

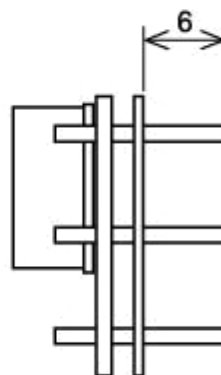
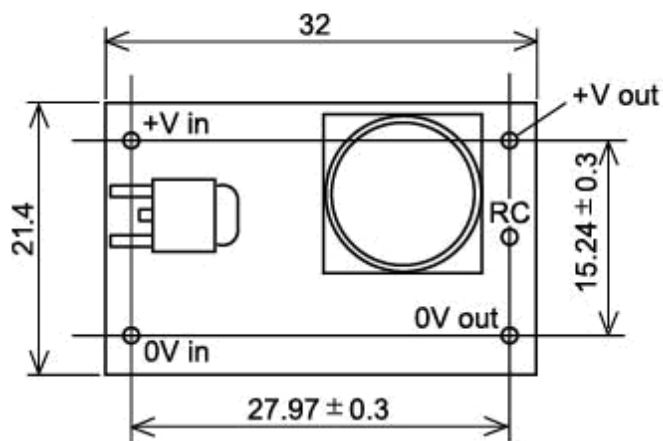


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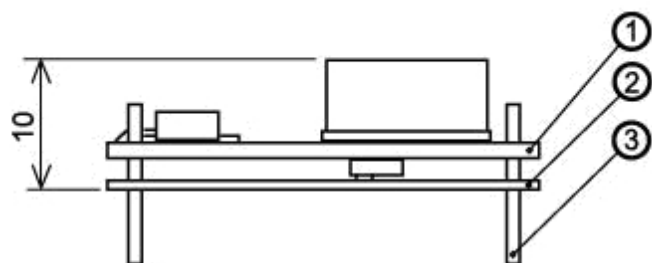


## OC1XX-SCXXXX-A

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                       |                            |                      | -20 ~ +85 Except thermal shock                                                     |      |                 |      |                 |      |
|                                           | [°C]                       |                      |                                                                                    |      |                 |      |                 |      |
| Operating Humidity                        |                            |                      | 20 ~ 90 Without condensation                                                       |      |                 |      |                 |      |
|                                           | [%]RH                      |                      |                                                                                    |      |                 |      |                 |      |
| Storage Humidity                          |                            |                      | 20 ~ 90 Without condensation                                                       |      |                 |      |                 |      |
|                                           | [%]RH                      |                      |                                                                                    |      |                 |      |                 |      |
| 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       |  |
| Rated Input Current                       | [mA] Max.                  |           | 300                                                                                                     | 150                  | 400                 | 200                 | 450                 | 250                 | 650                 | 350      |  |
| 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                  | 12                  | 13       |  |
| Input Current when Remote Control is off. | [μA] Typ.                  |           | 2                                                                                                       | 5                    | 2                   | 5                   | 2                   | 5                   | 2                   | 5        |  |
| Input Leakage Ripple Voltage              | [mVp-p] Typ.               |           | 500                                                                                                     | 500                  | 700                 | 700                 | 700                 | 700                 | 800                 | 800      |  |
| Efficiency                                | [%] Typ.                   |           | 79.0                                                                                                    | 74.0                 | 85.0                | 82.0                | 87.0                | 83.0                | 90.0                | 87.0     |  |
| 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                 | 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<br>: CAN/CSA-C22.2 No. 60950-1-07 2nd ed. 2011-12 Approved |                      |                     |                     |                     |                     |                     | 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



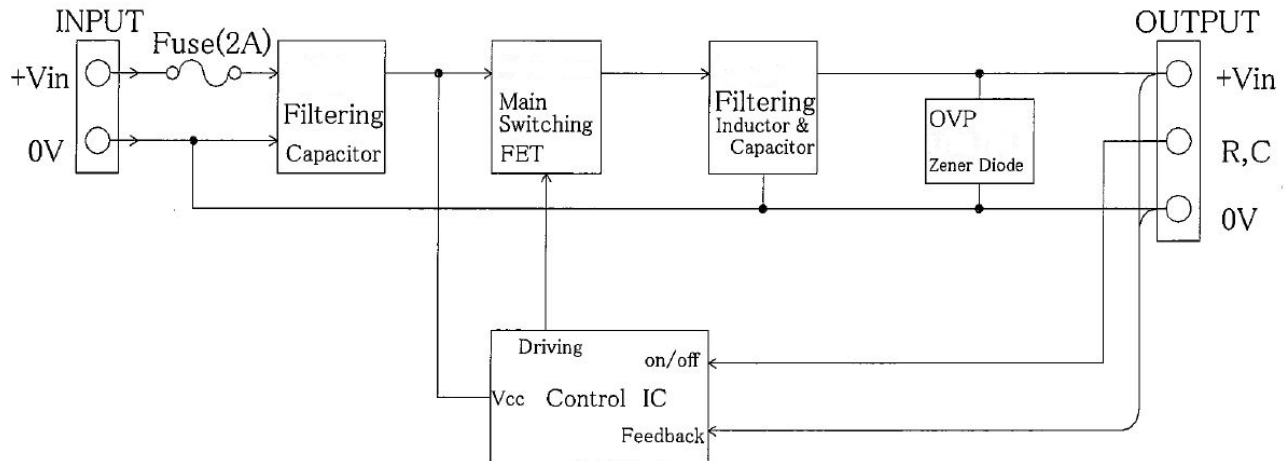
# ETA-USA

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Toll-free (US only): 800-ETA-POWR (800-382-7697) Telephone: 408 778-2793 FAX: 408-779-2753

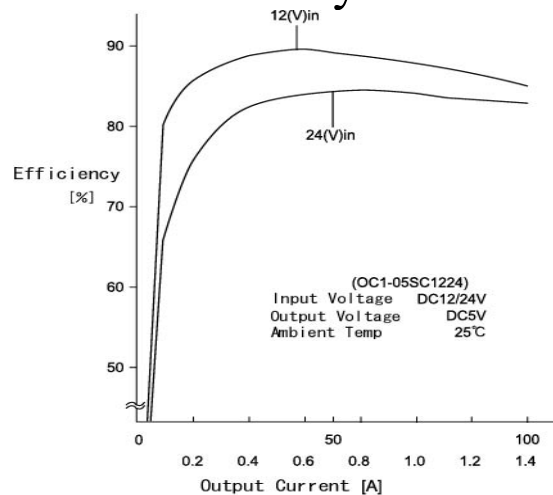


**ETA-USA**  
The Power Professionals

## Block Diagram



## Efficiency Curve



**ETA-USA**

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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     |





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