



**PART NUMBER:** VCQ15

**DESCRIPTION:** dc-dc converter

**Features**

- 15W isolated output
- Efficiency to 82%
- 4:1 input range
- Six sided shield
- Remote On/Off Control



| MODEL          | Input Voltage | Output Voltage | Output Current | Input Current |           | Efficiency |
|----------------|---------------|----------------|----------------|---------------|-----------|------------|
|                |               |                |                | No Load       | Full Load |            |
| VCQ15-Q24-S5   | 9-36VDC       | 5VDC           | 3000mA         | 15mA          | 810mA     | 77%        |
| VCQ15-Q24-S12  | 9-36VDC       | 12VDC          | 1250mA         | 15mA          | 780mA     | 80%        |
| VCQ15-Q24-S15  | 9-36VDC       | 15VDC          | 1000mA         | 15mA          | 780mA     | 80%        |
| VCQ15-Q24-D5   | 9-36VDC       | ±5VDC          | ±1500mA        | 20mA          | 810mA     | 77%        |
| VCQ15-Q24-D12  | 9-36VDC       | ±12VDC         | ±625mA         | 20mA          | 780mA     | 80%        |
| VCQ15-Q24-D15  | 9-36VDC       | ±15VDC         | ±500mA         | 20mA          | 780mA     | 80%        |
| VCQ15-Q24-T512 | 9-36VDC       | 5/±12VDC       | 1500/±310mA    | 20mA          | 780mA     | 80%        |
| VCQ15-Q24-T515 | 9-36VDC       | 5/±15VDC       | 1500/±250mA    | 20mA          | 780mA     | 80%        |
| VCQ15-Q24-S3R3 | 9-36VDC       | 3.3VDC         | 3000mA         | 15mA          | 545mA     | 76%        |
| VCQ15-Q48-S5   | 18-72VDC      | 5VDC           | 3000mA         | 10mA          | 410mA     | 77%        |
| VCQ15-Q48-S12  | 18-72VDC      | 12VDC          | 1250mA         | 10mA          | 390mA     | 80%        |
| VCQ15-Q48-S15  | 18-72VDC      | 15VDC          | 1000mA         | 10mA          | 390mA     | 80%        |
| VCQ15-Q48-D5   | 18-72VDC      | ±5VDC          | ±1500mA        | 15mA          | 400mA     | 79%        |
| VCQ15-Q48-D12  | 18-72VDC      | ±12VDC         | ±625mA         | 15mA          | 380mA     | 82%        |
| VCQ15-Q48-D15  | 18-72VDC      | ±15VDC         | ±500mA         | 15mA          | 380mA     | 82%        |
| VCQ15-Q48-T512 | 18-72VDC      | 5/±12VDC       | 1500/±310mA    | 15mA          | 380mA     | 82%        |
| VCQ15-Q48-T515 | 18-72VDC      | 5/±15VDC       | 1500/±250mA    | 15mA          | 380mA     | 82%        |
| VCQ15-Q48-S3R3 | 18-72VDC      | 3.3VDC         | 3000mA         | 10mA          | 270mA     | 76%        |



**PART NUMBER:** VCQ15

**DESCRIPTION:** dc-dc converter

## INPUT

|                     |                           |
|---------------------|---------------------------|
| Input Voltage Range | 24V: 9-36V<br>48V: 18-72V |
| Input Filter        | Pi Type                   |

## OUTPUT

|                              |                              |                |
|------------------------------|------------------------------|----------------|
| Voltage Accuracy             | Single Output                | ±1.0% max.     |
|                              | Dual +Output                 | ±1.0% max.     |
|                              | -Output                      | ±3.0% max.     |
|                              | Triple, 5V                   | ±2.0% max.     |
|                              | 12V/15V                      | ±3.0% max.     |
| Voltage Balance (Dual)       |                              | ±1.0%max       |
| Transient Response:          | Single, 25% Step Load Change | <500μ sec.     |
|                              | Dual, FL-1/2±1% Error Band   | <500μ sec.     |
| External Trim Adj. Range     |                              | ±10%           |
| Ripple & Noise               | 20MHz BW                     | 10mV RMS., max |
|                              |                              | 75mV p-p, max  |
| Short Circuit Protection     |                              | Continuous     |
| Line Regulation <sup>1</sup> | Single/Dual                  | ±0.2% max.     |
|                              | Triple                       | ±1.0% max.     |
| Load Regulation <sup>2</sup> | Single/Dual                  | ±1.0% max.     |
|                              | Triple                       | ±5.0% max.     |

## SAFETY & EMI

|                      |                             |
|----------------------|-----------------------------|
| Isolation Voltage    | 500VDC min.                 |
| Isolation Resistance | 10 <sup>9</sup> Ohm min.    |
| Case Grounding       | Connected to Output common  |
| UL/cUL               | UL60950-1                   |
| EMI/RFI              | Six Sided Continuous Shield |

## ENVIRONMENTAL

|                             |                     |
|-----------------------------|---------------------|
| Operating Temperature Range | -25°C to +71°C      |
| Case Temperature            | 100°C max.          |
| Cooling                     | Free-Air Convection |
| Storage Temperature         | -55°C to +105°C     |
| Temperature Coefficient     | ±0.02%/°C           |

## GENERAL SPECIFICATIONS

|                     |                                              |
|---------------------|----------------------------------------------|
| Efficiency          | see table                                    |
| Switching Frequency | 300KHz, Type                                 |
| Dimensions          | 2x2x0.4 inches<br>(50.8x50.8x10.2mm)         |
| Case Material       | Black coated copper with non-conductive base |

### NOTES:

1. Measured from High Line to Low Line
2. Measured from Full Load to 1/4 Load



**PART NUMBER:** VCQ15

**DESCRIPTION:** dc-dc converter

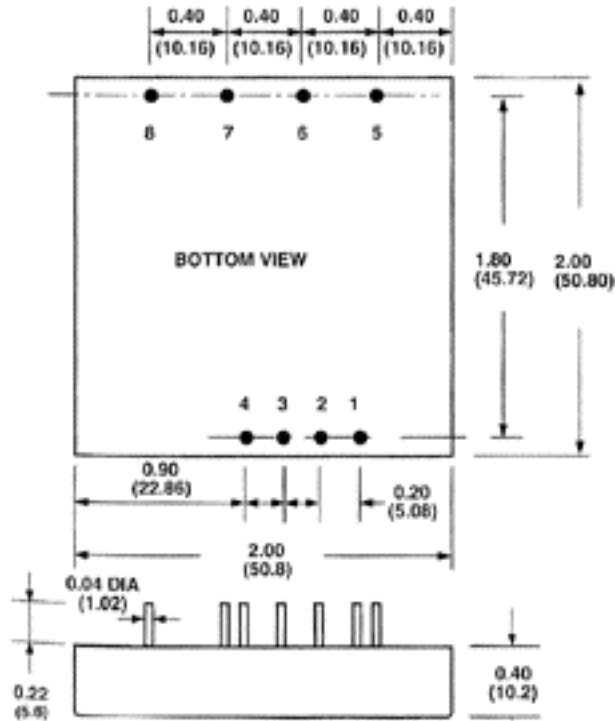
| TRIPLE OUTPUT LOADING TABLE (1) |            |         |      |
|---------------------------------|------------|---------|------|
| Output<br>(Pin No.)             | Voltage    | Amperes |      |
|                                 |            | Min.(2) | Nom. |
| 7                               | +5         | 0.25    | 1.5  |
| 8 & 5                           | +12 or -12 | 0.10    | 0.31 |
| 8 & 5                           | +15 or -15 | 0.10    | 0.25 |

**NOTE:**

1. Maximum total power from all outputs is limited to 15 watts but no output should be allowed to exceed its maximum current.
2. Minimum current on each output is required to maintain specified regulation.

## Dimensions (mm)

All Dimensions in inches (mm)  
Tolerance .xxx ±0.01, .xxx ±0.10

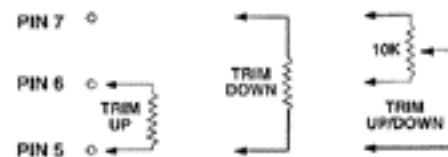


| PIN CONNECTION |                       |        |           |
|----------------|-----------------------|--------|-----------|
| Pin            | Single                | Dual   | Triple    |
| 1.             | Remote On/Off Control |        |           |
| 2.             | No Pin                | No Pin | No Pin    |
| 3.             | -Vin                  | -Vin   | -Vin      |
| 4.             | +Vin                  | +Vin   | +Vin      |
| 5.             | Trim                  | Trim   | -Aux. Out |
| 6.             | -Vout                 | -Vout  | Common    |
| 7.             | +Vout                 | Common | +5V out   |
| 8.             | No Pin                | +Vout  | +Aux. Out |

| Remote On/Off Control |                            |
|-----------------------|----------------------------|
| Logic Compatibility   | CMOS or Open Collector TTL |
| EC-On                 | >+5.5VDC or Open Circuit   |
| EC-Off                | <1.8 VDC                   |
| Shutdown Idle Current | 10 mA                      |
| Control Common        | Referenced to Input Minus  |

**External Output Trimming**

Output may optionally be externally trimmed ( $\pm 10\%$ ) with a fixed resistor or an external trimpot as shown.



## Derating Curve

