



RE46C117

DC to DC Converter and Piezoelectric Horn Driver

Product Specification

General Description

The RE46C117 is intended for use in 3V or 4.5V battery or battery-backed applications. The circuit features a DC-to-DC up-converter and driver circuit suitable for driving a piezoelectric horn

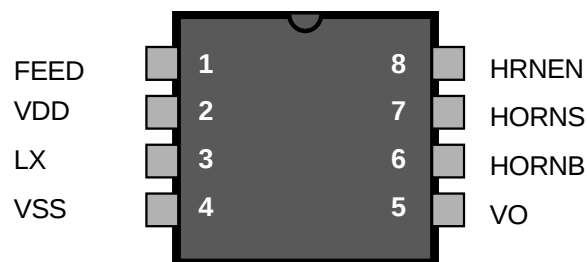
Applications

Smoke detectors
CO Detectors
Personal Security Products
Electronic Toys

Features

- Low Quiescent Current
- 10V Up Converter
- Low Horn Driver Ron
- Available in Standard Packaging or RoHS Compliant Pb Free Packaging

Pin Configuration



ABSOLUTE MAXIMUM RATINGS

PARAMETER

Supply Voltage

Input Voltage Range Except FEED

FEED Input Voltage Range

Input Current except FEED

Operating Temperature

Storage Temperature

Continuous Operating Current

(HornS, HornB, VO)

SYMBOL

V_{DD}

V_{OUT}

V_{in}

V_{infd}

I_{in}

T_A

T_{STG}

I_O

VALUE

5

12

-.3 to $V_{dd} + .3$

-10 to +22

10

0 to 50

-55 to 125

40

UNITS

V

V

V

V

mA

°C

°C

mA

Stresses beyond those listed under Absolute Maximum Ratings may cause permanent damage to the device. These are stress ratings only and operation at these conditions for extended periods may affect device reliability.

This product utilizes CMOS technology with static protection; however proper ESD prevention procedures should be used when handling this product. Damage can occur when exposed to extremely high static electrical charge

RE46C117

DC to DC Converter and Piezoelectric Horn Driver
Product Specification



R&E International
A Subsidiary of Microchip Technology Inc.

Electrical Characteristics

Limits apply at Vdd=3V, Vss=0V, Cvo=10uF, TA=0°C to 50°C, unless otherwise noted.
Typical values are at TA=27°C.

Parameter	Symbol	Test Conditions	Limits			Units
			Min	Typ	Max	
Supply Voltage	Vdd	Operating	2.0	—	5.0	V
Standby Supply Current	Iddstby	HRNEN low; No loads; DC-DC Running	—	14	—	uA
Quiescent Supply Current	Iddq	HRNEN low; No loads; VO=5V; Vlx=0.5V	—	7	10.5	uA
Quiescent Ivo	Ivoq	Same conditions as above for Iddq	—	4	7.5	uA
Input Leakage	Iin	HRNEN Input, Vin=VDD or VSS	-100	—	100	nA
	Iihf	FEED=+22V; VO=10V	—	20	50	uA
	Iilf	FEED=-10V; VO=10V	-50	-15	—	uA
Input Voltage Low	Vil	HRNEN Input	—	—	1	V
Input Voltage High	Vih	HRNEN Input	2.3	—	—	V
Output Low Voltage	Vol1	HORNB or HORNS; Iout=16mA; Vdd=3V	—	.3	.5	V
Output High Voltage	Voh1	HORNB or HORNS; VO=10V; Iout=-16mA; Vdd=HRNEN=3V	9.5	9.7	—	V
VO Output Voltage	Vvo1	Vdd=3V; HRNEN=3V; Iout=10mA	8.5	10	11	V
	Vvo2	Vdd=3V; HRNEN=0V; Iout=10mA	3.5	4	4.4	V
VO Efficiency	Voeff1	Iload= 10mA, Vdd=3V; HRNEN=0V	—	85	—	%
	Voeff2	Iload=100uA; Vdd=3V; HRNEN=0V	—	75	—	%
Brownout Threshold	Vobvt	Falling edge of VO	3.2	3.6	4.0	V

Notes on Electrical Characteristics:

1. DC-DC converter in high boost mode (normal VO=10V) can draw current pulses of greater than 1 Amp and is therefore very sensitive to series resistance. Critical components of this resistance are the inductor DC resistance, the internal resistance of the battery and the resistance in the connections from the inductor to the battery, from the inductor to the LX pin and from the Vss2 pin to the battery. In order to function properly under full load at Vdd=2V, the total of the inductor and the interconnect resistances should not exceed 0.3 ohm. The internal battery resistance should be no more than 0.5 ohm and a low ESR capacitor of 10uF or more should be connected in parallel with the battery to average current over the boost converter cycle.
2. In the Electrical Characteristics Table, wherever a specific VO value is listed under test conditions, the VO is forced externally with the inductor disconnected and the DC-DC converter is not running.
3. The brown-out threshold voltage is the VO voltage at which the horn will be disabled.
4. The limits shown are 100% tested at 25C only. Test limits are guard-banded based on temperature characterization to guarantee compliance at temperature extremes.

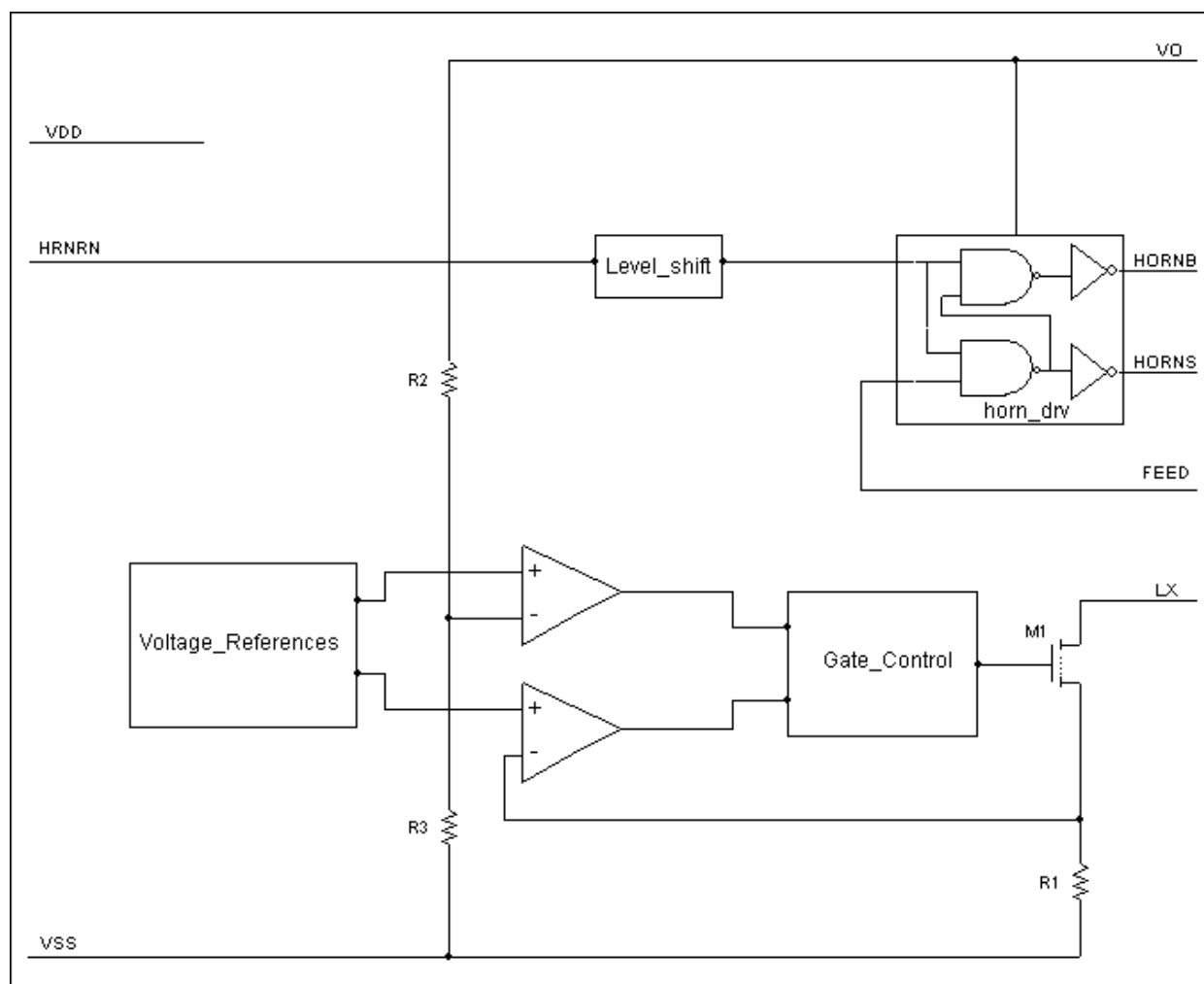
RE46C117

DC to DC Converter and Piezoelectric Horn Driver
Product Specification



R&E International
A Subsidiary of Microchip Technology Inc.

Functional Block Diagram



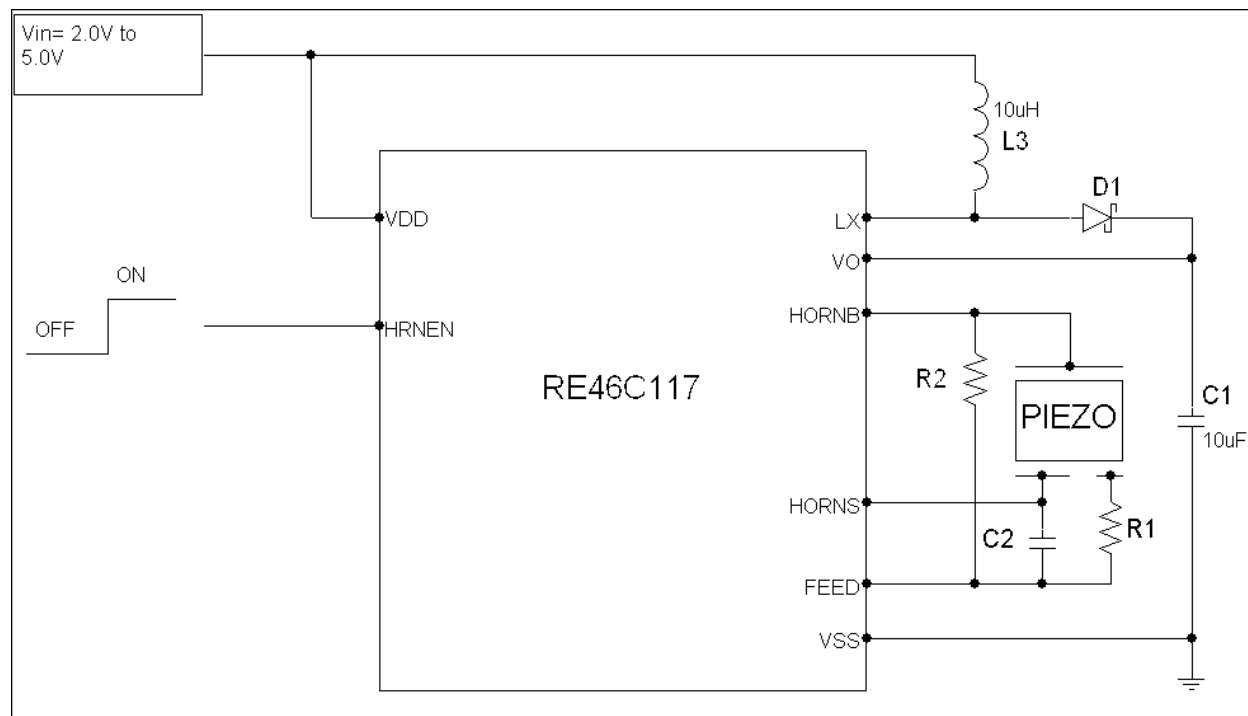
RE46C117

DC to DC Converter and Piezoelectric Horn Driver
Product Specification



R&E International
A Subsidiary of Microchip Technology Inc.

Typical Application Circuit



Notes:

1/ Schottky diode D1 must have maximum peak current rating of at least 1.5A and for best results should have forward voltage spec of less than 0.5V at 1 Amp.

2/ Inductor L3 must have maximum peak current rating of at least 1.5A and for best results should have DC resistance of less than 0.5 ohm.

RE46C117

DC to DC Converter and Piezoelectric Horn Driver
Product Specification



R&E International
A Subsidiary of Microchip Technology Inc.

Notes

RE46C117

DC to DC Converter and Piezoelectric Horn Driver Product Specification



R&E International

A Subsidiary of Microchip Technology Inc.

Information contained in this publication regarding device applications and the like is provided only for your convenience and may be superseded by updates. It is your responsibility to ensure that your application meets with your specifications. MICROCHIP MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND WHETHER EXPRESS OR IMPLIED, WRITTEN OR ORAL, STATUTORY OR OTHERWISE, RELATED TO THE INFORMATION, INCLUDING BUT NOT LIMITED TO ITS CONDITION, QUALITY, PERFORMANCE, MERCHANTABILITY OR FITNESS FOR PURPOSE. Microchip disclaims all liability arising from this information and its use. Use of Microchip devices in life support and/or safety applications is entirely at the buyer's risk, and the buyer agrees to defend, indemnify and hold harmless Microchip from any and all damages, claims, suits, or expenses resulting from such use. No licenses are conveyed, implicitly or otherwise, under any Microchip intellectual property rights.

Trademarks

The Microchip name and logo, the Microchip logo, Accuron, dsPIC, KEELOQ, KEELOQ logo, MPLAB, PIC, PICmicro, PICSTART, rfPIC, SmartShunt and UNI/O are registered trademarks of Microchip Technology Incorporated in the U.S.A. and other countries.

FilterLab, Hampshire, Linear Active Thermistor, MXDEV, MXLAB, SEEVAL, SmartSensor and The Embedded Control Solutions Company are registered trademarks of Microchip Technology Incorporated in the U.S.A.

Analog-for-the-Digital Age, Application Maestro, CodeGuard, dsPICDEM, dsPICDEM.net, dsPICworks, dsSPEAK, ECAN, ECONOMONITOR, FanSense, In-Circuit Serial Programming, ICSP, ICEPIC, Mindi, MiWi, MPASM, MPLAB Certified logo, MPLIB, MPLINK, mTouch, nanoWatt XLP, PICkit, PICDEM, PICDEM.net, PICTail, PIC³² logo, PowerCal, PowerInfo, PowerMate, PowerTool, REAL ICE, rfLAB, Select Mode, Total Endurance, TSHARC, WiperLock and ZENA are trademarks of Microchip Technology Incorporated in the U.S.A. and other countries.

SQTP is a service mark of Microchip Technology Incorporated in the U.S.A.

All other trademarks mentioned herein are property of their respective companies.

© 2009, Microchip Technology Incorporated, Printed in the U.S.A., All Rights Reserved.

 Printed on recycled paper.

QUALITY MANAGEMENT SYSTEM

CERTIFIED BY DNV

== ISO/TS 16949:2002 ==

Microchip received ISO/TS-16949:2002 certification for its worldwide headquarters, design and wafer fabrication facilities in Chandler and Tempe, Arizona; Gresham, Oregon and design centers in California and India. The Company's quality system processes and procedures are for its PIC® MCUs and dsPIC® DSCs, KEELOQ® code hopping devices, Serial EEPROMs, microperipherals, nonvolatile memory and analog products. In addition, Microchip's quality system for the design and manufacture of development systems is ISO 9001:2000 certified.

Данный компонент на территории Российской Федерации

Вы можете приобрести в компании MosChip.

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: info@moschip.ru

Skype отдела продаж:

moschip.ru

moschip.ru_4

moschip.ru_6

moschip.ru_9