

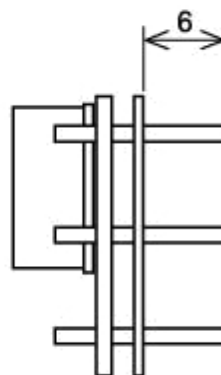
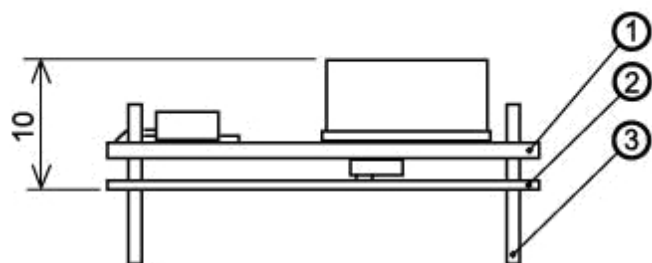
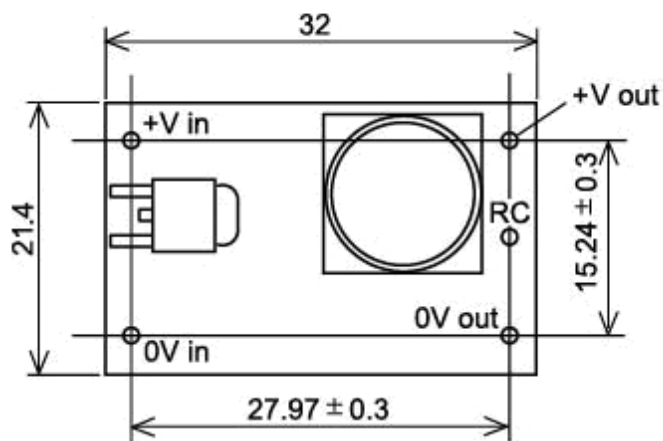


**ETA-USA**  
The Power Professionals



## OC1XX-SCXXXX-A

4.6~28.8 WATT  
NON-ISOLATED  
DC-DC CONVERTER



Turn on by inputting voltage (4.5 to 56V) between "RC" pin and "0V" pin. Put a 5k ohm resistor between "+ in" pin and "RC" pin when remote on/off is not used

- ① Double-sided PCB FR4t=1.0
- ② t=0.5 Insulator UL94V0
- ③ 1.0DIA PIN Material:BsB 2700 1/2H

Solder Plating

\*Tolerance  $\pm 0.5$



**ETA-USA**

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At rated input and output, 25[°C] ambient unless noted.

| SPECIFICATION                             |                            | MODEL                | OC1-24SC48U1A                                                                                                    |
|-------------------------------------------|----------------------------|----------------------|------------------------------------------------------------------------------------------------------------------|
| <b>INPUT SPECIFICATION</b>                |                            |                      |                                                                                                                  |
| Rated Input Voltage                       | [V] DC                     |                      | DC 48                                                                                                            |
| Rated Input Current                       | [mA] Max.                  |                      | 700                                                                                                              |
| Allowable Input Voltage Range             | [V]                        |                      | DC40.8 ~ 56                                                                                                      |
| Inrush Current                            | ※1                         |                      | Not Specified<br>(Reference : 33[A], 7[μs], DC48[V] in)                                                          |
| Stand-by Input Current                    | [mA] Typ.                  |                      | 14                                                                                                               |
| Input Current when Remote Control is off. | [μA] Typ.                  |                      | 5                                                                                                                |
| Input Leakage Ripple Voltade              | [mVp-p] Typ.               |                      | 1000                                                                                                             |
| Efficiency                                | [%] Typ.                   |                      | 95.0                                                                                                             |
| <b>OUTPUT SPECIFICATION</b>               |                            |                      |                                                                                                                  |
| Maximum Output Power                      | [W]                        |                      | 4.6 ~ 28.8                                                                                                       |
| Rated Output Voltage                      | [V]                        |                      | 24                                                                                                               |
| Rated Output Current                      | [mA]                       |                      | 1200                                                                                                             |
| Output Voltage Accuracy                   | [V]                        |                      | 23.28 ~ 24.72                                                                                                    |
| Ripple and Noise                          | [mVp-p] Max.               | ※2                   | 200                                                                                                              |
| Voltage Regulation                        | a. Line Regulation         | [mV] Max. ※3         | 120                                                                                                              |
|                                           | b. Load Regulation         | [mV] Max. ※4         | 120                                                                                                              |
|                                           | c. Temperature Effect      | [mV] Max. -20~71[°C] | 655                                                                                                              |
|                                           | d. Drift                   | [mV] Max. ※5         | 135                                                                                                              |
|                                           | e. Dynamic Line Regulation | [mV] Max. ※6         | ±1500                                                                                                            |
|                                           | f. Dynamic Load Regulation | [mV] Max. ※7         | ±200                                                                                                             |
|                                           | g. Recovery Time           | [ms] Max. ※6         | 5                                                                                                                |
| Start-up Time                             | [ms] Max.                  | ※7                   | 5                                                                                                                |
| Hold-up Time                              |                            |                      | Not Specified (= 0[S] )                                                                                          |
| <b>OPTIONAL FUNCTIONS</b>                 |                            |                      |                                                                                                                  |
| Over Current Protection                   |                            |                      | Auto recover. Hiccup.                                                                                            |
|                                           | [A] Min.                   |                      | 1.30                                                                                                             |
| Over Voltage Protection                   |                            |                      | Zener diode limiting                                                                                             |
|                                           | [V] Min.                   |                      | 26.4                                                                                                             |
| Operation Indicator                       |                            |                      | None                                                                                                             |
| Remote Control (RC)                       | ※8                         |                      | Available                                                                                                        |
| Remote Sensing (RS)                       |                            |                      | None                                                                                                             |
| Power Fail (PF)                           |                            |                      | None                                                                                                             |
| Output Voltage Trimming                   |                            |                      | None                                                                                                             |
| Input Fuse                                |                            |                      | Built-in (2[A])                                                                                                  |
| Serial Operation                          |                            |                      | Not available                                                                                                    |
| Parallel Operation                        |                            |                      | Not available (1+1 redundant with using OR-ing diode is acceptable.)                                             |
| <b>GENERAL SPECIFICATIONS</b>             |                            |                      |                                                                                                                  |
| Operating Temperature                     | [°C]                       |                      | Refer to the De-Rating Condition.<br>-20 ~ +71                                                                   |
| Storage Temperature                       | [°C]                       |                      | -20 ~ +85 Except thermal shock                                                                                   |
| Operating Humidity                        | [%] RH                     |                      | 20 ~ 90 Without condensation                                                                                     |
| Storage Humidity                          | [%] RH                     |                      | 20 ~ 90 Without condensation                                                                                     |
| Withstanding Voltage                      |                            |                      | Non Isolated                                                                                                     |
| Insulation Resistance                     |                            |                      | Non Isolated                                                                                                     |
| Vibration                                 | ※9                         |                      | 5 - 10[Hz] / XYZ axis 10[mm], 10 - 550[Hz] / 24.5[m/s <sup>2</sup> ]<br>XYZ axis (non-operating)                 |
| Shock                                     | ※9                         |                      | 294[m/s <sup>2</sup> ] / XYZ axis.                                                                               |
| Cooling Method                            |                            |                      | Convection Cooling                                                                                               |
| <b>APPLIED STANDARDS</b>                  |                            |                      |                                                                                                                  |
| Safety Standards                          |                            |                      | North America : UL60950-1 2nd ed. 2011-12-19 Approved<br>: CAN/CSA-C22.2 No. 60950-1-07 2nd ed. 2011-12 Approved |
| <b>DIMENSION AND WEIGHT</b>               |                            |                      |                                                                                                                  |
| Appearance                                |                            |                      | On-Board Type                                                                                                    |
| Dimension                                 | [mm] (HxWxD)               |                      | 10 x 32 x 21.4                                                                                                   |
| Weight                                    | [g] Max.                   |                      | 8                                                                                                                |
| <b>REFERENCE</b>                          |                            |                      |                                                                                                                  |
| MTBF                                      | [h]                        | ※10                  | 587,986.27                                                                                                       |

※1 Reference : At cold start.

※2 Measured by Measured by a Bayonet type probe. Bandwidth DC-100[MHz].

※3 40.8 to 56[V] DC input voltage.

※4 At 48[V] DC , 0 to 100[%] load.

※5 Up to 8[h] after 1[h].

※6 At rated load , input voltage is changed between 40.8[V] DC and 56[V] DC.

※7 At 48[V] DC , load is changed between 25[%] and 75[%]

※8 ON : Apply DC2.8V-Input Voltage between PIN "RC" and "OV" (Inflowing current will be 5-500[μA]Typ. when 5-56V applied )

OFF: When PIN "RC" and "OV" is open

Short the PIN "RC" and "+Input Voltage" when not using the RC function

※9 The hole size of the mother board have to be 1.3[φ]. Solder resist window 3.4[φ]  
(In Thickness 1.6[mm] CEM-3 mother board).

Mother board have to be Non-resonated.

※10 Standard for recommended reliability estimation of components' count method of JEITA's switching power supply. According to JEITA RCR-9102B (MIL-HDBK-217F-NOTICE 2).





At rated input and output, 25[°C] ambient unless noted.

| SPECIFICATION                             |                            | MODEL                | OC1-3.3SC1224U1A                                                                   |      | OC1-05SC1224U1A |      | OC1-06SC1224U1A |      |
|-------------------------------------------|----------------------------|----------------------|------------------------------------------------------------------------------------|------|-----------------|------|-----------------|------|
| INPUT SPECIFICATION                       |                            |                      |                                                                                    |      |                 |      |                 |      |
| Rated Input Voltage                       | [V] DC                     |                      | 12                                                                                 | 24   | 12              | 24   | 12              | 24   |
| Rated Input Current                       | [mA] Max.                  |                      | 500                                                                                | 300  | 800             | 400  | 900             | 450  |
| Allowable Input Voltage Range             | [V]                        |                      | DC10.2 ~ 32                                                                        |      |                 |      |                 |      |
| Inrush Current                            |                            | ※1                   | Not Specified<br>(Reference : 8[A], 10[μs], DC12[V] in / 13[A], 8[μs], DC24[V] in) |      |                 |      |                 |      |
| Stand-by Input Current                    | [mA] Typ.                  |                      | 10                                                                                 | 11   | 10              | 11   | 10              | 11   |
| Input Current when Remote Control is off. | [μA] Typ.                  |                      | 1                                                                                  | 2    | 1               | 2    | 1               | 2    |
| Input Leakage Ripple Voltage              | [mVp-p] Typ.               |                      | 500                                                                                | 500  | 700             | 700  | 700             | 700  |
| Efficiency                                | [%] Typ.                   |                      | 84.0                                                                               | 81.0 | 89.0            | 87.0 | 90.0            | 88.0 |
| OUTPUT SPECIFICATION                      |                            |                      |                                                                                    |      |                 |      |                 |      |
| Maximum Output Power                      | [W]                        |                      | 4.6 ~ 28.8                                                                         |      |                 |      |                 |      |
| Rated Output Voltage                      | [V]                        |                      | 3.3                                                                                |      | 5               |      | 6               |      |
| Rated Output Current                      | [mA]                       |                      | 1400                                                                               |      | 1400            |      | 1400            |      |
| Output Voltage Accuracy                   | [V]                        |                      | 3.20~3.40                                                                          |      | 4.85~5.15       |      | 5.82~6.18       |      |
| Ripple and Noise                          | [mVp-p] Max.               | ※2                   | 200                                                                                |      | 200             |      | 200             |      |
| Voltage Regulation                        | a. Line Regulation         | [mV] Max. ※3         | 18                                                                                 |      | 25              |      | 30              |      |
|                                           | b. Load Regulation         | [mV] Max. ※4         | 18                                                                                 |      | 25              |      | 30              |      |
|                                           | c. Temperature Effect      | [mV] Max. -20~71[°C] | 91                                                                                 |      | 137             |      | 164             |      |
|                                           | d. Drift                   | [mV] Max. ※5         | 30                                                                                 |      | 40              |      | 45              |      |
|                                           | e. Dynamic Line Regulation | [mV] Max. ※6         | ±500                                                                               |      | ±1000           |      | ±1000           |      |
|                                           | f. Dynamic Load Regulation | [mV] Max. ※7         | ±200                                                                               |      | ±200            |      | ±200            |      |
|                                           | g. Recovery Time           | [ms] Max. ※6         |                                                                                    |      | 5               |      |                 |      |
|                                           |                            |                      | ※7                                                                                 |      |                 |      |                 |      |
| Start-up Time                             | [ms] Max.                  |                      |                                                                                    |      | 5               |      |                 |      |
| Hold-up Time                              |                            |                      | Not Specified ( = 0[S] )                                                           |      |                 |      |                 |      |
| OPTIONAL FUNCTIONS                        |                            |                      |                                                                                    |      |                 |      |                 |      |
| Over Current Protection                   |                            |                      | Auto recover.Hiccup.                                                               |      |                 |      |                 |      |
|                                           | [A] Min.                   |                      | 1.50                                                                               |      | 1.50            |      | 1.50            |      |
| Over Voltage Protection                   |                            |                      | Zener diode limiting                                                               |      |                 |      |                 |      |
|                                           | [V] Min.                   |                      | 3.63                                                                               |      | 5.75            |      | 6.90            |      |
| Operation Indicator                       |                            |                      | None                                                                               |      |                 |      |                 |      |
| Remote Control (RC)                       |                            | ※8                   | Available                                                                          |      |                 |      |                 |      |
| Remote Sensing (RS)                       |                            |                      | None                                                                               |      |                 |      |                 |      |
| Power Fail (PF)                           |                            |                      | None                                                                               |      |                 |      |                 |      |
| Output Voltage Trimming                   |                            |                      | None                                                                               |      |                 |      |                 |      |
| Input Fuse                                |                            |                      | Built-in (2[A])                                                                    |      |                 |      |                 |      |
| Serial Operation                          |                            |                      | Not available                                                                      |      |                 |      |                 |      |
| Parallel Operation                        |                            |                      | Not available (1+1 redundant with using OR-ing diode is acceptable.)               |      |                 |      |                 |      |
| GENERAL SPECIFICATIONS                    |                            |                      |                                                                                    |      |                 |      |                 |      |
| Operating Temperature                     |                            |                      | Refer to the De-Rating Condition.                                                  |      |                 |      |                 |      |
|                                           | [°C]                       |                      | -20 ~ +71                                                                          |      |                 |      |                 |      |
| Storage Temperature                       | [°C]                       |                      | -20 ~ +85 Except thermal shock                                                     |      |                 |      |                 |      |
| Operating Humidity                        | [%] RH                     |                      | 20 ~ 90 Without condensation                                                       |      |                 |      |                 |      |
| Storage Humidity                          | [%] RH                     |                      | 20 ~ 90 Without condensation                                                       |      |                 |      |                 |      |
| Withstanding Voltage                      |                            |                      | Non Isolated                                                                       |      |                 |      |                 |      |
| Insulation Resistance                     |                            |                      | Non Isolated                                                                       |      |                 |      |                 |      |
| Vibration                                 |                            | ※9                   | 5 - 10[Hz] / XYZ axis 10[mm], 10 - 55 0[Hz] / 24.5[m/s <sup>2</sup> ]              |      |                 |      |                 |      |
| Shock                                     |                            | ※9                   | 294[m/s <sup>2</sup> ] / XYZ axis.                                                 |      |                 |      |                 |      |
| Cooling Method                            |                            |                      | Convection Cooling                                                                 |      |                 |      |                 |      |
| APPLIED STANDARDS                         |                            |                      |                                                                                    |      |                 |      |                 |      |
| Safety Standards                          |                            |                      | North America : UL60950-1 2nd ed. 2011-12-19                                       |      |                 |      | Approved        |      |
| DIMENSION AND WEIGHT                      |                            |                      |                                                                                    |      |                 |      |                 |      |
| Appearance                                |                            |                      | On-Board Type                                                                      |      |                 |      |                 |      |
| Dimension                                 | [mm] (HxWxD)               |                      | 10 x 32 x 21.4                                                                     |      |                 |      |                 |      |
| Weight                                    | [g] Max.                   |                      | 8                                                                                  |      |                 |      |                 |      |
| REFERENCE                                 |                            |                      |                                                                                    |      |                 |      |                 |      |
| MTBF                                      | [h]                        | ※10                  | 564,882.39                                                                         |      | 564,882.39      |      | 564,882.39      |      |

※1 Reference : At cold start.

※2 Measured by Measured by a Bayonet type probe. Bandwidth DC-100[MHz].

※3 40.8 to 56[V] DC input voltage.

※4 At 48[V] DC, 0 to 100[%] load.

※5 Up to 8[h] after 1[h].

※6 At rated load, input voltage is changed between 40.8[V] DC and 56[V] DC.

※7 At 48[V] DC, load is changed between 25[%] and 75[%]

※8 ON : Apply DC2.8V-Input Voltage between PIN "RC" and "OV" (Inflowing current OFF: When PIN "RC" and "OV" is open  
Short the PIN "RC" and "+Input Voltage" when not using the RC function

※9 The hole size of the mother board have to be 1.3[φ], Solder resist window (In Thickness 1.6[mm] CEM-3 mother board).

Mother board have to be Non-resonated.

※10 Standard for recommended reliability estimation of components' count method of JEITA's switching power supply. According to JEITA RCR-9102B(MIL-HDBK-





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At rated input and output, 25[°C] ambient unless noted.

| SPECIFICATION                             |                            |           | MODEL                                                                                                            | OC1-<br>3.3SC2448U1A | OC1-<br>05SC2448U1A | OC1-<br>06SC2448U1A | OC1-<br>09SC2448U1A | OC1-<br>12SC2448U1A | OC1-<br>15SC2448U1A |      |      |      |      |      |
|-------------------------------------------|----------------------------|-----------|------------------------------------------------------------------------------------------------------------------|----------------------|---------------------|---------------------|---------------------|---------------------|---------------------|------|------|------|------|------|
| INPUT SPECIFICATION                       |                            |           |                                                                                                                  |                      |                     |                     |                     |                     |                     |      |      |      |      |      |
| Rated Input Voltage                       | [V] DC                     |           | 24                                                                                                               | 48                   | 24                  | 48                  | 24                  | 48                  | 24                  | 48   | 24   | 48   |      |      |
| Rated Input Current                       | [mA] Max.                  |           | 300                                                                                                              | 150                  | 400                 | 200                 | 450                 | 250                 | 650                 | 350  | 800  | 400  | 850  | 450  |
| Allowable Input Voltage Range             | [V]                        |           | DC20.4 ~ 56                                                                                                      |                      |                     |                     |                     |                     |                     |      |      |      |      |      |
| Inrush Current                            |                            | ※1        | Not Specified<br>(Reference : 16[A], 8[μs], DC24[V] in / 33[A], 7[μs], DC48[V] in)                               |                      |                     |                     |                     |                     |                     |      |      |      |      |      |
| Stand-by Input Current                    | [mA] Typ.                  |           | 11                                                                                                               | 13                   | 11                  | 13                  | 11                  | 13                  | 11                  | 13   | 12   | 13   | 12   | 13   |
| Input Current when Remote Control is off. | [μA] Typ.                  |           | 2                                                                                                                | 5                    | 2                   | 5                   | 2                   | 5                   | 2                   | 5    | 2    | 5    | 2    | 5    |
| Input Leakage Ripple Voltade              | [mVp-p] Typ.               |           | 500                                                                                                              | 500                  | 700                 | 700                 | 700                 | 700                 | 700                 | 700  | 800  | 800  | 900  | 900  |
| Efficiency                                | [%] Typ.                   |           | 79.0                                                                                                             | 74.0                 | 85.0                | 82.0                | 87.0                | 83.0                | 90.0                | 87.0 | 93.0 | 90.0 | 95.0 | 92.0 |
| OUTPUT SPECIFICATION                      |                            |           |                                                                                                                  |                      |                     |                     |                     |                     |                     |      |      |      |      |      |
| Maximum Output Power                      | [W]                        |           | 4.6 ~ 28.8                                                                                                       |                      |                     |                     |                     |                     |                     |      |      |      |      |      |
| Rated Output Voltage                      | [V]                        |           | 3.3                                                                                                              | 5                    | 6                   | 9                   | 12                  | 15                  |                     |      |      |      |      |      |
| Rated Output Current                      | [mA]                       |           | 1400                                                                                                             | 1400                 | 1400                | 1400                | 1300                | 1200                |                     |      |      |      |      |      |
| Output Voltage Accuracy                   | [V]                        |           | 3.20~3.40                                                                                                        | 4.85~5.15            | 5.82~6.18           | 8.73~9.27           | 11.64~12.36         | 14.55~15.45         |                     |      |      |      |      |      |
| Ripple and Noise                          | [mVp-p] Max.               | ※2        | 200                                                                                                              | 200                  | 200                 | 200                 | 200                 | 200                 |                     |      |      |      |      |      |
| Voltage Regulation                        | a. Line Regulation         | [mV] Max. | ※3                                                                                                               | 18                   | 25                  | 30                  | 45                  | 60                  | 75                  |      |      |      |      |      |
|                                           | b. Load Regulation         | [mV] Max. | ※4                                                                                                               | 18                   | 25                  | 30                  | 45                  | 60                  | 75                  |      |      |      |      |      |
|                                           | c. Temperature Effect      | [mV] Max. | -20~71[°C]                                                                                                       | 90                   | 137                 | 164                 | 246                 | 328                 | 410                 |      |      |      |      |      |
|                                           | d. Drift                   | [mV] Max. | ※5                                                                                                               | 30                   | 40                  | 45                  | 60                  | 75                  | 90                  |      |      |      |      |      |
|                                           | e. Dynamic Line Regulation | [mV] Max. | ※6                                                                                                               | ±500                 | ±1000               | ±1000               | ±1500               | ±1500               | ±1500               |      |      |      |      |      |
|                                           | f. Dynamic Load Regulation | [mV] Max. | ※7                                                                                                               | ±200                 | ±200                | ±200                | ±200                | ±200                | ±200                |      |      |      |      |      |
|                                           | g. Recovery Time           | [ms] Max. | ※6                                                                                                               |                      |                     |                     | 5                   |                     |                     |      |      |      |      |      |
| Start-up Time                             | [ms] Max.                  | ※7        |                                                                                                                  |                      |                     | 5                   |                     |                     |                     |      |      |      |      |      |
| Hold-up Time                              |                            |           | Not Specified ( = 0[S] )                                                                                         |                      |                     |                     |                     |                     |                     |      |      |      |      |      |
| OPTIONAL FUNCTIONS                        |                            |           |                                                                                                                  |                      |                     |                     |                     |                     |                     |      |      |      |      |      |
| Over Current Protection                   | [A] Min.                   |           | 1.50                                                                                                             | 1.50                 | 1.50                | 1.50                | 1.40                | 1.30                |                     |      |      |      |      |      |
| Over Voltage Protection                   | [V] Min.                   |           | 3.63                                                                                                             | 5.75                 | 6.90                | 10.35               | 13.80               | 17.25               |                     |      |      |      |      |      |
| Operation Indicator                       |                            |           | None                                                                                                             |                      |                     |                     |                     |                     |                     |      |      |      |      |      |
| Remote Control (RC)                       |                            | ※8        | Available                                                                                                        |                      |                     |                     |                     |                     |                     |      |      |      |      |      |
| Remote Sensing (RS)                       |                            |           | None                                                                                                             |                      |                     |                     |                     |                     |                     |      |      |      |      |      |
| Power Fail (PF)                           |                            |           | None                                                                                                             |                      |                     |                     |                     |                     |                     |      |      |      |      |      |
| Output Voltage Trimming                   |                            |           | None                                                                                                             |                      |                     |                     |                     |                     |                     |      |      |      |      |      |
| Input Fuse                                |                            |           | Built-in (2[A])                                                                                                  |                      |                     |                     |                     |                     |                     |      |      |      |      |      |
| Serial Operation                          |                            |           | Not available                                                                                                    |                      |                     |                     |                     |                     |                     |      |      |      |      |      |
| Parallel Operation                        |                            |           | Not available (1+1 redundant with using OR-ing diode is acceptable.)                                             |                      |                     |                     |                     |                     |                     |      |      |      |      |      |
| GENERAL SPECIFICATIONS                    |                            |           |                                                                                                                  |                      |                     |                     |                     |                     |                     |      |      |      |      |      |
| Operating Temperature                     | [°C]                       |           | Refer to the De-Rating Condition.<br>-20 ~ +71                                                                   |                      |                     |                     |                     |                     |                     |      |      |      |      |      |
| Storage Temperature                       | [°C]                       |           | -20 ~ +85 Except thermal shock                                                                                   |                      |                     |                     |                     |                     |                     |      |      |      |      |      |
| Operating Humidity                        | [%] RH                     |           | 20 ~ 90 Without condensation                                                                                     |                      |                     |                     |                     |                     |                     |      |      |      |      |      |
| Storage Humidity                          | [%] RH                     |           | 20 ~ 90 Without condensation                                                                                     |                      |                     |                     |                     |                     |                     |      |      |      |      |      |
| Withstanding Voltage                      |                            |           | Non Isolated                                                                                                     |                      |                     |                     |                     |                     |                     |      |      |      |      |      |
| Insulation Resistance                     |                            |           | Non Isolated                                                                                                     |                      |                     |                     |                     |                     |                     |      |      |      |      |      |
| Vibration                                 |                            | ※9        | 5 - 10[Hz] / XYZ axis 10[mm], 10 - 550[Hz] / 24.5[m/s <sup>2</sup> ]<br>XYZ axis (non-operating)                 |                      |                     |                     |                     |                     |                     |      |      |      |      |      |
| Shock                                     |                            | ※9        | 294[m/s <sup>2</sup> ] / XYZ axis.                                                                               |                      |                     |                     |                     |                     |                     |      |      |      |      |      |
| Cooling Method                            |                            |           | Convection Cooling                                                                                               |                      |                     |                     |                     |                     |                     |      |      |      |      |      |
| APPLIED STANDARDS                         |                            |           |                                                                                                                  |                      |                     |                     |                     |                     |                     |      |      |      |      |      |
| Safety Standards                          |                            |           | North America : UL60950-1 2nd ed. 2011-12-19 Approved<br>: CAN/CSA-C22.2 No. 60950-1-07 2nd ed. 2011-12 Approved |                      |                     |                     |                     |                     |                     |      |      |      |      |      |
| DIMENSION AND WEIGHT                      |                            |           |                                                                                                                  |                      |                     |                     |                     |                     |                     |      |      |      |      |      |
| Appearance                                |                            |           | On-Board Type                                                                                                    |                      |                     |                     |                     |                     |                     |      |      |      |      |      |
| Dimension                                 | [mm] (HxWxD)               |           | 10 x 32 x 21.4                                                                                                   |                      |                     |                     |                     |                     |                     |      |      |      |      |      |
| Weight                                    | [g] Max.                   |           | 8                                                                                                                |                      |                     |                     |                     |                     |                     |      |      |      |      |      |
| REFERENCE                                 |                            |           |                                                                                                                  |                      |                     |                     |                     |                     |                     |      |      |      |      |      |
| MTBF                                      | [h]                        | ※10       | 564,882.39                                                                                                       | 564,882.39           | 564,882.39          | 564,882.39          | 564,882.39          | 570,125.43          | 570,125.43          |      |      |      |      |      |

※1 Reference : At cold start.

※2 Measured by Measured by a Bayonet type probe. Bandwidth DC-

※3 40.8 to 56[V] DC input voltage.

※4 At 48[V] DC , 0 to 100[%] load.

※5 Up to 8[h] after 1[h].

※6 At rated load , input voltage is changed between 40.8[V] DC and

※7 At 48[V] DC , load is changed between 25[%] and 75[%]

※8 ON : Apply DC2.8V-Input Voltage between PIN "RC" and "OV"

OFF: When PIN "RC" and "OV" is open

Short the PIN "RC" and "+Input Voltage" when not using the RC function

※9 The hole size of the mother board have to be 1.3[φ], Solder

(In Thickness 1.6[mm] CEM-3 mother board).

Mother board have to be Non-resonated.

※10 Standard for recommended reliability estimation of components' count method of JEITA's switching power supply. According to



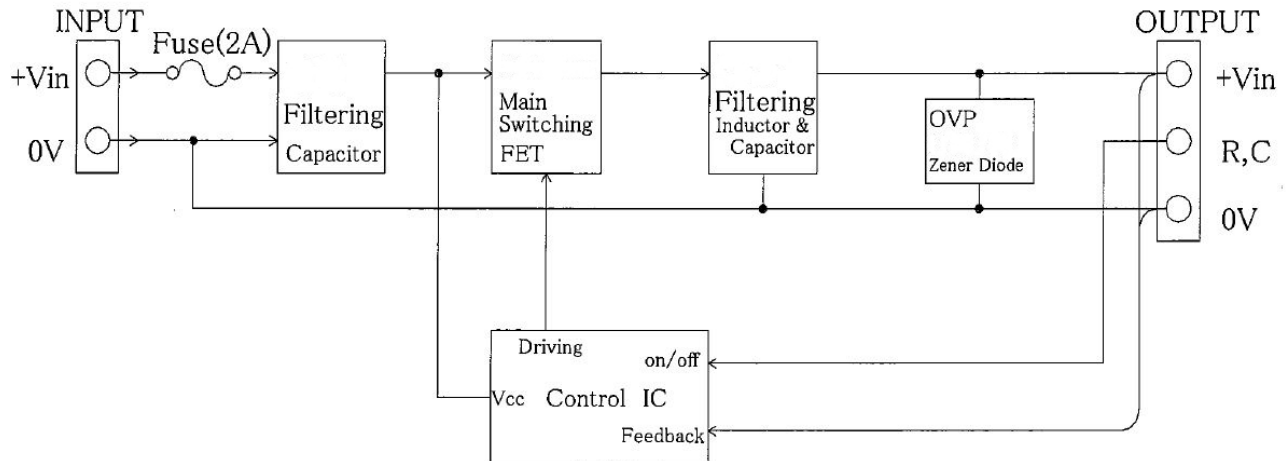
# ETA-USA

16170 Vineyard Blvd. Suite 180 Morgan Hill, CA 95037 <http://www.eta-usa.com>  
Toll-free (US only): 800-ETA-POWR (800-382-7697) Telephone: 408 778-2793 FAX: 408-779-2753

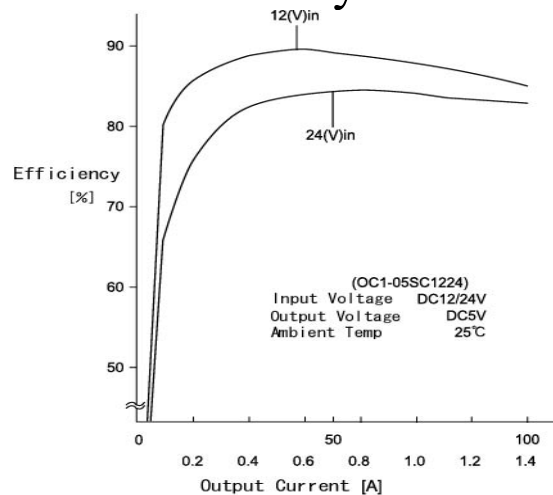


**ETA-USA**  
The Power Professionals

## Block Diagram



## Efficiency Curve



**ETA-USA**

16170 Vineyard Blvd. Suite 180 Morgan Hill, CA 95037 <http://www.eta-usa.com>  
Toll-free (US only): 800-ETA-POWR (800-382-7697) Telephone: 408 778-2793 FAX: 408-779-2753



SPEC SHEET

| Subject                                     | Part number     | Old IC                 | New IC               |
|---------------------------------------------|-----------------|------------------------|----------------------|
| <b>Rated Input current</b>                  | OC1-3.3SC1224u1 | 550/250 [mA]           | 500/300 [mA] Max.    |
|                                             | OC1-05SC1224u1  | 800/350 [mA]           | 800/400 [mA] Max.    |
|                                             | OC1-06SC1224u1  | 950/450 [mA]           | 900/450 [mA] Max.    |
|                                             | OC1-3.3SC2448u1 | 300/150 [mA]           | 300/150 [mA] Max.    |
|                                             | OC1-05SC2448u1  | 450/200 [mA]           | 400/200 [mA] Max.    |
|                                             | OC1-06SC2448u1  | 500/250 [mA]           | 450/250 [mA] Max.    |
|                                             | OC1-09SC2448u1  | 700/350 [mA]           | 650/350 [mA] Max.    |
|                                             | OC1-12SC2448u1  | 850/400 [mA]           | 800/400 [mA] Max.    |
|                                             | OC1-15SC2448u1  | 950/450 [mA]           | 850/450 [mA] Max.    |
|                                             | OC1-24SC48u1    | 750 [mA]               | 700 [mA] Max.        |
| <b>No load Rated Input current</b>          | OC1-3.3SC1224u1 | 4/5 [mA] Typ.          | 10/11 [mA] Typ.      |
|                                             | OC1-05SC1224u1  | 5/3 [mA] Typ.          | 10/11 [mA] Typ.      |
|                                             | OC1-06SC1224u1  | 5/3 [mA] Typ.          | 10/11 [mA] Typ.      |
|                                             | OC1-3.3SC2448u1 | 4/5 [mA] Typ.          | 11/13 [mA] Typ.      |
|                                             | OC1-05SC2448u1  | 2/2 [mA] Typ.          | 11/13 [mA] Typ.      |
|                                             | OC1-06SC2448u1  | 2/2 [mA] Typ.          | 11/13 [mA] Typ.      |
|                                             | OC1-09SC2448u1  | 3/2 [mA] Typ.          | 11/13 [mA] Typ.      |
|                                             | OC1-12SC2448u1  | 4/4 [mA] Typ.          | 12/13 [mA] Typ.      |
|                                             | OC1-15SC2448u1  | 6/4 [mA] Typ.          | 12/13 [mA] Typ.      |
|                                             | OC1-24SC48u1    | 4 [mA] Typ.            | 14 [mA] Typ.         |
| <b>Input current when RC is OFF</b>         | OC1-3.3SC1224u1 | 0.2/0.56 [mA] Typ.     | 1/2 [ $\mu$ A] Typ.  |
|                                             | OC1-05SC1224u1  | 0.24/0.6 [mA] Typ.     | 1/2 [ $\mu$ A] Typ.  |
|                                             | OC1-06SC1224u1  | 0.24/1.15 [mA] Typ.    | 1/2 [ $\mu$ A] Typ.  |
|                                             | OC1-3.3SC2448u1 | 0.39/0.9 [mA] Typ.     | 2/5 [ $\mu$ A] Typ.  |
|                                             | OC1-05SC2448u1  | 0.42/0.93 [mA] Typ.    | 2/5 [ $\mu$ A] Typ.  |
|                                             | OC1-06SC2448u1  | 0.42/0.92 [mA] Typ.    | 2/5 [ $\mu$ A] Typ.  |
|                                             | OC1-09SC2448u1  | 0.37/0.9 [mA] Typ.     | 2/5 [ $\mu$ A] Typ.  |
|                                             | OC1-12SC2448u1  | 0.34/1.47 [mA] Typ.    | 2/5 [ $\mu$ A] Typ.  |
|                                             | OC1-15SC2448u1  | 0.27/1.50 [mA] Typ.    | 2/5 [ $\mu$ A] Typ.  |
|                                             | OC1-24SC48u1    | 0.56 [mA] Typ.         | 5 [ $\mu$ A] Typ.    |
| <b>Input current leakage ripple voltage</b> | OC1-3.3SC1224u1 | 1000/1000 [mVp-p] Typ. | 500/500 [mVp-p] Typ. |
|                                             | OC1-05SC1224u1  | 1000/1000 [mVp-p] Typ. | 700/700 [mVp-p] Typ. |
|                                             | OC1-06SC1224u1  | 1000/1000 [mVp-p] Typ. | 700/700 [mVp-p] Typ. |
|                                             | OC1-3.3SC2448u1 | 700/1000 [mVp-p] Typ.  | 500/500 [mVp-p] Typ. |
|                                             | OC1-05SC2448u1  | 1000/1300 [mVp-p] Typ. | 700/700 [mVp-p] Typ. |
|                                             | OC1-06SC2448u1  | 1200/1800 [mVp-p] Typ. | 700/700 [mVp-p] Typ. |
|                                             | OC1-09SC2448u1  | 1500/2000 [mVp-p] Typ. | 700/700 [mVp-p] Typ. |
|                                             | OC1-12SC2448u1  | 1500/2000 [mVp-p] Typ. | 800/800 [mVp-p] Typ. |
|                                             | OC1-15SC2448u1  | 1500/2500 [mVp-p] Typ. | 900/900 [mVp-p] Typ. |
|                                             | OC1-24SC48u1    | 3000 [mVp-p] Typ.      | 1000 [mVp-p] Typ.    |





|                                        |                 |                     |                  |
|----------------------------------------|-----------------|---------------------|------------------|
| <b>Efficiency</b>                      | OC1-3.3SC1224u1 | 78/75 [%] Typ.      | 84/81 [%] Typ.   |
|                                        | OC1-05SC1224u1  | 84/82 [%] Typ.      | 89/87 [%] Typ.   |
|                                        | OC1-06SC1224u1  | 86/84 [%] Typ.      | 90/88 [%] Typ.   |
|                                        | OC1-3.3SC2448u1 | 74/69 [%] Typ.      | 79/74 [%] Typ.   |
|                                        | OC1-05SC2448u1  | 81/78 [%] Typ.      | 85/82 [%] Typ.   |
|                                        | OC1-06SC2448u1  | 84/80 [%] Typ.      | 87/83 [%] Typ.   |
|                                        | OC1-09SC2448u1  | 88/85 [%] Typ.      | 90/87 [%] Typ.   |
|                                        | OC1-12SC2448u1  | 91/88 [%] Typ.      | 93/90 [%] Typ.   |
|                                        | OC1-15SC2448u1  | 93/90 [%] Typ.      | 95/92 [%] Typ.   |
|                                        | OC1-24SC48u1    | 93 [%] Typ.         | 95 [%] Typ.      |
| <b>Dynamic Load Voltage</b>            | OC1-3.3SC1224u1 | ±500[mV] Max.       | ±500[mV] Max.    |
|                                        | OC1-05SC1224u1  | ±600[mV] Max.       | ±1000[mV] Max.   |
|                                        | OC1-06SC1224u1  | ±600[mV] Max.       | ±1000[mV] Max.   |
|                                        | OC1-3.3SC2448u1 | ±500[mV] Max.       | ±500[mV] Max.    |
|                                        | OC1-05SC2448u1  | ±600[mV] Max.       | ±1000[mV] Max.   |
|                                        | OC1-06SC2448u1  | ±600[mV] Max.       | ±1000[mV] Max.   |
|                                        | OC1-09SC2448u1  | ±600[mV] Max.       | ±1500[mV] Max.   |
|                                        | OC1-12SC2448u1  | ±1000[mV] Max.      | ±1500[mV] Max.   |
|                                        | OC1-15SC2448u1  | ±1000[mV] Max.      | ±1500[mV] Max.   |
|                                        | OC1-24SC48u1    | ±400[mV] Max.       | ±1500[mV] Max.   |
| <b>Remote Control (Add voltage ON)</b> | All model       | ON when 4.5-56V     | ON when 2.8-56V  |
| <b>Remote Control Current</b>          | All model       | 150~1800 [ $\mu$ A] | 5~500 [ $\mu$ A] |
| <b>Block Diagram</b>                   | All model       |                     | See attached     |

