

3S8EW_1.5RP Series

3W - Single Output - Wide Input - Isolated & Regulated DC-DC Converter

DC-DC Converter

3 Watt

- ⊕ 2:1 wide input voltage range
- ⊕ 1.5KVDC isolation
- ⊕ Short circuit protection (SCP) with current foldback
- ⊕ Regulated output types
- ⊕ Efficiency up to 85%
- ⊕ Internal SMD construction
- ⊕ Operating temperature: -40°C to +85°C
- ⊕ RoHS compliance
- ⊕ Industry standard pinout

The 3S8EW_1.5RP Series series are isolated 3W DC-DC products with 2:1 input voltage and conventional voltage output. The product has a relatively compact SIP plastic package, and features high efficiency, operating temperature of -40°C~+85°C. The smaller size and fine cost design make the converter an ideal solution in communication, instruments, and industrial electronics applications.

These products apply to:

- 1) Where the voltage of the input power supply is wide range (voltage range≤2:1)
- 2) Where isolation is necessary between input and output (isolation voltage≤1500VDC)
- 3) Where the regulation of the output voltage and the output ripple noise are demanded



| Common specifications | |
|------------------------------|--------------------------------|
| Short circuit protection: | Continuous, automatic recovery |
| Cooling: | Free air convection |
| Operation temperature range: | -40°C~+85°C |
| Storage temperature range: | -40°C ~+100°C |
| Lead temperature range: | 250±10°C / 5sec. MAX |
| Storage humidity range: | < 95% |
| Case material: | Plastic [UL94-V0] |
| MTBF (MIL-HDBK-217F@25°C): | >1,500,000 hours |
| Weight: | 4.5g |
| Dimensions: | 21.8x9.2x11.1mm |

| Output specifications | | | | | | |
|---------------------------------|--|-----|-------|----------------------|----------------|--|
| Item | Test condition | Min | Typ | Max | Units | |
| Voltage tolerance | 100% full load | | | ±3 | % | |
| Line regulation | Regulated | | | ±0.5 | % | |
| Load regulation | Regulated • 24V • Others | | | ±0.5 ±0.8 | % | |
| Temperature coefficient | 100% load | | ±0.02 | ±0.03 | %/°C | |
| Ripple&Noise* | 20MHz bandwidth • 3.3V-9V/24V types • 12-15V types | | | 100 1% of Vout | mVp-p mVp-p | |
| Transient response setting time | 50% load step change | | 350 | | µs | |
| Switching frequency | Full load, nominal input | | 100 | | KHz | |

| Input specifications | | | | | | |
|----------------------|---------------------|---------------------------|-----|-----|-------|--|
| Item | Test condition | Min | Typ | Max | Units | |
| Input filter | Filter capacitor | | | | | |
| Remote control | Turn On Turn Off | 0 ~ 0.8Vdc 2.5 ~ 12Vdc | | | | |

| Isolation specifications | | | | | | |
|--------------------------|---|------|-----|-----|-------|--|
| Item | Test condition | Min | Typ | Max | Units | |
| Isolation voltage | Tested for 1 minute, leakage current less than 1 mA | 1500 | | | VDC | |
| Isolation resistance | Test at 500VDC | 1000 | | | MΩ | |

Example:

3S8EW_1205S1.5RP

3= 3Watt; S8= SIP8; E= Cost effective; W= wide input; 9-18Vin; 5Vout; S= Single Output; 1.5= 1500VDC; R= Regulated Output; P= Short Circuit Protection

Note:

1. All specifications measured at Ta=25°C, humidity<75%, nominal input voltage and rated output load unless otherwise specified.
2. In this datasheet, all test methods are based on our corporate standards.
3. All characteristics are for listed models, and non-standard models may perform differently. Please contact our technical support for more details.
4. Please contact our technical support for any specific requirement.
5. Specifications of this product are subject to changes without prior notice.

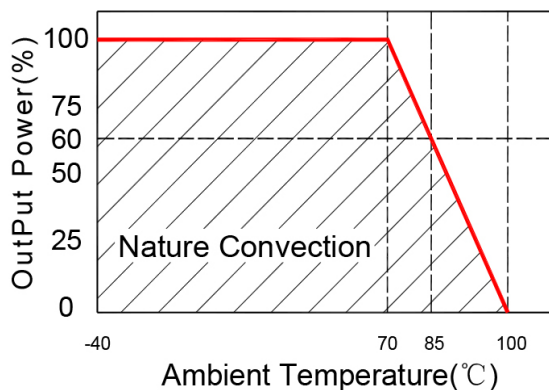
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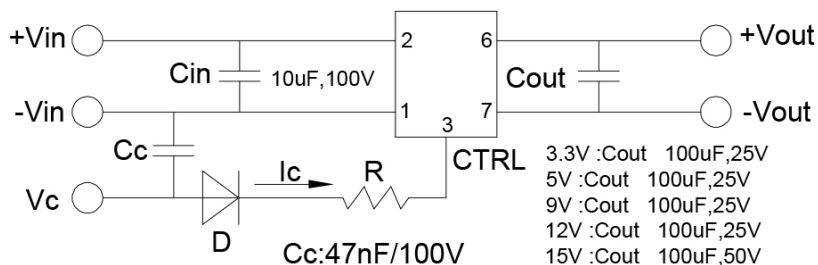
| Part Number | Input Voltage [VDC] | | Output Voltage [VDC] | Output Current [mA; max] | Efficiency [%; Typ.] |
|------------------|---------------------|-------|----------------------|--------------------------|----------------------|
| | Nominal | Range | | | |
| 3S8EW_1203S1.5RP | 12 | 9-18 | 3.3 | 909 | 70 |
| 3S8EW_1205S1.5RP | 12 | 9-18 | 5 | 600 | 70 |
| 3S8EW_1209S1.5RP | 12 | 9-18 | 9 | 333 | 75 |
| 3S8EW_1212S1.5RP | 12 | 9-18 | 12 | 250 | 78 |
| 3S8EW_1215S1.5RP | 12 | 9-18 | 15 | 200 | 80 |
| 3S8EW_2403S1.5RP | 24 | 18-36 | 3.3 | 700 | 68 |
| 3S8EW_2405S1.5RP | 24 | 18-36 | 5 | 600 | 70 |
| 3S8EW_2409S1.5RP | 24 | 18-36 | 9 | 333 | 75 |
| 3S8EW_2412S1.5RP | 24 | 18-36 | 12 | 250 | 78 |
| 3S8EW_2415S1.5RP | 24 | 18-36 | 15 | 200 | 80 |
| 3S8EW_2424S1.5RP | 24 | 18-36 | 24 | 125 | 85 |
| 3S8EW_4803S1.5RP | 48 | 36-72 | 3.3 | 700 | 68 |
| 3S8EW_4805S1.5RP | 48 | 36-72 | 5 | 600 | 70 |
| 3S8EW_4809S1.5RP | 48 | 36-72 | 9 | 600 | 75 |
| 3S8EW_4812S1.5RP | 48 | 36-72 | 12 | 250 | 78 |
| 3S8EW_4815S1.5RP | 48 | 36-72 | 15 | 200 | 80 |

Typical characteristics

Temperature derating graph



Recommended test circuit

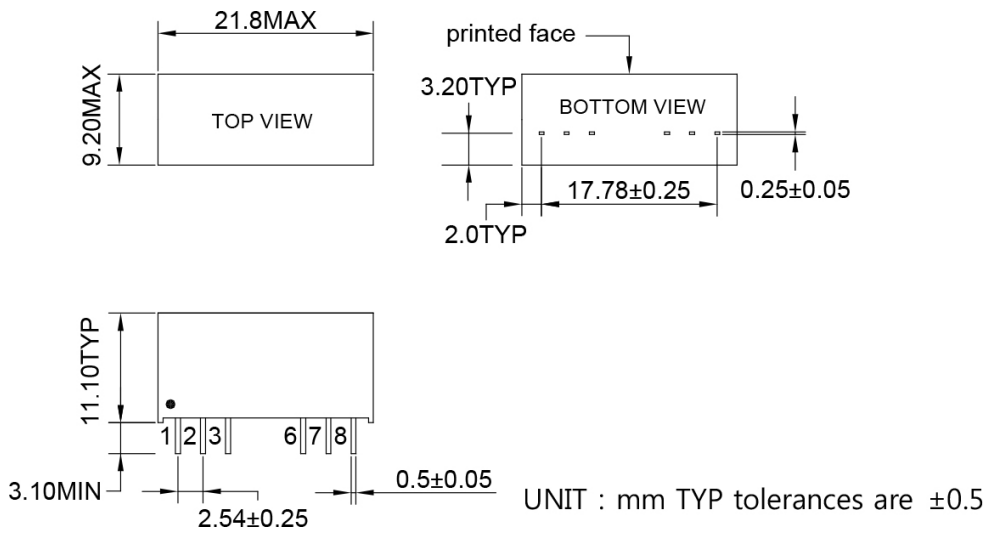


1. When open or high impedance, the converter works well; when this pin is 'high', the converter shut down. It should be note that the input current should be between 5-10mA, exceeding the maximum 20mA will cause permanent damage to the converter.
2. To make sure the product work at perfect operation status with full loading external capacitor is necessary and it is recommended to use high frequency low resistance electrolytic capacitor.

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Mechanical dimensions



| Pin | Single |
|-----|--|
| 1 | -Vin |
| 2 | +Vin |
| 3 | Ctrl-Control input can (can be left open) |
| 6 | +Vout |
| 7 | -Vout |
| 8 | NC |