



VQA50 Series 50 Watts

50W SINGLE OUTPUT

2:1 INPUT ¼ BRICK

ISOLATED & REGULATED

SIX SIDE SHIELD

HIGH EFFICIENCY

HIGH DENSITY

DIP PACKAGE STYLE

RoHS

- 2:1 Input Range
18~36VDC
48~72VDC

- Efficiency up to 87%
- Operating Temperature:
-40°C~+85°C
- 1500DC Isolation
- Over Voltage & Current Protection
- Short Circuit Protection
- Industry Standard Pin Configurations

Product Program

| Part Number | Input Voltage (VDC) | | Output Voltage / Current | | Efficiency (% , Typ) |
|-------------|---------------------|-------|--------------------------|-------------|----------------------|
| | Nominal | Range | Voltage (VDC) | Current (A) | |
| VQA50-24S33 | 24 | 18~36 | 3.3 | 10.00 | 83 |
| VQA50-24S05 | 24 | 18~36 | 5 | 10.00 | 86 |
| VQA50-24S12 | 24 | 18~36 | 12 | 4.17 | 87 |
| VQA50-24S15 | 24 | 18~36 | 15 | 3.33 | 87 |
| VQA50-24S24 | 24 | 18~36 | 24 | 2.08 | 87 |
| VQA50-24S28 | 24 | 18~36 | 28 | 1.78 | 86 |
| VQA50-48S33 | 48 | 36~72 | 3.3 | 10.00 | 83 |
| VQA50-48S05 | 48 | 36~72 | 5 | 10.00 | 86 |
| VQA50-48S12 | 48 | 36~72 | 12 | 4.17 | 87 |
| VQA50-48S15 | 48 | 36~72 | 15 | 3.33 | 87 |
| VQA50-48S24 | 48 | 36~72 | 24 | 2.08 | 87 |
| VQA50-48S28 | 48 | 36~72 | 28 | 1.78 | 86 |

ISOLATION SPECIFICATIONS

| Item | Min | Units |
|-----------------------|-----------------|-------|
| Isolation voltage | 1500 | VDC |
| Isolation resistance | 10 ⁹ | Ω |
| Isolation capacitance | 300 | pF |

COMMON SPECIFICATION

| | |
|---------------------|--|
| Efficiency | See product program table |
| Switching frequency | 300KHz |
| Meet standard | IEC60950-1, UL60950-1, EN60950-1 |
| Case material | Non-conductive plastic |
| Base material | Aluminum base plate |
| Potting material | Epoxy (UL94-V0) |
| Dimensions | 57.9 X 36.8 X 13.5 mm (2.28 X 1.45 X 0.53 Inch) |
| Weight | 60g (2.1oz) |
| MTBF | MIL – HDBK-217F2 5 x 10 ⁵ hrs |

OUTPUT SPECIFICATION

| | | |
|----------------------------------|---------------------------------|-----------------------------|
| Output power | | 50 Watts |
| Voltage accuracy | Full load and nominal Vin | ± 1% |
| Voltage adjustability | | 10% |
| Line regulation | LL to HL at Full Load | ± 0.2% |
| Load regulation | 10% to 100% FL | ± 0.5% |
| Cross regulation | Asymmetrical load 25% / 100% FL | ± 5% |
| Ripple and noise | 20MHz bandwidth | 1% |
| Temperature coefficient | | ±0.02% / °C, max |
| Transient response recovery time | 25% load step change | 400uS |
| Over current protection | | 120% |
| Output Voltage Adjustment | | 10% |
| Over load protection | % of FL at nominal input | 120%,max |
| Short circuit protection | | Hiccup, automatics recovery |

INPUT SPECIFICATION

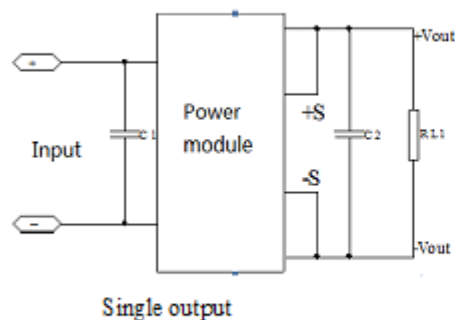
| | | | |
|---------------------|-----------------|------------|------------------------|
| Input voltage range | 2:1 | 24V 48V | 18~36 VDC 36~75 VDC |
| Startup time | Nominal Vin and | | 20mS typ |
| Remote control | On Off | | Open contact -Vin |

ENVIRONMENTAL SPECIFICATIONS

| | |
|-----------------------------|-------------------------------|
| Operating temperature range | -40°C ~ +85°C (With derating) |
| Maximum case temperature | +105°C |
| Storage temperature range | -40°C ~ +105°C |
| Vibration | 10~55Hz, 5G, |
| Relative humidity | 5% ~ 90% RH |

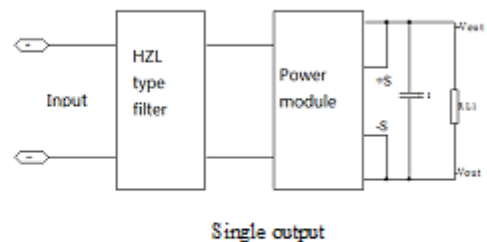
RECOMMENDED CIRCUIT

A. Basic Connection



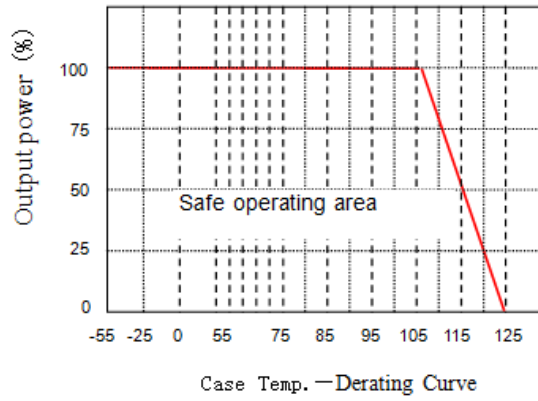
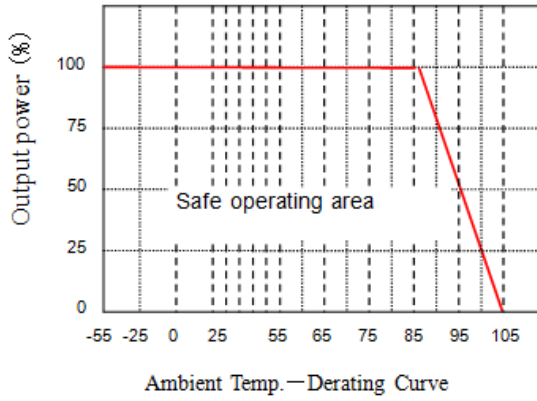
Note: C1, C2, C3 use high frequency ceramic capacitor

B. Connection with filter

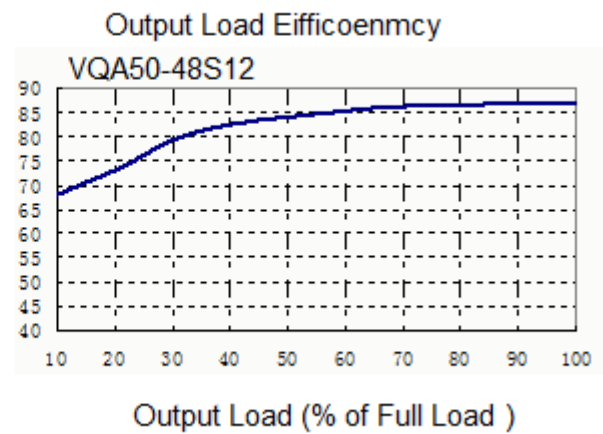
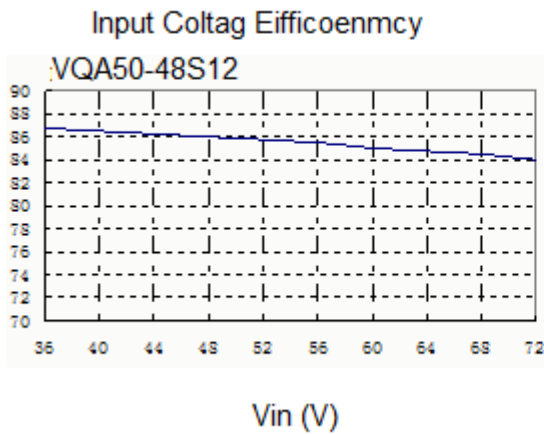


Single output

TYPICAL CHARACTERISTICS



EFFICIENCY CURVE



FOOTPRINT DETAILS

| PIN | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|--------|------|-----|------|-------|----|------|----|-------|
| SINGLE | -Vin | CTL | +Vin | -Vout | -S | Trim | +S | +Vout |

OUTLINE DIMENSIONS & RECOMMENDED FOOTPRINT

