GAPTEC®
GREEN TECHNOLOGY

# 3S8W4_2RP & 3S8W4_4RP series

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




## DC-DC Converter 3 Watt

- **Ultra Wide 4:1 Input Voltage Range**
- **Very Low Stand-by (no-load) Power Consumption 50mW typ and 150mW max.**
- **High Efficiency up to 86%**
- **3W Single and Dual outputs**
- **I/O Isolation 2kVDC and 4kVDC Option**
- **Operating Temperature Range: -40°C to +85°C**
- **Continuous Short Circuit Protection (SCP)**
- **Remote ON/OFF Control**
- **Internal PI-Filtering**

The 3S8W4_2RP & 3S8W4_4RP series are specially designed for applications where a wide range input voltage power supplies are isolated from the input power supply in a distributed power supply system on a circuit board.

These products apply to:
1) Where the voltage of the input power supply is wide range (voltage range≤4:1)
2) Where isolation is necessary between input and output (isolation voltage≤2000VDC/4000VDC/)
3) Where the regulation of the output voltage and the output ripple noise are demanded

| Common specifications | |
|---|---|
| Input filter: | Capacitor |
| Short circuit protection: | Continuous, automatic recovery |
| Temperature rise at full load: | 15°C TYP |
| Cooling: | Free air convection |
| Operation temperature range: | -40°C~+100°C |
| Storage temperature range: | -55°C ~+125°C |
| Storage humidity range: | < 95% |
| Lead temperature range: | 300°C MAX, 1.5mm from case for 10 sec |
| No-load power consumption: | 50mW TYP / 150mW MAX |
| Temperature coefficient: | -40°C to +85°C ambient 0.015 %/°C MAX |
| Operating Frequency: | 150kHz MIN |
| Case material: | Non-conductive black plastic [UL94-V0] |
| Potting material: | Epoxy [UL94-V0] |
| MTBF (MIL-HDBK 217F): | +25°C: 2184x10³ hours<br>+85°C: 298x10³ hours |
| Weight: | 4.7g |

**Output specifications**

| Item | Test condition | Min | Typ | Max | Units |
|---|---|---|---|---|---|
| Output accuracy | Nominal Vin and full load | | ±2 | | % |
| Line regulation | Vin=min to max,full load | | ±0.5 | | % |
| Load regulation | 20% to 100% full load | | ±0.5 | | % |
| Minimum load | | | 0 | | % |
| Temperature drift (Vout) | Refer to recommended circuit | | | ±0.03 | %/°C |
| Output Ripple & Noise | 20MHz Bandwidth | | | 60 | mVp-p |
| Remote Power OFF (leave open if not used) (15 VDC max.) | Device ON | | | | open or <0.8 VDC |
| | Device OFF<br>Device OFF (Stand by input current) | | | | CTRL>1.5VDC<br>0.5mA max. |

**Isolation specifications**

| Item | Test condition | Min | Typ | Max | Units |
|---|---|---|---|---|---|
| Isolation voltage | Tested for 1 second | 2000 and 4000 | | | VDC |
| Isolation resistance | 500VDC, input to output | 15 | | | GΩ |
| Isolation capacitance | 100KHz | | | 30 | pF |

**Example:**
**3S8W4_0505S2RP**
**3=3Watt; S8= SIP8; W4=wide input (4:1); 4,5 - 9Vin; 5Vout;**
**S= Single Output; 2= 2000VDC; R= Regulated Output**
**P= Short Curcuit 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 the test methods of indications are based on corporate standards.




GAPTEC-Electronic GmbH & Co. KG
sales@gaptec-electronic.com – www.gaptec-electronic.com

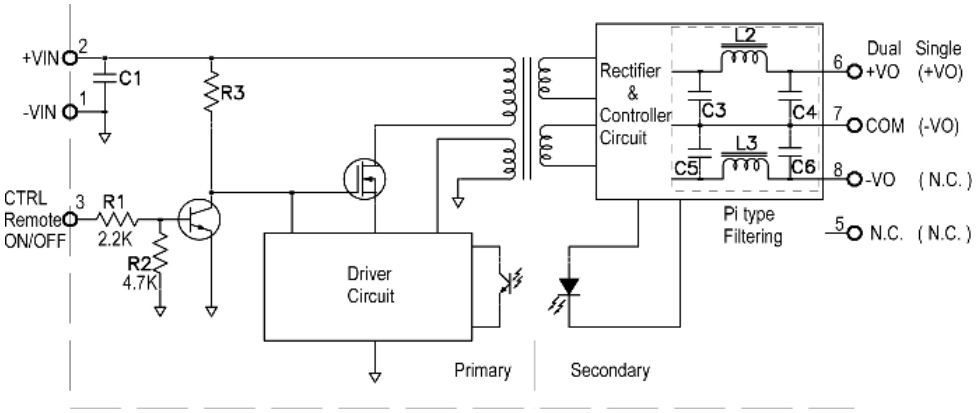
## 3S8W4_2RP & 3S8W4_4RP series

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

| Part Number | Input Voltage [V] | Output Voltage [VDC] | Output Current [mA, max] | Efficiency [%, typ] | Max. Capacative Load [µF] |
|---|---|---|---|---|---|
| 3S8W4_xx03SXRP | 4.5-18, 9-36, 18-75 | 3.3 | 600 | 78-80 | 1000 |
| 3S8W4_xx05SXRP | 4.5-18, 9-36, 18-75 | 5 | 600 | 82-83 | 1000 |
| 3S8W4_xx12SXRP | 4.5-18, 9-36, 18-75 | 12 | 250 | 85 | 470 |
| 3S8W4_xx15SXRP | 4.5-18, 9-36, 18-75 | 15 | 200 | 85 | 330 |
| 3S8W4_xx05DXRP | 4.5-18, 9-36, 18-75 | ±5 | ±300 | 82-84 | ±470 |
| 3S8W4_xx12DXRP | 4.5-18, 9-36, 18-75 | ±12 | ±125 | 84-86 | ±100 |
| 3S8W4_xx15DXRP | 4.5-18, 9-36, 18-75 | ±15 | ±100 | 85-86 | ±47 |

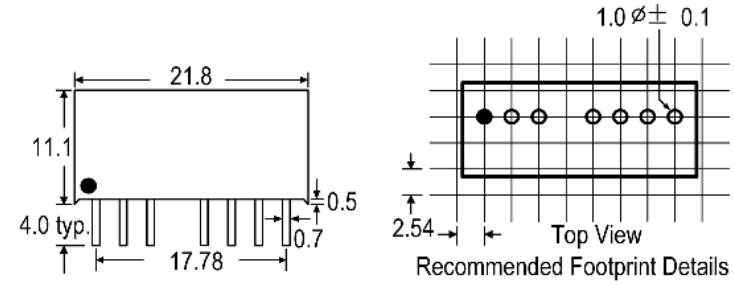
- X=2=2kVDC, X=4=4kVDC
- xx=Input Voltage (possible for other input and output voltage combinations on request)
  Vin=4.5-18V, xx=12
  Vin=9-36V, xx=24
  Vin=18-75V, xx=48

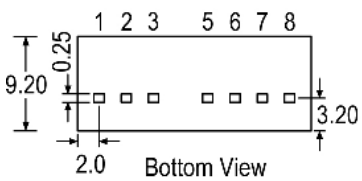
## Functional block diagram




| Input Voltage | C1 Values |
|---|---|
| 4.5~18VDC | 10uF/25V |
| 9~36VDC | 4.7uF/50V |
| 18~75VDC | 1uF/100V |

## Mechanical dimensions and foot-




XX.X ± 0.25 mm

XX.XX ± 0.15 mm

**Pin Connections**

| Pin# | Single | Dual |
|---|---|---|
| 1 | -Vin | -Vin |
| 2 | +Vin | +Vin |
| 3 | CTRL | CTRL |
| 5 | NC | NC |
| 6 | +Vout | +Vout |
| 7 | -Vout | COM |
| 8 | NC | -Vout |

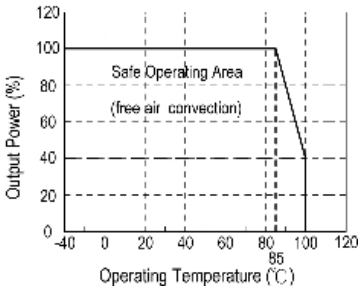
NC=No Connection
CTRL=Remote ON/OFF Control

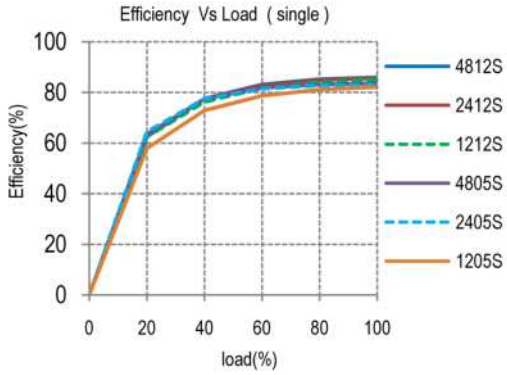


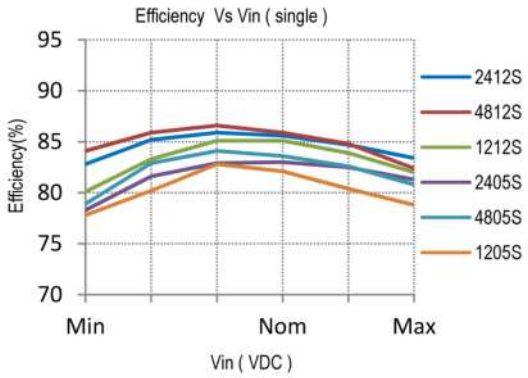
GAPTEC-Electronic GmbH & Co. KG
sales@gaptec-electronic.com – www.gaptec-electronic.com

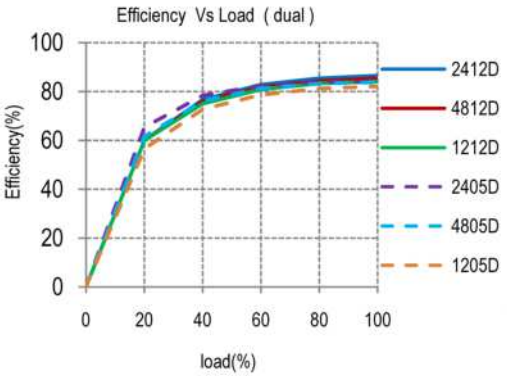

Specifications subject to change without notice.

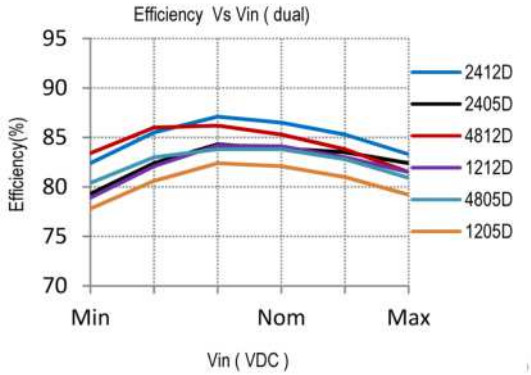
# Typical characteristics



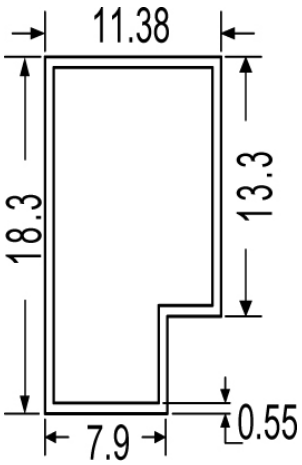




# Tube outline




**Note:**
Unit: mm[inch]
General tolerances: ±0.50mm

L=520mm
Tube quantity: 23pcs



GAPTEC-Electronic GmbH & Co. KG
sales@gaptec-electronic.com – www.gaptec-electronic.com