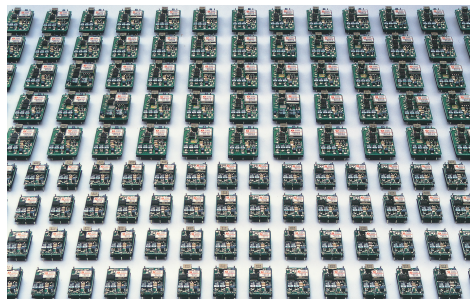




## OBQ-SC/WC

## 3W Open Frame



### FEATURES

- PCB Mountable
- Small, Light Weight
- High Efficiency
- Cost effective
- Output Voltage adjustable
- Over Voltage Protection
- **Isolated Power Supply**



| MODEL/CHANNEL |                         | Unit | OBQ05SC                             |     | OBQ12SC      |     | OBQ15SC      |     | OBQ24SC      |     | OBQ22SC      |     | OBQ23SC      |     |
|---------------|-------------------------|------|-------------------------------------|-----|--------------|-----|--------------|-----|--------------|-----|--------------|-----|--------------|-----|
| OUTPUT        | Output Voltage          | Vdc  | 5                                   |     | 12           |     | 15           |     | 24           |     | ±12          |     | ±15          |     |
|               | Output Current          | A    | 0.5                                 |     | 0.25         |     | 0.2          |     | 0.13         |     | 0.13         |     | 0.1          |     |
|               | Line Regulation max.    | mV   | 25                                  |     | 60           |     | 75           |     | 120          |     | 60           |     | 75           |     |
|               | Load Regulation max.    | mV   | 25                                  |     | 60           |     | 75           |     | 120          |     | ±1000        |     | ±1000        |     |
|               | Dynamic Line            | mV   | 250                                 |     | 200          |     | 200          |     | 200          |     | 200          |     | 200          |     |
|               | Dynamic Load            | mV   | 150                                 |     | 360          |     | 450          |     | 720          |     | 360          |     | 450          |     |
|               | Voltage Tolerance       | mV   | 100                                 |     | 240          |     | 300          |     | 480          |     | 240          |     | 300          |     |
|               | Drift                   | mV   | 40                                  |     | 75           |     | 90           |     | 135          |     | 75           |     | 90           |     |
|               | Ripple and Noise(max.)  | mVp  | 100                                 |     |              |     |              |     |              |     |              |     |              |     |
|               | Temperature Coefficient | -    | 0.03%/°C(maximum)                   |     |              |     |              |     |              |     |              |     |              |     |
|               | Recovery Time           | mS   | 20mS(typical)                       |     |              |     |              |     |              |     |              |     |              |     |
|               | Rise Up Time            | mS   | 10mS(typical) at rated input/output |     |              |     |              |     |              |     |              |     |              |     |
| MODEL/CHANNEL |                         | Unit | OBQ05 SC0512                        |     | OBQ12 SC0512 |     | OBQ15 SC0512 |     | OBQ24 SC0512 |     | OBQ22 WC0512 |     | OBQ23 WC0512 |     |
| INPUT         | Input Voltage           | Vac  | 5                                   | 12  | 5            | 12  | 5            | 12  | 5            | 12  | 5            | 12  | 5            | 12  |
|               | No Load                 | mA   | 41                                  | 44  | 51           | 54  | 51           | 53  | 57           | 59  | 66           | 64  | 64           | 64  |
|               | Full Load               | mA   | 676                                 | 297 | 789          | 342 | 779          | 337 | 800          | 346 | 843          | 356 | 800          | 342 |
|               | Line Back Noise         | mVp  | 200                                 | 100 | 100          | 80  | 200          | 100 | 200          | 100 | 200          | 100 | 200          | 100 |
|               | Efficiency (typical)    | %    | 74                                  | 70  | 76           | 73  | 77           | 74  | 78           | 75  | 74           | 73  | 75           | 73  |
|               | Input Voltage Range     | Vdc  | 4.5-16V                             |     |              |     |              |     |              |     |              |     |              |     |





| MODEL/CHANNEL |                        | Unit | OBQ05<br>SC1224                                                                                                         |       | OBQ12<br>SC1224 |      | OBQ15<br>SC1224 |     | OBQ24<br>SC1224 |      | OBQ22<br>WC1224 |     | OBQ23<br>WC1224 |     |
|---------------|------------------------|------|-------------------------------------------------------------------------------------------------------------------------|-------|-----------------|------|-----------------|-----|-----------------|------|-----------------|-----|-----------------|-----|
| INPUT         | Input Voltage          | Vdc  | 12                                                                                                                      | 24    | 12              | 24   | 12              | 24  | 12              | 24   | 12              | 24  | 12              | 24  |
|               | Input Range No Load    | mA   | 22                                                                                                                      | 24    | 28              | 29   | 28              | 29  | 30              | 30   | 35              | 31  | 32              | 29  |
|               | Input Range Full Load  | mA   | 267                                                                                                                     | 144   | 312             | 168  | 304             | 164 | 317             | 171  | 329             | 173 | 308             | 164 |
|               | Line Back Noise        | mVp  | 300                                                                                                                     | 150   | 300             | 150  | 300             | 150 | 300             | 150  | 1000            | 500 | 1000            | 500 |
|               | Efficiency (typical)   | %    | 78                                                                                                                      | 72    | 80              | 74   | 82              | 76  | 82              | 76   | 79              | 75  | 81              | 76  |
|               | Input Voltage Range    | Vdc  | 8-32                                                                                                                    |       |                 |      |                 |     |                 |      |                 |     |                 |     |
| MODEL/CHANNEL |                        | Unit | OBQ05<br>SC2448                                                                                                         |       | OBQ12<br>SC2448 |      | OBQ15<br>SC2448 |     | OBQ24<br>SC2448 |      | OBQ22<br>WC2448 |     | OBQ23<br>WC2448 |     |
| INPUT         | Input Voltage          | Vdc  | 24                                                                                                                      | 48    | 24              | 48   | 24              | 48  | 24              | 48   | 24              | 48  | 24              | 48  |
|               | Input Range No Load    | mA   | 10                                                                                                                      | 11    | 15              | 15   | 15              | 15  | 15              | 15   | 14              | 14  | 14              | 14  |
|               | Input Range Full Load  | mA   | 136                                                                                                                     | 72    | 154             | 82   | 152             | 81  | 158             | 84.4 | 160             | 86  | 152             | 75  |
|               | Line Back Noise        | mVp  | 100                                                                                                                     | 80    | 100             | 80   | 100             | 80  | 100             | 80   | 200             | 100 | 200             | 100 |
|               | Efficiency (typical)   | %    | 76                                                                                                                      | 72    | 81              | 76   | 82              | 77  | 82              | 77   | 81              | 76  | 82              | 76  |
|               | Input Voltage Range    | Vdc  | 18-72V                                                                                                                  |       |                 |      |                 |     |                 |      |                 |     |                 |     |
| Environment   | Operating Temperature  | °C   | -20 to +71°C                                                                                                            |       |                 |      |                 |     |                 |      |                 |     |                 |     |
|               | (derating)             | °C   | 3.5%/°C (50°C to 71°C) (out of warranty >=71°C)                                                                         |       |                 |      |                 |     |                 |      |                 |     |                 |     |
|               | Operating Humidity     | %    | 20-90%/RH(non-condensing)                                                                                               |       |                 |      |                 |     |                 |      |                 |     |                 |     |
|               | Storage Temperature    | °C   | -20 to +85°C                                                                                                            |       |                 |      |                 |     |                 |      |                 |     |                 |     |
|               | Storage Humidity       | %    | 20 to 90%/RH(non-condensing)                                                                                            |       |                 |      |                 |     |                 |      |                 |     |                 |     |
|               | Withstanding Voltage   | -    | Primary-Secondary AC500V for 1minute                                                                                    |       |                 |      |                 |     |                 |      |                 |     |                 |     |
|               | Isolation Voltage      | -    | Primary-Frame Ground 50MΩ(minimum) by DC500V insulation tester                                                          |       |                 |      |                 |     |                 |      |                 |     |                 |     |
|               | Shock                  | -    | 294m/s^2                                                                                                                |       |                 |      |                 |     |                 |      |                 |     |                 |     |
|               | Cooling                | -    | Convection                                                                                                              |       |                 |      |                 |     |                 |      |                 |     |                 |     |
|               | Vibration              | -    | 5-10Hz: 10mm double amplitude,10-55Hz: 19.6m/s^2, 20 minutes period for 60 minutes each along X,Y,Z axes(non-operating) |       |                 |      |                 |     |                 |      |                 |     |                 |     |
| Function      | Trimming of Output     | -    | +250                                                                                                                    | +250  | +350            | +650 |                 |     |                 |      |                 |     |                 |     |
|               |                        | -250 | -900                                                                                                                    | -1600 | -4000           |      |                 |     |                 |      |                 |     |                 |     |
|               | Overcurrent Protection | -    | Foldback/Current Limiting with automatic recovery at discontinuous short circuit conditions                             |       |                 |      |                 |     |                 |      |                 |     |                 |     |
|               | Input Fuse             | -    | Installed                                                                                                               |       |                 |      |                 |     |                 |      |                 |     |                 |     |
|               | Capacitance            | pF   | 2200                                                                                                                    |       |                 |      |                 |     |                 |      |                 |     |                 |     |
| Dimension     | Size(WxHxD) / Weight   | mm/g | 20.1Wx32Lx10.4H open board type/6g                                                                                      |       |                 |      |                 |     |                 |      |                 |     |                 |     |



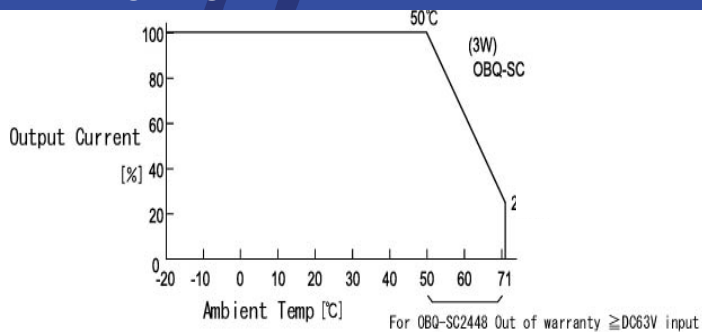


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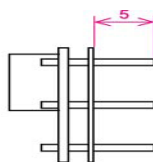
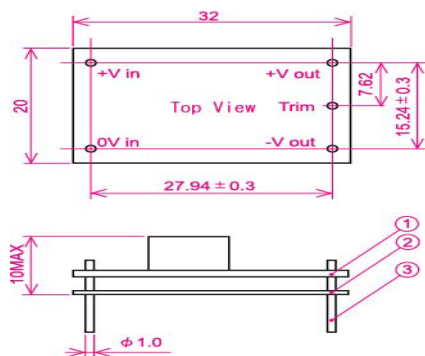
## Derating Diagram

## 3W Open Frame



## Dimension Diagram (mm)

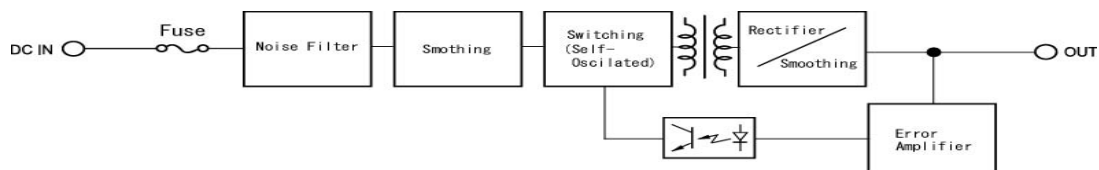
## 3W Open Frame



- ① Double-sided PCB FR4t=1.0
  - ② t=0.5 Insulator V0
  - ③ 1.0DIA PIN Material:BsB 2700 1/2H  
Copper Plating 1~3 $\mu$ m  
Solder Plating 3~6 $\mu$ m
- \* Tolerance  $\pm 0.5$

## Block Diagram (mm)

## 3W Open Frame



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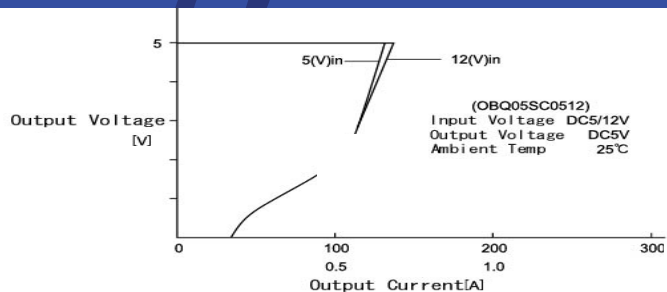
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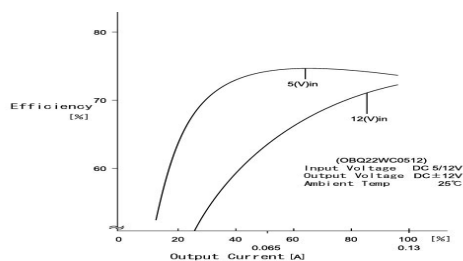
## OCP Curves

## 3W Open Frame

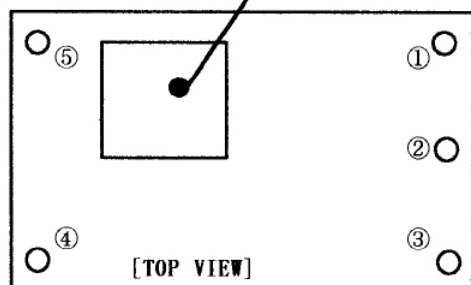


## Efficiency Curve

## 3W Open Frame



## OBQ-SC/WC



① : + [V]

② : COM

③ : 0 [V]

④ : DC 0 [V]

⑤ : DC + [V]



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