	Panasonic	ERJ-6ENF1002V
1	R3	20kΩ	Metal Film Resistor, 5%	0805	Panasonic	ERJ-6GEYJ203V
2	R4, R5	100kΩ	Metal Film Resistor, 5%	0805	Panasonic	ERJ-6GEYJ104V
1	U1		DC-DC Converter	MSOP8	MPS	MP1542DK

### PRINTED CIRCUIT BOARD LAYOUT

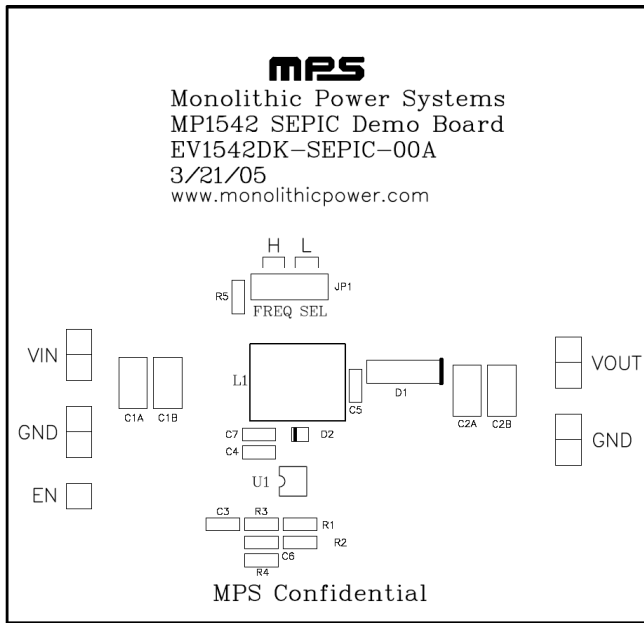


Figure 1—Top Silk Layer

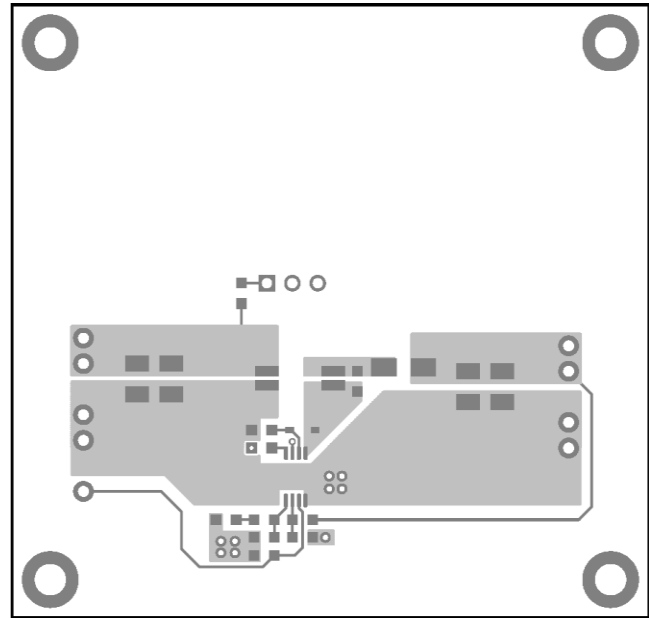


Figure 2—Top Layer

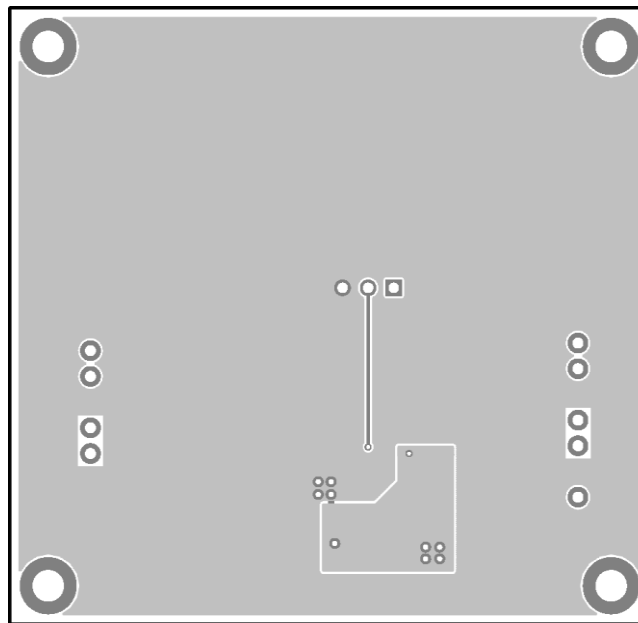


Figure 3—Bottom Layer