

# DELPHI SERIES



## FEATURES

- ◆ Fully integrated point-of-load DC/DC converter for low component count solutions
- ◆ Small footprint and low profile : 15mm x 15mm x 3.5mm (SMD)
- ◆ Input voltage range from 4.5V~ 5.5V and 7V ~ 13.2V.
- ◆ 10A DC output current
- ◆ Output adjustable 0.8V to 3.3V
- ◆ Monotonic startup into normal and pre-biased loads
- ◆ Fast transient response
- ◆ Enable function
- ◆ Moisture sensitivity level (MSL) 3
- ◆ Lead free and RoHS compliant package
- ◆ Lead free reflow process compatible

## Integrated, Non-Isolated, Point of Load, DC/DC Power Modules: 4.5~5.5Vin and 7~13.2Vin, 0.8-2.5V/ 10Aout

The MCM12S10Q, 4.5~5.5V and 7V~13.2V input, single output, fully integrated non-isolated point of load DC/DC converters are the latest offering from a world leader in power systems technology and manufacturing – Delta Electronics, Inc. This product family provides up to 10A of output current or 33W of output power in an industry standard, compact, IC-like, molded package. It is highly integrated and requires few external components to provide the point-of-load function. Copper pads on the back of the module in close contact with the internal heat dissipation components provide excellent thermal performance. These converters hence possess outstanding electrical and thermal performance, as well as extremely high reliability under highly stressful operating conditions. Operating over both the input voltage ranges 4.5V to 5.5V and 7V to 13.2V, the MCM12S10Q supports an output voltage range from 0.8V to 3.3V, set by a single resistor. The MCM12S10Q is packaged in a thermally enhanced, compact (15mm x 15mm), and low profile (3.5mm) over-molded package suitable for automated assembly by standard surface mount equipment. The MCM12S10Q is lead free and RoHS compliant.

## APPLICATIONS

- ◆ UMPC
- ◆ Server
- ◆ Industrial PC and Equipment
- ◆ Point of Load Regulation
- ◆ General Purpose Step Down DC/DC

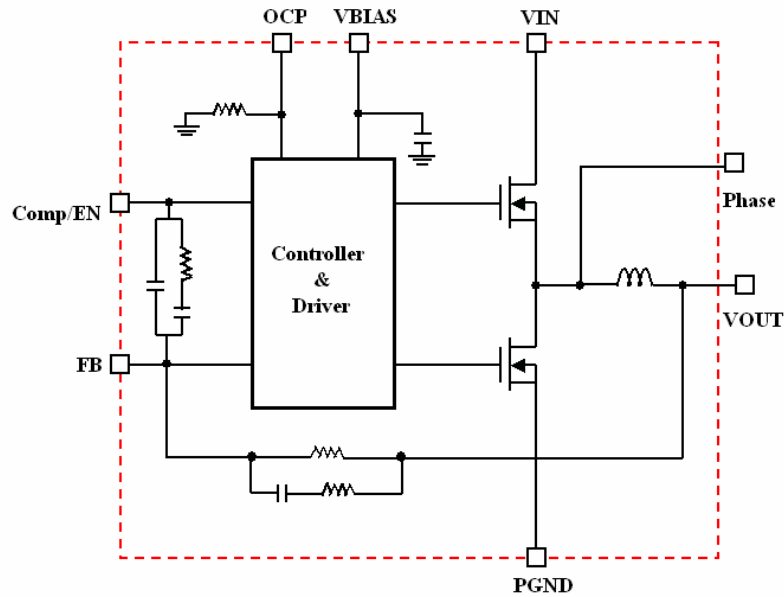
## SPECIFICATIONS

| GENERAL SPECIFICATIONS |         |                           | OUTPUT SPECIFICATIONS |         |              |
|------------------------|---------|---------------------------|-----------------------|---------|--------------|
| Input Voltage          | Typical | 4.5~5.5V and 7V ~ 13.2Vdc | Voltage Accuracy      | Typical | 2%           |
| Switching Frequency    | Typical | 300KHz                    | Voltage Adjustment    | Typical | 0.8V ~ 2.5 V |
| Turn-on time           | Typical | 20 mS                     | Line Regulation       | Typical | 0.2%         |
| Operating Temperature  |         | -40°C ~ 125°C             | Load Regulation       | Typical | 0.2%         |
| Size                   | 10A     | 15mm x 15mm x 3.5mm       | Ripple & Noise        | Typical | 40 mV (10A)  |

## MODEL LIST

| Model Name  | Packaging | Input Voltage               | Output Voltage | Output Current | Efficiency<br>12Vin, 2.5Vo, full load |
|-------------|-----------|-----------------------------|----------------|----------------|---------------------------------------|
| MCM12S10Q A | SMD       | 4.5~5.5V and<br>7 ~ 13.2Vdc | 0.8V ~ 2.5Vdc  | 10A            | 88.5%                                 |

## SIMPLIFIED BLOCK DIAGRAM

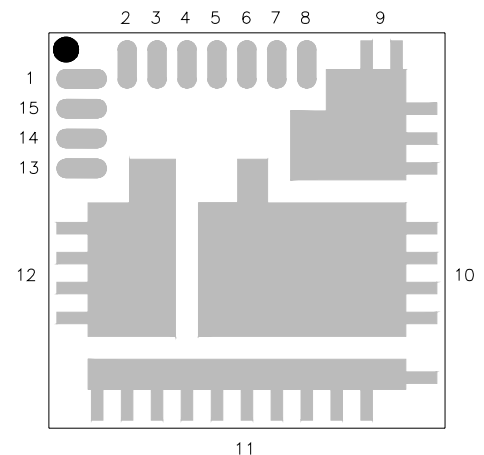


## PACKAGE INFORMATION

Table 1. Pin Description

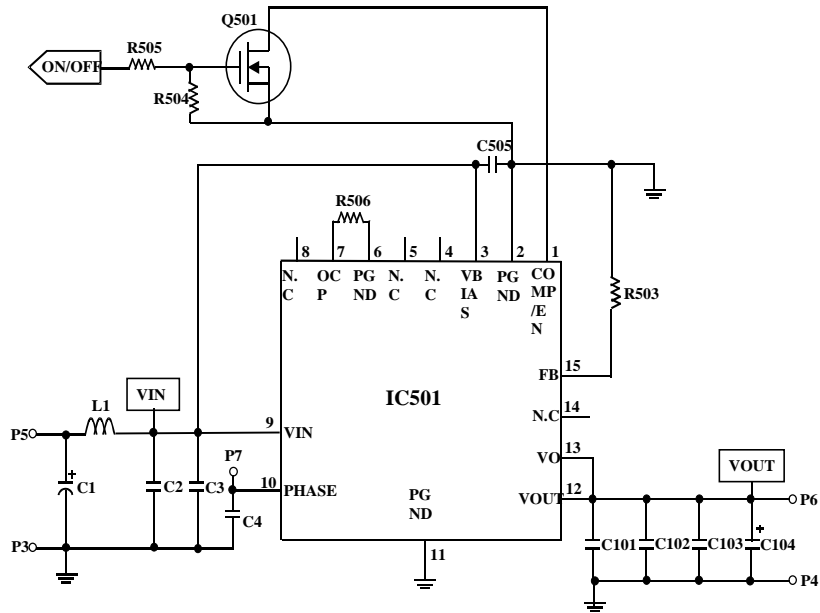
| Pin | Symbol  | Description    |
|-----|---------|----------------|
| 1   | Comp/EN | Module enable  |
| 2   | PGND    | Power Ground   |
| 3   | VBIAS   | Bias Supply    |
| 4   | N.C     |                |
| 5   | N.C     |                |
| 6   | PGND    | Power Ground   |
| 7   | OCP     | OCP Set Point  |
| 8   | N.C     |                |
| 9   | VIN     | Power Input    |
| 10  | PHASE   | Phase Node     |
| 11  | PGND    | Power Ground   |
| 12  | Vo      | Output Voltage |
| 13  | Vo      | Output Voltage |
| 14  | N.C     |                |
| 15  | FB      | Feedback Input |

## BOTTOM VIEW

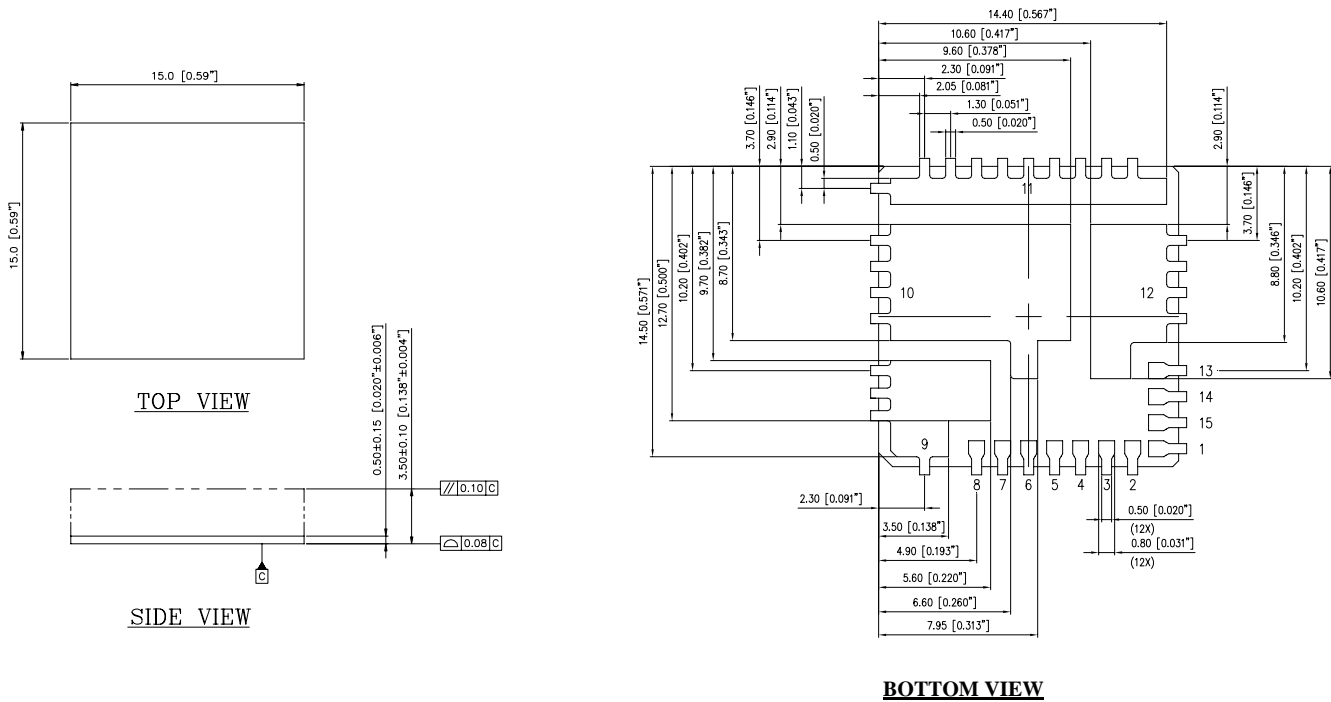


MCM12S10Q  
(15mm x 15mm x 3.5mm)

# REFERENCE CIRCUITRY FOR GENERAL APPLICATION



## MECHANICAL DRAWING



**CONTACT:** [www.delta.com.tw/dcdc](http://www.delta.com.tw/dcdc)

### USA:

Telephone:  
 East Coast: (888) 335 8201  
 West Coast: (888) 335 8208  
 Fax: (978) 656 3964  
 Email: [DCDC@delta-corp.com](mailto:DCDC@delta-corp.com)

### Europe:

Telephone: +41 31 998 53 11  
 Fax: +41 31 998 53 53  
 Email: [DCDC@delta-es.tw](mailto:DCDC@delta-es.tw)

### Asia & the rest of world:

Telephone: +886 3 4526107 x6220  
 Fax: +886 3 4513485  
 Email: [DCDC@delta.com.tw](mailto:DCDC@delta.com.tw)

## WARRANTY

Delta offers a two (2) year limited warranty. Complete warranty information is listed on our web site or is available upon request from Delta. Information furnished by Delta is believed to be accurate and reliable. However, no responsibility is assumed by Delta for its use, nor for any infringements of patents or other rights of third parties, which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of Delta. Delta reserves the right to revise these specifications at any time, without notice

## Free Manuals Download Website

<http://myh66.com>

<http://usermanuals.us>

<http://www.somanuals.com>

<http://www.4manuals.cc>

<http://www.manual-lib.com>

<http://www.404manual.com>

<http://www.luxmanual.com>

<http://aubethermostatmanual.com>

Golf course search by state

<http://golfingnear.com>

Email search by domain

<http://emailbydomain.com>

Auto manuals search

<http://auto.somanuals.com>

TV manuals search

<http://tv.somanuals.com>