

10 Watts

- Regulated single & dual output
- 2:1 input range
- 1" x 1" package
- 1.5kVDC isolation
- ITE safety approvals
- Metal case
- Optional remote on/off
- Operating temperature -40°C to +100°C
- Full power to +60°C
- Full power to +70°C with optional heatsink
- 3 year warranty



Dimensions:

JSM10:

1.00 x 1.00 x 0.40" (25.4 x 25.4 x 10.16 mm)

Models & Ratings

| Input voltage | Output voltage | Output current | Input current ^{1,2} | | Maximum capacitive load ³ | Efficiency | Model number ⁴ |
|-----------------|----------------|----------------|------------------------------|-----------|--------------------------------------|------------|---------------------------|
| | | | No load | Full load | | | |
| 12V (9-18V) | 3.3V | 2.50A | 15mA | 840mA | 4700µF | 82% | JSM1012S3V3 |
| | 5.0V | 2.00A | | 980mA | 2200µF | 85% | JSM1012S05 |
| | 5.1V | 2.00A | | 1000mA | 2200µF | 85% | JSM1012S5V1 |
| | 12.0V | 0.83A | | 955mA | 330µF | 87% | JSM1012S12 |
| | 15.0V | 0.67A | | 950mA | 220µF | 88% | JSM1012S15 |
| | ±5.0V | ±1.00A | | 990mA | ±1000µF | 84% | JSM1012D05 |
| | ±12.0V | ±0.416A | | 955mA | ±150µF | 87% | JSM1012D12 |
| | ±15.0V | ±0.333A | | 955mA | ±100µF | 87% | JSM1012D15 |
| 24V (18-36V) | 3.3V | 2.50A | 12mA | 415mA | 4700µF | 83% | JSM1024S3V3 |
| | 5.0V | 2.00A | | 490mA | 2200µF | 85% | JSM1024S05 |
| | 5.1V | 2.00A | | 500mA | 2200µF | 85% | JSM1024S5V1 |
| | 12.0V | 0.83A | | 470mA | 330µF | 88% | JSM1024S12 |
| | 15.0V | 0.67A | | 470mA | 220µF | 89% | JSM1024S15 |
| | ±5.0V | ±1.00A | | 490mA | ±1000µF | 85% | JSM1024D05 |
| | ±12.0V | ±0.416A | | 475mA | ±150µF | 88% | JSM1024D12 |
| | ±15.0V | ±0.333A | | 470mA | ±100µF | 89% | JSM1024D15 |
| 48V (36-75V) | 3.3V | 2.50A | 10mA | 205mA | 4700µF | 83% | JSM1048S3V3 |
| | 5.0V | 2.00A | | 240mA | 2200µF | 86% | JSM1048S05 |
| | 5.1V | 2.00A | | 250mA | 2200µF | 85% | JSM1048S5V1 |
| | 12.0V | 0.83A | | 235mA | 330µF | 89% | JSM1048S12 |
| | 15.0V | 0.67A | | 235mA | 220µF | 89% | JSM1048S15 |
| | ±5.0V | ±1.00A | | 240mA | ±1000µF | 86% | JSM1048D05 |
| | ±12.0V | ±0.416A | | 240mA | ±150µF | 87% | JSM1048D12 |
| | ±15.0V | ±0.333A | | 235mA | ±100µF | 88% | JSM1048D15 |

Notes

1. Input currents measured at nominal input voltage.
2. Input current is typically 5 mA at nominal input voltage when output is turned off with optional remote on/off.
3. Maximum capacitive load is per output.
4. Add suffix "-R" for optional remote on/off, "-HK" for optional heatsink or "-RHK" for optional remote on/off and heatsink.
5. Standard tube quantity: 10.

Input

| Characteristic | Minimum | Typical | Maximum | Units | Notes & Conditions |
|--------------------------|---|---------|---------|-------------|--------------------|
| Input Voltage Range | 9.0 | | 18 | VDC | 12 V nominal. |
| | 18.0 | | 36 | VDC | 24 V nominal. |
| | 36.0 | | 75 | VDC | 48 V nominal. |
| Input Filter | Internal Pi type | | | | |
| Input Surge | | | 25 | VDC for 1 s | 12 V models. |
| | | | 50 | | 24 V models. |
| | | | 100 | | 48 V models. |
| Undervoltage Lockout | ON at >9V, OFF at <8.5V | | | | 12 V models. |
| | ON at >18V, OFF at <17V | | | | 24 V models. |
| | ON at >36V, OFF at <34V | | | | 48 V models. |
| Remote On/Off (optional) | ON: Logic high (3.5-12 V) or open circuit, OFF: Logic low (<1.2 V) or short pin 2 to pin 6. Add suffix "-R" for optional remote on/off. | | | | |

Output

| Characteristic | Minimum | Typical | Maximum | Units | Notes & Conditions |
|--------------------------|--|---------|-----------|-------------|--|
| Output Voltage | 3.3 | | 30 | VDC | See Models and Ratings table. |
| Initial Set Accuracy | | | ±2.0 | % | At full load. |
| Output Voltage Balance | | | ±2.0 | % | For dual output with balanced loads. |
| Minimum Load | | | | A | No minimum load required. |
| Line Regulation | | | ±1.0 | % | From minimum to maximum input at full load. |
| Load Regulation | | | ±0.5/±1.0 | % | Single / Dual output, from 0 to full load. |
| Cross Regulation | | | ±5.0 | % | On dual output models when one load is varied between 25% and 100% and other is fixed at 100%. |
| Transient Response | | 3 | 5 | % deviation | Recovery within 1% in less than 300 µs for a 25% load change. |
| Ripple & Noise | | 80/100 | | mV pk-pk | 3.3 & 5V output / other models. 20 MHz bandwidth. Measured using 0.47 µF ceramic capacitor. |
| Overload Protection | | 150 | | % | |
| Short Circuit Protection | Continuous Trip & Restart (Hiccup mode), with auto recovery. | | | | |
| Maximum Capacitive Load | See Models and Ratings table. | | | | |
| Temperature Coefficient | | | 0.02 | %/°C | |

General

| Characteristic | Minimum | Typical | Maximum | Units | Notes & Conditions |
|----------------------------|---------------------------------|-------------|---------|-------------------|---|
| Efficiency | | 85 | | % | See Models and Ratings table. |
| Isolation: Input to Output | 1500/1800 | | | VDC | 60s/1s Functional Insulation. |
| Isolation Resistance | 10 ⁹ | | | Ω | At 500 VDC. |
| Isolation Capacitance | | | 2000 | pF | |
| Switching Frequency | | 330 | | kHz | |
| Pin Material | Tinned copper. | | | | |
| Case Material | Black anodised aluminium alloy. | | | | |
| Base Material | UL94V-0 rated FR4 | | | | |
| Solder Profile | | | 260 | °C | Wave solder peak, 1.5mm from case 10s max. Not suitable for vapour phase soldering. For further details contact XP Power applications team. |
| Power Density | | | 50.8 | W/in ³ | |
| Mean Time Between Failure | | 2.5 | | MHrs | MIL-HDBK-217F, +25 °C GB. |
| Weight | | 0.03 (15.0) | | lb (g) | |

Environmental

| Characteristic | Minimum | Typical | Maximum | Units | Notes & Conditions |
|-----------------------|---------|---------|---------|-------|---------------------|
| Operating Temperature | -40 | | +100 | °C | See Derating Curve. |
| Storage Temperature | -50 | | +125 | °C | |
| Case Temperature | | | +100 | °C | |
| Humidity | | | 95 | %RH | Non-condensing. |
| Cooling | | | | | Natural convection. |

EMC: Emissions

| Phenomenon | Standard | Test Level | Notes & Conditions |
|------------|----------|------------|----------------------------------|
| Conducted | EN55032 | Class A | No external components required. |
| Radiated | EN55032 | Class A | See application notes. |

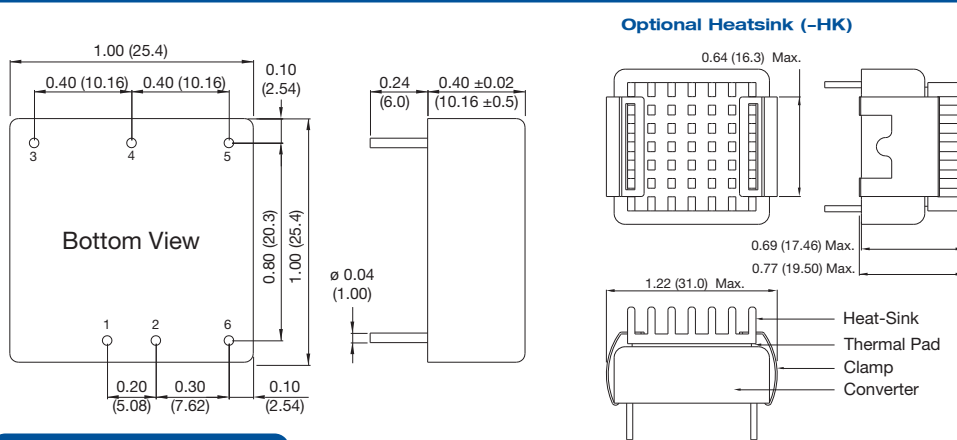
EMC: Immunity

| Phenomenon | Standard | Test Level | Criteria | Notes & Conditions |
|------------|-------------|------------------------------------|----------|---|
| ESD | EN61000-4-2 | ±8 kV air discharge, ±6 kV contact | A | |
| Radiated | EN61000-4-3 | 10 V/m | A | |
| EFT/Burst | EN61000-4-4 | ±2 kV | A | With external capacitor, suggested part is CHEMI-CON KY 330µF/100V. |
| Surge | EN61000-4-5 | ±1 kV | A | With external capacitor, suggested part is CHEMI-CON KY 330µF/100V. |
| Conducted | EN61000-4-6 | 10 V rms | A | |

Safety Approvals

| Safety Agency | Safety Standard | Notes & Conditions |
|---------------|----------------------------------|------------------------|
| UL | UL60950-1, UL62368-1 | Information Technology |
| CE | Meets all applicable directives | |
| UL | Meets all applicable legislation | |

Mechanical Details



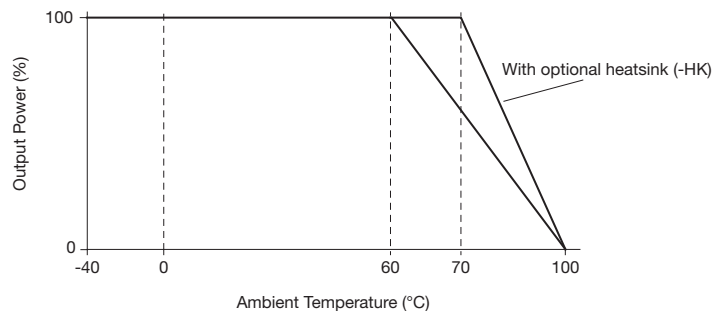
| Pin Connections | | |
|-----------------|------------------------|------------------------|
| Pin | Single | Dual |
| 1 | +Vin | +Vin |
| 2 | -Vin | -Vin |
| 3 | +Vout | +Vout |
| 4 | No Pin | Common |
| 5 | -Vout | -Vout |
| 6 | Optional Remote On/Off | Optional Remote On/Off |

Notes

- All dimensions are in inches (mm)
- Weight: 0.03 lbs (15.0g) approx.
- Tolerance: X.XX±0.01 (X.X±0.25)
X.XXX±0.005 (X.XX±0.13)
- Pin Tolerance: ±0.002 (±0.05)

Application Notes

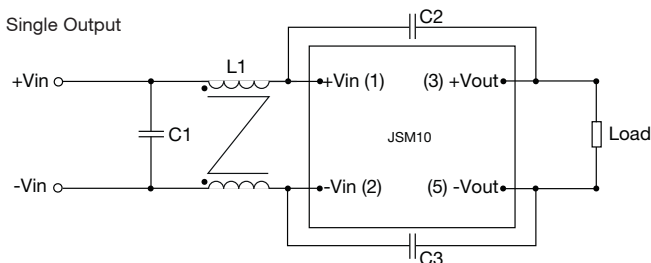
Derating Curve



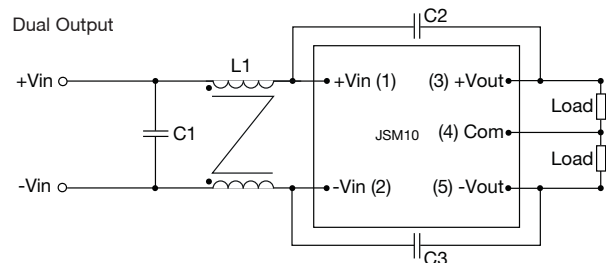
EMC Consideration

Recommended circuit for radiated Class A compliance EN55032:

Single Output



Dual Output



| C1 | L1 | C2, C3 |
|----------------------|---|----------------------|
| 3.3µF/100V, 1210 X7S | 0.4mH/0.4mH, Würth 7448014501 or equivalent | 1000pF/2kV, 1206 X7R |

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