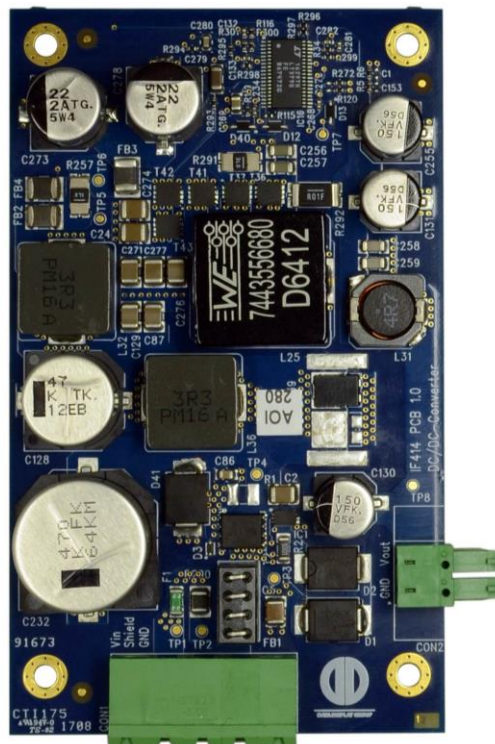


# Datasheet

## Wide-Range-DC-DC-Converter IF414 Wide-Range DC/DC regulator

ZU-02-414



Version 1.0

**09.05.2017**

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## 1 Revision History

Date	Rev. No.	Description	Page
09.05.2017	1.0	Initial version	All



## 2 Overview

The high efficiency, wide Range DC-DC converter provides a constant output voltage from a wide voltage range input and is designed to operate reliably in harsh usage environments, such as automotive applications. This wide-range DC converter operates with a wide input voltage range and is able to handle input voltage drops (e.g. bus, train, truck).

## 3 Features

- Wide range Power input ( $V_{IN}$ ) = +8V...+36V
- Output Voltage ( $V_{OUT}$ ) = 12V
- Up to 5A output current
- Wide Top
- Transient Over Voltage Protection
- Reverse Input Voltage Protection
- Input EMI-Filter
- Output Short Circuit Protection
- Low-Voltage Drop Protection

## 4 Electrical Characteristics

All measurements done at 25°C ambient temperature.

Item	Condition	MIN.	TYP.	MAX.	Unit	Note
Supply input Voltage ( $V_{IN}$ )		+8	+28	+36	VDC	1
Output Voltage ( $V_{OUT}$ )		+11.5	+12	+12.2	VDC	
Output Current		0	-	5	A	1
Current Consumption (28V)	Board Only	46	51	56	mA	-

**Note (1):** Please see Chapter 6 "Thermal Derating Characteristics"

## 5 Absolute Maximum Ratings

Item	Symbol	Min.	Max.	Unit	Note
Supply Voltage	$V_{IN}$	0	+38	VDC	1, 2, 3,4
Storage Temperature	$T_{ST}$	-30	+85	°C	
Operating Temperature	$T_{OP}$	-20	+80	°C	

**Note (1):** Within operating temperature range.

**Note (2):** Permanent damage to the device may occur if maximum values are exceeded.

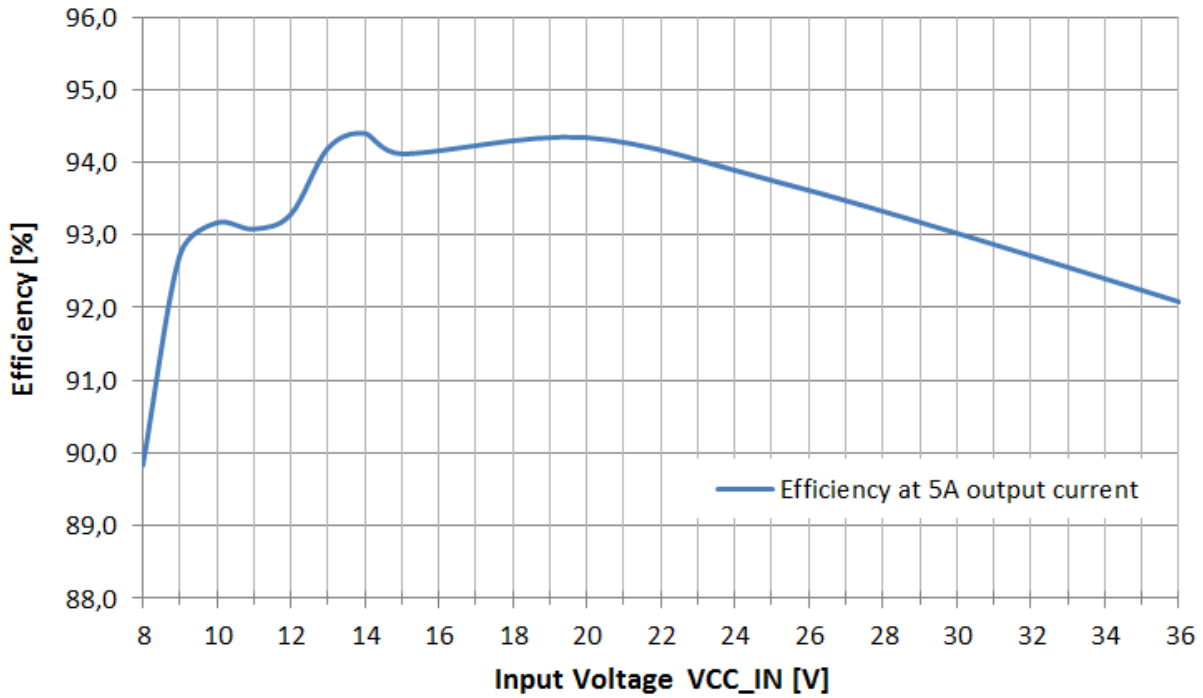
**Note (3):** The DC-DC Converter is resistant to instantaneous peaks (10/1000us wave form) up to 58V.

**Note (4):** Reverse Input Voltage Protection to -36V.

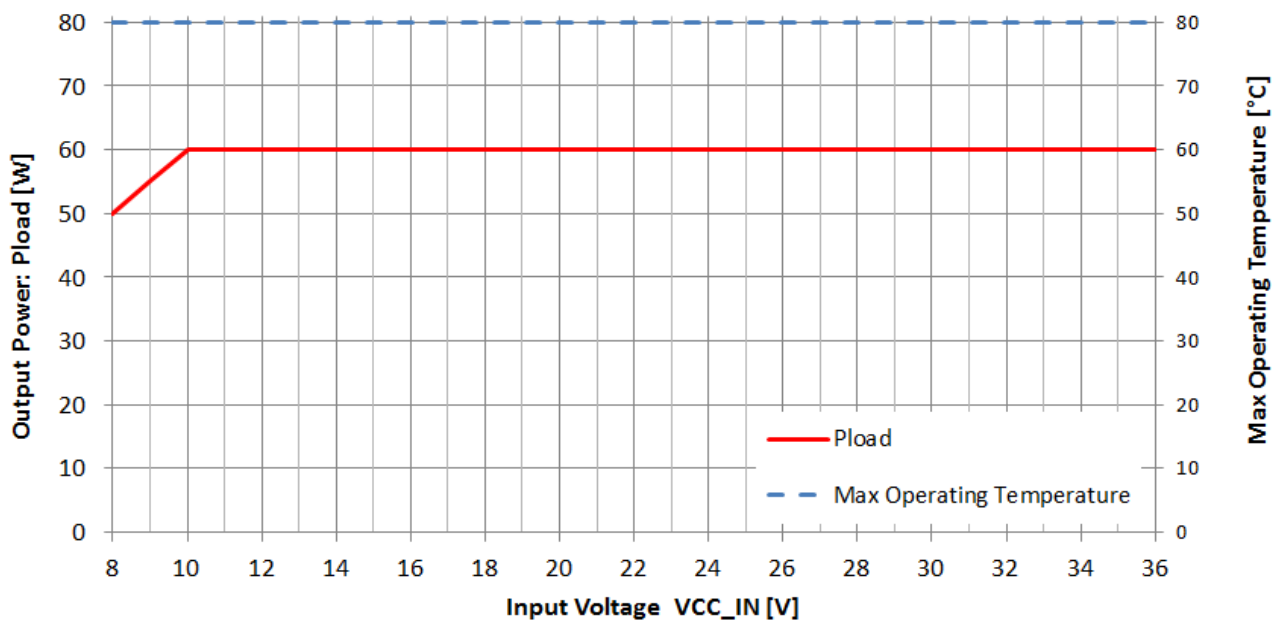


## 6 Efficiency, Power and Thermal Derating Characteristics

### Efficiency Characteristics

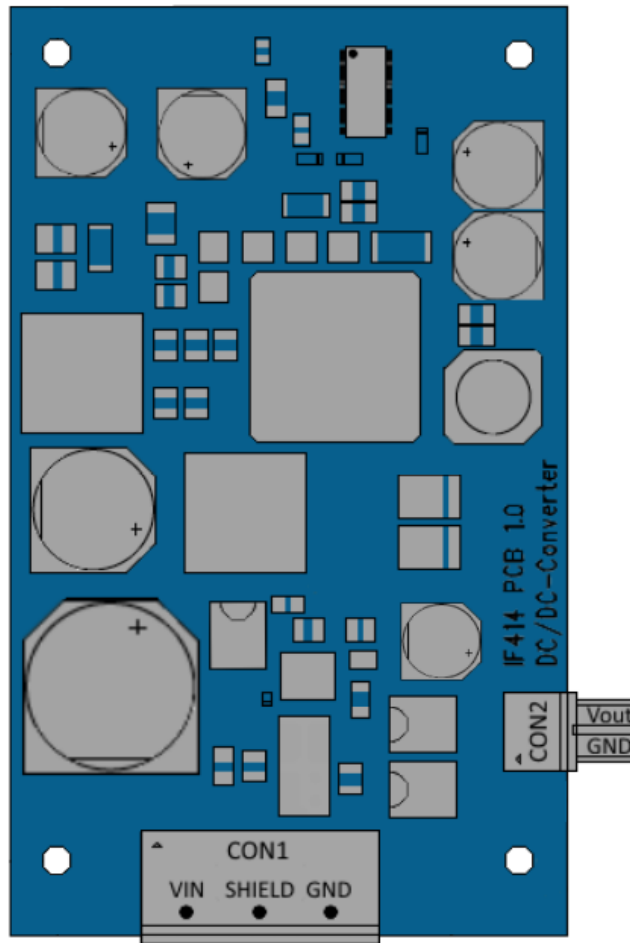


### Power and Thermal Derating Characteristics





## 7 Connector Overview



Connector	DESCRIPTION	TYPE	Matching Part	MANUFACTURER
CON 1	Power Supply Input	MSTB 2,5/ 3-GF-5,08 (1776511)	MVSTBW 2,5/ 3-STF-5,08 (1834916)	Phoenix Contact
CON 2	Power Supply Output	WE 691 309 310 002	Cable to Board: WE 691 348 300 002  Board to Board WE 691 322 310 002	Würth

### 7.1 CON1: Power Supply Connector

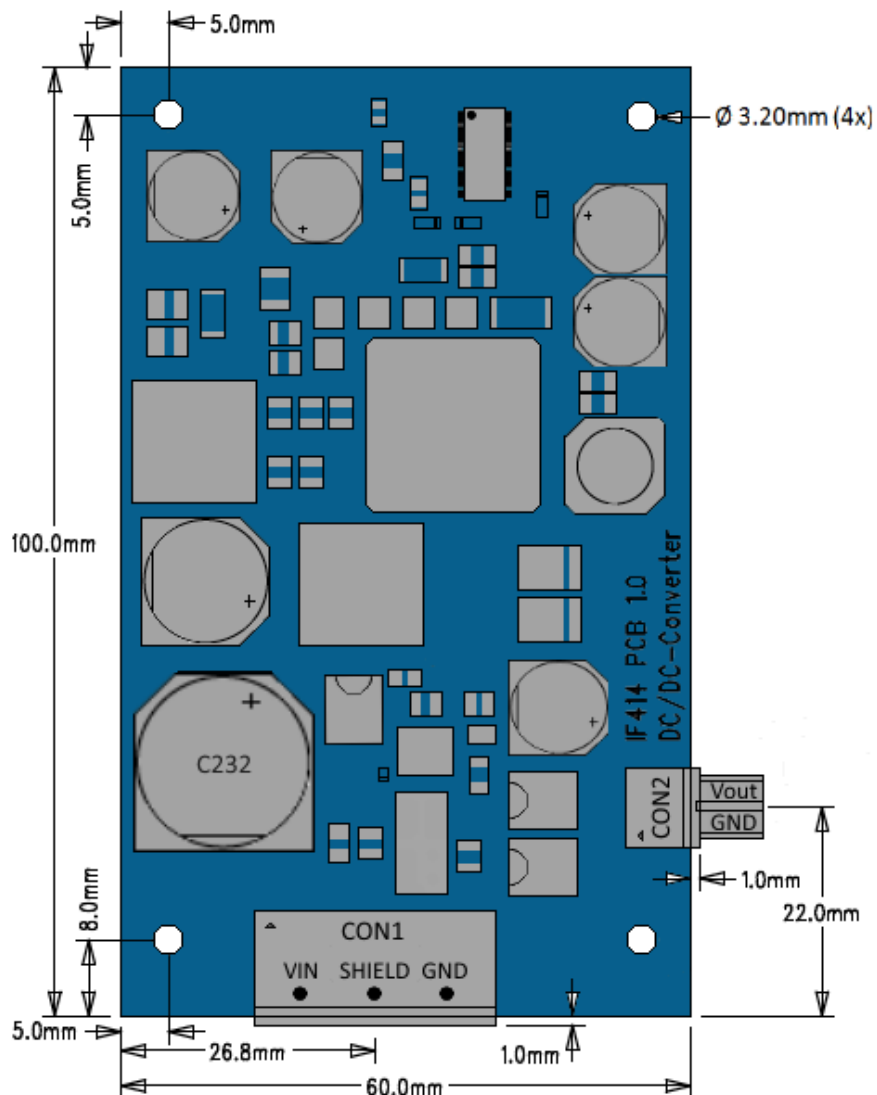
CON1: Power Supply Connector		
Pin	Signal	Description
1	VIN	Main Power Input
2	SHIELD	Cable Shield has a low-resistance to Ground
3	GND	Ground



## 7.2 CON2: Board-to-Board or Wire-to-Board Connector

CON2: Board-to-Board or Wire to Board Connector		
Pin	Signal	Description
1	GND	Ground
2	VOUT	Power Supply Output

## 8 Mechanical Dimensions





Item		Description	Remarks
Length		60 mm	$\pm 0.2$ mm
Width		100 mm	$\pm 0.2$ mm
Height (top side)	CON1	8.6 mm	+ 0.3 mm
	CON2	6.8 mm	$\pm 0.3$ mm
Max Height (top side)	C232	17mm	+ 0.2 mm
Height (PCB)		1.6 mm	$\pm 0.2$ mm
Height (bottom side)		0 mm	No components on bottom side, to be mounted on flat surface
Weight		80g	

## 9 Reference KIT

TBD

## 10 Ordering Information

Part Number	Description
ZU-02-414	IF414-00 Wide-Range-DC-DC-Converter



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