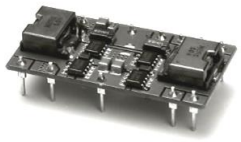
**Bellnix** High Efficiency, Minimum Size, Non-Isolated Type POL DC-DC Converter

Minimum Size, High power 40W!

# 8A/12A BSI-POWER Series

RoHS Compliance



## Ultra High Efficiency (95%), Minimum Size Step-Down DC-DC Converter

## Input: +5V, +12V Output: +3.3V (+1.0V to +3.3V)
## Input: +12V Output: +5.0V (+5.0V to +6.0V)

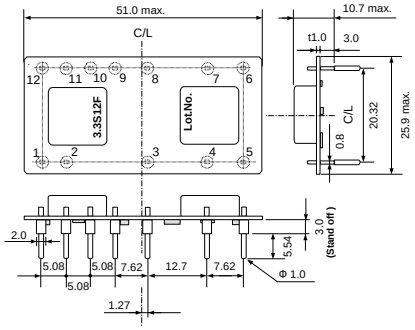
- Efficiency 93%-95%
- Input Voltage Range 4.5V-13.6V
- Output Voltage Range 1.0V-3.3V
  5V-6V
- Latest Technology, Synchronous Rectification Circuit
- Heat Sink Not Required
- Adjustable Output Voltage
- Non-Isolated Type Converter
- Short Circuit, Over-Current Protection
- No Electrolytic Capacitor used
  No Tantalum Capacitor used
- Ultra Small Size
- Remote ON/OFF Control
- MTBF 900,000Hrs
- High Reliability, High Performance
- 40W+40W＝80W
  Parallel Operation Possible
  (Application note available)
- Operating Temp Range
  -10°C to +70°C
  (Temp Derating Required)
- RoHS Compliance

| Models BSI Series | Input V Vdc | Output V Vdc | Output I A | Line Reg %(typ.) | Load Reg %(typ.) | Ripple/Noise mVpp(typ.) | Efficiency %(typ.) |
|---|---|---|---|---|---|---|---|
| **BSI-3.3S12R0F** | 4.5-13.6 | 3.3 (1.0-3.3) | 0-12 | 0.3 | 0.25 | 40 | 93 |
| **BSI-5.0S8R0F** | 8-13.6 | 5.0 (5.0-6.0) | 0-8 | 0.2 | 0.2 | 60 | 95 |

Note 1: The output voltage inside the ( ) indicates the adjustable range.
Note 2: External capacitors are required.
Note 3:Airflow maybe required depending on the ambient temperature.

<Outline>

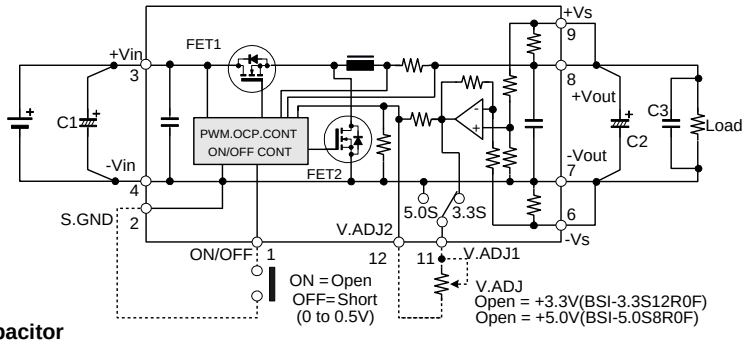
**BSI-3.3S12R0F/ BSI-5.0S8R0F**




| pin | Function |
|---|---|
| 1 | ON/OFF |
| 2 | S.GND |
| 3 | +Vin |
| 4 | -Vin |
| 5 | NC |
| 6 | -Vs |
| 7 | -Vout |
| 8 | +Vout |
| 9 | +Vs |
| 10 | NC |
| 11 | V.ADJ 1 |
| 12 | V.ADJ 2 |

Units: mm Weight: 13g typ.
Tolerances unless otherwise specified: ±0.5
Non-coated externally

<Standard Connection Diagram>




**- External Capacitor**

C1: 68μF(ESR=34mΩ or less)×2pcs or more *2 (Recommended: OS-CON)
*2 BSI-5.0S8R0F: 1pce or more
C2(Vout=3.3V): 220μF(ESR=28mΩ or less)×2pcs or more (Recommended: OS-CON)
C2(Vout=5.0V): 150μF(ESR=30mΩ or less)×1pcs or more (Recommended: OS-CON)
C2(Vout<1.7V): 330μF(ESR=25mΩ or less)×3pcs or more (Recommended: OS-CON)

**- ON/OFF Control**

ON/OFF control is controlled by opening and shortening between 1pin (ON/OFF) and 2pin (S.GND).
Output ON = Open (Max. 6V occurs at 1pin.)
Output OFF = Short (0-0.5V 500μA max.)

**- Adjustable Output Voltage**

The output voltage is adjustable by connecting a resistor between 11pin (V.ADJ1) and 12pin (V.ADJ2).
When 11 and 12pin are open, the following rating voltage is as follows
BSI-3.3S12R0F = 3.3V±4% BSI-5.0S8R0F = 5.0V±4%

**- Remote Sensing**

9pin (+Vs), 6pin (-Vs) are remote sensing pins. Be sure to wire without making a loop.

- Note!
This catalogue is an outline of the products. When designing, be sure to refer to the data sheets.