

PART NUMBER: VSCQ30 series

DESCRIPTION: DC/DC converter

features

- 20-30W isolated output
- high efficiency to 91%
- fixed 300KHz switching frequency
- 4:1 wide input range
- regulated outputs
- continuous short circuit protection
- six-sided metal case
- 2"x1.6" size
- industry standard pin-out



| model number | input voltage ¹ | output voltage | output current | | input current | | efficiency |
|-----------------|----------------------------|----------------|----------------|--------|---------------|-----------|------------|
| | | | min. | max. | no load | full load | |
| VSCQ30-Q24-S3R3 | 9-36VDC | 3.3VDC | 0mA | 7500mA | 50mA | 1185mA | 87% |
| VSCQ30-Q24-S5 | 9-36VDC | 5VDC | 0mA | 6000mA | 60mA | 1404mA | 89% |
| VSCQ30-Q24-S12 | 9-36VDC | 12VDC | 0mA | 2500mA | 80mA | 1374mA | 91% |
| VSCQ30-Q24-S15 | 9-36VDC | 15VDC | 0mA | 2000mA | 50mA | 1389mA | 90% |
| VSCQ30-Q48-S3R3 | 18-75VDC | 3.3VDC | 0mA | 7500mA | 30mA | 579mA | 89% |
| VSCQ30-Q48-S5 | 18-75VDC | 5VDC | 0mA | 6000mA | 30mA | 694mA | 90% |
| VSCQ30-Q48-S12 | 18-75VDC | 12VDC | 0mA | 2500mA | 40mA | 687mA | 91% |
| VSCQ30-Q48-S15 | 18-75VDC | 15VDC | 0mA | 2000mA | 50mA | 694mA | 90% |

NOTE:

1. nominal input voltage 24, 48 VDC

INPUT

| | | |
|--------------------------------------|--|--|
| input voltage range | 24V 48V | 9-36V 18-75V |
| under voltage lockout | 24Vin power up 24Vin power down 48Vin power up 48Vin power down | 8.8V typ. 8.0V typ. 17V typ. 16V typ. |
| input filter type | | PI type |
| positive logic remote on/off control | | see note 3&4 |

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OUTPUT

| | |
|---|---------------------------------|
| voltage accuracy | ±1.5% max. |
| transient response: 75%-100% step load change | |
| error band | ±5% Vout nominal |
| recovery time | <300µ sec. |
| external adjustment range, %Vo | ±10% |
| ripple & noise, 20MHz BW (measured with 0.1µF MLCC) | |
| 3.3V & 5V | 20mV RMS., max 75mV pk-pk, max. |
| 12V & 15V | 20 mV RMS, max. 100mV p-p, max |
| temperature coefficient | ±0.02%/°C |
| short circuit protection | continuous (hiccup mode) |
| line regulation ¹ | ±0.5% max |
| load regulation ² | ±0.5% max |
| over voltage protection (Zener or TVS clamp) | |
| 3.3V | 3.9V |
| 5V | 6.2V |
| 12V | 15V |
| 15V | 18V |
| current limit, % nominal output | 110% ~ 150% |

GENERAL SPECIFICATIONS

| | | |
|------------------------------|-------|--|
| efficiency | | see table |
| isolation voltage | | 1500VDC min. |
| isolation resistance | | 10 ⁸ ohms min |
| switching frequency | 24Vin | 300KHz, typ. |
| | 48Vin | 250KHz, typ. |
| operating temperature range | | -40°C to +85°C |
| derating, above 60°C | | linearly to zero power at +100°C |
| case temperature | | 100°C max. |
| cooling | | natural convection |
| storage temperature | | -55°C to +125°C |
| thermal shutdown, case temp. | | 110°C, typ. |
| dimensions | | 2.0x1.6x0.40 inches (50.8x40.6x10.2mm) |
| case material | | black coated copper with non-conductive base |

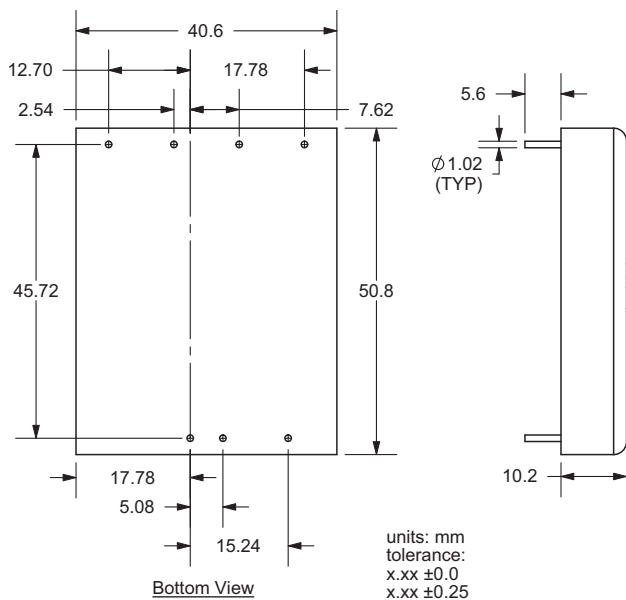
NOTES:

- measured from high line to low line
- measured from full load to 10% load
- remote on/off control:
 - logic compatibility CMOS or open collector TTL
 - EC-ON >+3.5VDC to 75Vdc or open circuit
 - EC-OFF <1.2VDC
- suffix "N" to the model number with negative logic remote on/off
 - EC-ON <1.2VDC
 - EC-OFF >+3.5VDC to 75Vdc or open circuit
- maximum case temperature under any operating condition should not exceed 100°C

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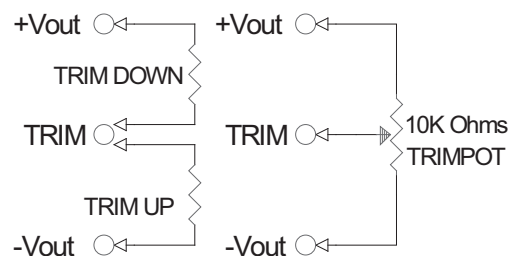
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DIMENSIONS-(mm)



| PIN CONNECTIONS | |
|-----------------|----------------|
| pin | function |
| 1 | on/off control |
| 3 | -Vin |
| 4 | +Vin |
| 5 | Trim |
| 6 | -Vout |
| 7 | +Vout |
| 8 | no pin |

EXTERNAL OUTPUT TRIM



DERATING CURVE

