

# KLEA/KLNA120F

KL  A 120 F -   -

① ② ③ ④ ⑤ ⑥



Recommended EMI/EMC Filter  
NAC-04-472-D



High voltage pulse noise type : NAP series  
Low leakage current type : NAM series  
\*The EMI/EMC Filter is recommended to connect with several devices.

- ① Series name  
KLE : Euro Style I/O Terminals  
KLN : Barrier Blocks Style I/O Terminals
- ② Single output
- ③ Output wattage
- ④ Universal input
- ⑤ Output voltage
- ⑥ Option  
C : with Coating  
N2 : Screw mounting

|                       |                  |                  |
|-----------------------|------------------|------------------|
| MODEL                 | KLEA/KLNA120F-24 | KLEA/KLNA120F-48 |
| MAX OUTPUT WATTAGE[W] | 120              | 120              |
| DC OUTPUT             | 24V 5A           | 48V 2.5A         |

## SPECIFICATIONS

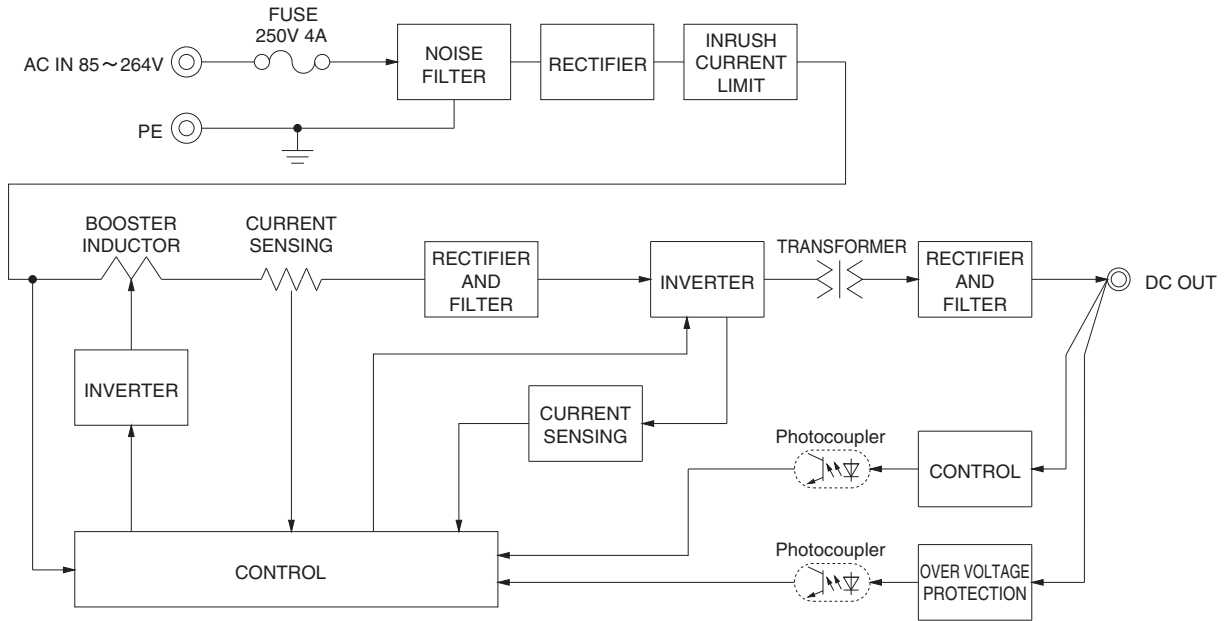
|                                    | MODEL   | KLEA/KLNA120F-24   | KLEA/KLNA120F-48       |        |
|------------------------------------|---|--|------------------------|--------|
| INPUT                              | VOLTAGE[V]  | AC85 - 264 1 φ (Output derating is required) *9  |                        |        |
|                                    | CURRENT[A]  | ACIN 115V  | 1.2typ                 |        |
|                                    |   | ACIN 230V  | 0.6typ                 |        |
|                                    | FREQUENCY[Hz]   | 50 / 60 (47 - 63)  |                        |        |
|                                    | EFFICIENCY[%]   | ACIN 115V  | 86.5typ                |        |
|                                    |   | ACIN 230V  | 88.0typ                |        |
|                                    | POWER FACTOR  | ACIN 115V  | 0.98typ                |        |
|                                    |   | ACIN 230V  | 0.90typ                |        |
| INRUSH CURRENT[A]                  | ACIN 115V   | 20typ (Io=100%)(at cold start Ta=25°C)   |                        |        |
|                                    | *1 ACIN 230V  | 40typ (Io=100%)(at cold start Ta=25°C)   |                        |        |
| LEAKAGE CURRENT[ma]                | 0.45 / 0.75max (ACIN 100V / 240V 60Hz, Io=100%, According to IEC60950-1 and DEN-AN) |  |                        |        |
| OUTPUT                             | VOLTAGE[V]  | 24   | 48                     |        |
|                                    | CURRENT[A]  | 5  | 2.5                    |        |
|                                    | LINE REGULATION[mV]   | *2 96max (Io=30-100%) *8   | 192max (Io=30-100%) *8 |        |
|                                    | LOAD REGULATION[mV]   | *2 150max (Io=30-100%) *8  | 300max (Io=30-100%) *8 |        |
|                                    | RIPPLE[mVp-p]   | 0 to +70°C   | 150max                 | 150max |
|                                    |   | -20 - 0°C  | 240max                 | 240max |
|                                    |   | Io=0 - 30%   | 500max                 | 650max |
|                                    | RIPPLE NOISE[mVp-p]   | 0 to +70°C   | 180max                 | 180max |
|                                    |   | -20 - 0°C  | 300max                 | 300max |
|                                    |   | Io=0 - 30%   | 500max                 | 650max |
|                                    | TEMPERATURE REGULATION[mV]  | 0 to +70°C   | 240max                 | 480max |
|                                    |   | -20 to +70°C   | 290max                 | 600max |
|                                    | DRIFT[mV]   | *4 96max   | 192max                 |        |
|                                    | START-UP TIME[ms]   | 500typ (ACIN 115V, Io=100%)  |                        |        |
| HOLD-UP TIME[ms]                   | 20typ (ACIN 115V, Io=100%)  |  |                        |        |
| OUTPUT VOLTAGE ADJUSTMENT RANGE[V] | 21.60 to 26.40  | 43.20 to 52.80   |                        |        |
| OUTPUT VOLTAGE SETTING[V]          | 24.00 to 24.96  | 48.00 to 49.92   |                        |        |
| PROTECTION CIRCUIT AND OTHERS      | OVERCURRENT PROTECTION  | Works over 105% of rating and recovers automatically   |                        |        |
|                                    | OVERVOLTAGE PROTECTION[V]   | 27.60 to 33.60   | 54.00 to 67.20         |        |
|                                    | DC_OK LAMP  | LED (Green)  |                        |        |
| ISOLATION                          | INPUT-OUTPUT  | AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)   |                        |        |
|                                    | INPUT-PE  | AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)   |                        |        |
|                                    | OUTPUT-PE   | AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At Room Temperature)  |                        |        |
| ENVIRONMENT                        | OPERATING TEMP., HUMID. AND ALTITUDE  | -20 to +70°C (Required to Derating), 20 - 90%RH (Non condensing)   |                        |        |
|                                    | STORAGE TEMP., HUMID. AND ALTITUDE  | -30 to +85°C, 20 - 90%RH (Non condensing)  |                        |        |
|                                    | VIBRATION   | *7 10 - 55Hz, 19.6m/s <sup>2</sup> (2G), 3minutes period, 60 minutes along Z axis (Non operating, mounted on DIN Rail) |                        |        |
|                                    | IMPACT  | 196.1m/s <sup>2</sup> (20G), 11ms, once each X, Y and Z axis (Packing state)   |                        |        |
| SAFETY AND NOISE REGULATIONS       | AGENCY APPROVALS  | UL60950-1, C-UL (CSA60950-1), EN60950-1, UL508, Complies with DEN-AN   |                        |        |
|                                    | CONDUCTED NOISE   | Complies with FCC-B, VCCI-B, CISPR22-B, EN55011-B, EN55022-B   |                        |        |
|                                    | HARMONIC ATTENUATOR   | Complies with IEC61000-3-2 (Class A) *5  |                        |        |
| OTHERS                             | CASE SIZE   | *6 38 × 124 × 117mm (W × H × D) [1.5 × 4.88 × 4.61 inches]   |                        |        |
|                                    | WEIGHT  | 580g max   |                        |        |
|                                    | COOLING METHOD  | Convection / Forced air  |                        |        |

\*1 The value is primary surge. The current of input surge to a built-in EMI/EMC Filter (0.2ms or less) is excluded.  
\*2 Please contact us about dynamic load and input response.  
\*3 This is the value that measured on measuring board with capacitor of 22 μF and 0.1 μF at 150mm from output terminal.  
Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN: RM103).  
Please refer to the instruction manual 2.5.

\*4 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant at the rated input/output.  
\*5 Please contact us about another class.  
\*6 Case size contains neither the umbo.  
\*7 Only as standard mounting orientation (A). Refer to the instruction manual 4.1. If install other than standard mounting orientation (A), please fix the power supply for withstand the vibration and impact.

\*8 Burst operation at 30% load or less.  
\*9 Please contact us about DC input voltage.  
\* To meet the specifications. Do not operate over-loaded condition.  
\* A sound may occur from power supply at light or peak loading.

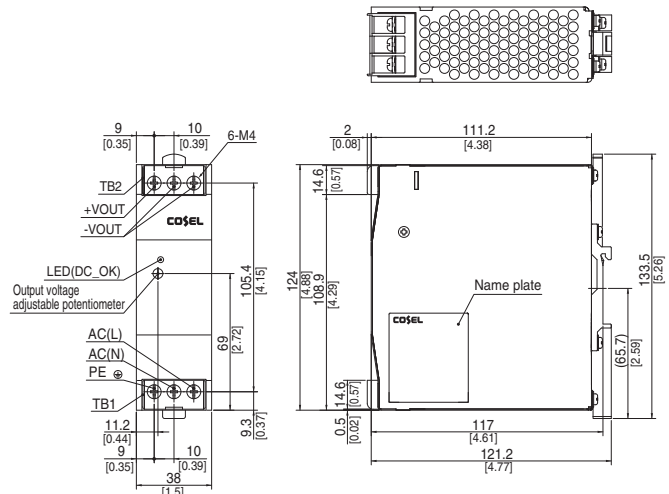
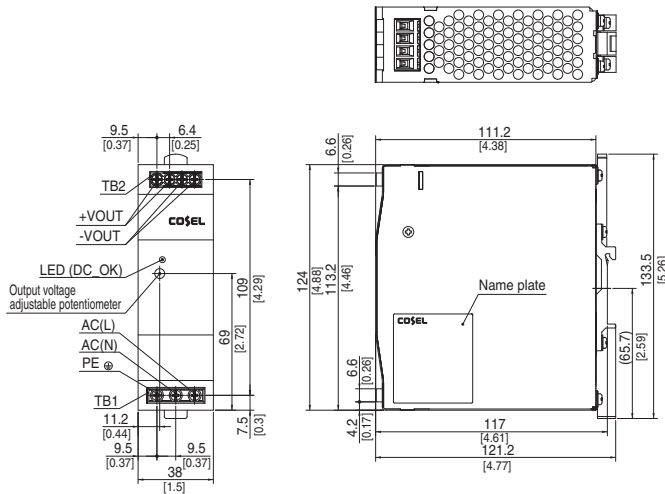
Block diagram



External view

<KLEA120F(Euro Style I/O Terminals)>

<KLNA120F(Barrier Blocks Style I/O Terminals)>



- ※ Tolerance : ±1.5 [±0.06]
- ※ Weight : 580g max
- ※ PCB Material/thickness : FR-4 / 1.6mm [0.06]
- ※ Chassis material : Aluminum
- ※ Case material : Stainless steel
- ※ Din rail attachment material : Aluminum, Nylon
- ※ Dimensions in mm, [ ] = inches
- ※ Screw tightening torque : 1N · m max

- ※ Tolerance : ±1.5 [±0.06]
- ※ Weight : 580g max
- ※ PCB Material/thickness : FR-4 / 1.6mm [0.06]
- ※ Chassis material : Aluminum
- ※ Case material : Stainless steel
- ※ Din rail attachment material : Aluminum, Nylon
- ※ Dimensions in mm, [ ] = inches
- ※ Screw tightening torque : 1.6N · m max

# KLEA/KLNA240F

KL  A 240 F -  -

① ② ③ ④ ⑤ ⑥



Recommended EMI/EMC Filter  
NAC-06-472-D



High voltage pulse noise type : NAP series  
Low leakage current type : NAM series  
\*The EMI/EMC Filter is recommended to connect with several devices.

- ① Series name  
KLE : Euro Style I/O Terminals  
KLN : Barrier Blocks Style I/O Terminals
- ② Single output
- ③ Output wattage
- ④ Universal input
- ⑤ Output voltage
- ⑥ Option  
C : with Coating  
N2 : Screw mounting

|                       |                  |                  |
|-----------------------|------------------|------------------|
| MODEL                 | KLEA/KLNA240F-24 | KLEA/KLNA240F-48 |
| MAX OUTPUT WATTAGE[W] | 240              | 240              |
| DC OUTPUT             | 24V 10A          | 48V 5A           |

## SPECIFICATIONS

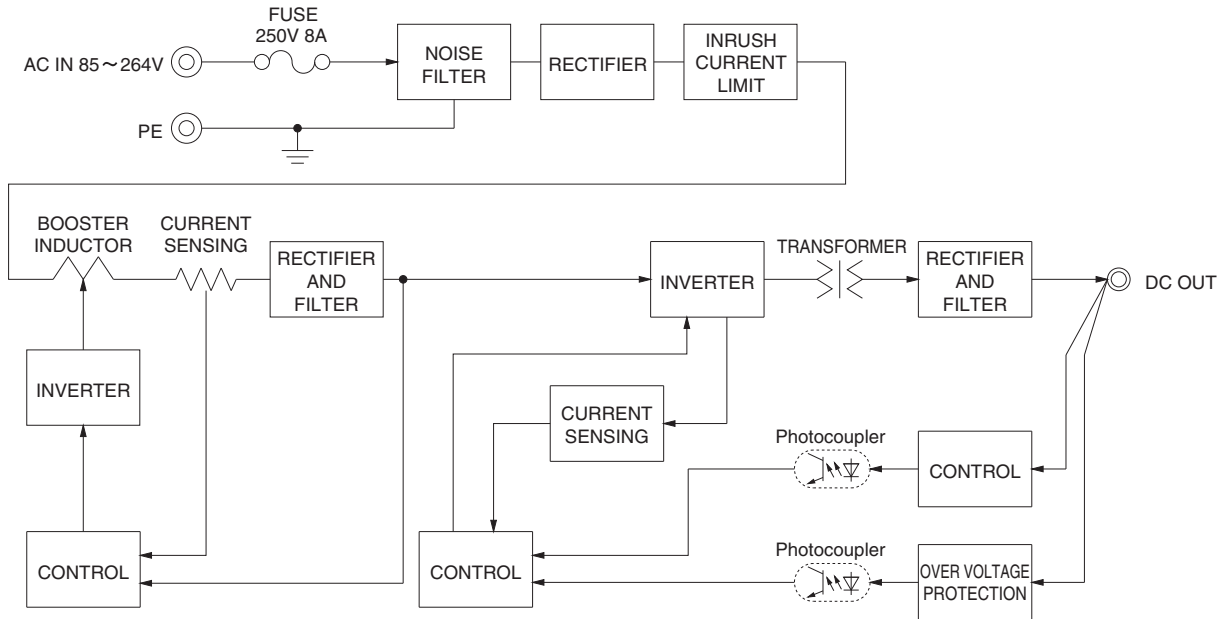
|                                    | MODEL  | KLEA/KLNA240F-24   | KLEA/KLNA240F-48 |        |
|------------------------------------|--|--|------------------|--------|
| INPUT                              | VOLTAGE[V]   | AC85 - 264 1 φ (Output derating is required) *8  |                  |        |
|                                    | CURRENT[A]   | ACIN 115V  | 2.4typ           |        |
|                                    |  | ACIN 230V  | 1.3typ           |        |
|                                    | FREQUENCY[Hz]  | 50 / 60 (47 - 63)  |                  |        |
|                                    | EFFICIENCY[%]  | ACIN 115V  | 88typ            |        |
|                                    |  | ACIN 230V  | 90typ            |        |
|                                    | POWER FACTOR   | ACIN 115V  | 0.98typ          |        |
|                                    |  | ACIN 230V  | 0.90typ          |        |
| INRUSH CURRENT[A]                  | ACIN 115V  | 20typ (I <sub>o</sub> =100%)(at cold start Ta=25°C)  |                  |        |
|                                    | *1 ACIN 230V   | 40typ (I <sub>o</sub> =100%)(at cold start Ta=25°C)  |                  |        |
| LEAKAGE CURRENT[ma]                | 0.45 / 0.75max (ACIN 100V / 240V 60Hz, I <sub>o</sub> =100%, According to IEC60950-1 and DEN-AN) |  |                  |        |
| OUTPUT                             | VOLTAGE[V]   | 24   | 48               |        |
|                                    | CURRENT[A]   | 10   | 5                |        |
|                                    | LINE REGULATION[mV]  | *2 96max   | 192max           |        |
|                                    | LOAD REGULATION[mV]  | *2 150max  | 300max           |        |
|                                    | RIPPLE[mVp-p]  | *3 0 to +70°C  | 150max           | 150max |
|                                    |  | -20 - 0°C  | 240max           | 240max |
|                                    | RIPPLE NOISE[mVp-p]  | *3 0 to +70°C  | 180max           | 180max |
|                                    |  | -20 - 0°C  | 300max           | 300max |
|                                    | TEMPERATURE REGULATION[mV]   | 0 to +70°C   | 240max           | 480max |
|                                    |  | -20 to +70°C   | 290max           | 600max |
|                                    | DRIFT[mV]  | *4 96max   | 192max           |        |
|                                    | START-UP TIME[ms]  | 500typ (ACIN 115V, I <sub>o</sub> =100%)   |                  |        |
|                                    | HOLD-UP TIME[ms]   | 20typ (ACIN 115V, I <sub>o</sub> =100%)  |                  |        |
| OUTPUT VOLTAGE ADJUSTMENT RANGE[V] | 21.60 to 26.40   | 43.20 to 52.80   |                  |        |
| OUTPUT VOLTAGE SETTING[V]          | 24.00 to 24.96   | 48.00 to 49.92   |                  |        |
| PROTECTION CIRCUIT AND OTHERS      | OVERCURRENT PROTECTION   | Works over 105% of rating and recovers automatically   |                  |        |
|                                    | OVERVOLTAGE PROTECTION[V]  | 27.60 to 33.60   | 54.00 to 67.20   |        |
|                                    | DC_OK LAMP   | LED (Green)  |                  |        |
| ISOLATION                          | INPUT-OUTPUT   | AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)   |                  |        |
|                                    | INPUT-PE   | AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)   |                  |        |
|                                    | OUTPUT-PE  | AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At Room Temperature)  |                  |        |
| ENVIRONMENT                        | OPERATING TEMP.,HUMID.AND ALTITUDE   | -20 to +70°C (Required to Derating), 20 - 90%RH (Non condensing)   |                  |        |
|                                    | STORAGE TEMP.,HUMID.AND ALTITUDE   | -30 to +85°C, 20 - 90%RH (Non condensing)  |                  |        |
|                                    | VIBRATION  | *7 10 - 55Hz, 19.6m/s <sup>2</sup> (2G), 3minutes period, 60 minutes along Z axis (Non operating, mounted on DIN Rail) |                  |        |
|                                    | IMPACT   | 196.1m/s <sup>2</sup> (20G), 11ms, once each X, Y and Z axis (Packing state)   |                  |        |
| SAFETY AND NOISE REGULATIONS       | AGENCY APPROVALS   | UL60950-1, C-UL (CSA60950-1), EN60950-1, UL508, Complies with DEN-AN   |                  |        |
|                                    | CONDUCTED NOISE  | Complies with FCC-B, VCCI-B, CISPR22-B, EN55011-B, EN55022-B   |                  |        |
|                                    | HARMONIC ATTENUATOR  | Complies with IEC61000-3-2 (Class A) *5  |                  |        |
| OTHERS                             | CASE SIZE  | *6 50 × 124 × 117mm (W × H × D) [1.97 × 4.88 × 4.61 inches]  |                  |        |
|                                    | WEIGHT   | 750g max   |                  |        |
|                                    | COOLING METHOD   | Convection / Forced air  |                  |        |

\*1 The value is primary surge. The current of input surge to a built-in EMI/EMC Filter(0.2ms or less)is excluded.  
\*2 Please contact us about dynamic load and input response.  
\*3 This is the value that measured on measuring board with capacitor of 22 μF and 0.1 μF at 150mm from output terminal.  
Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN: RM103).  
Please refer to the instruction manual 2.5.

\*4 Drift is the change in DC output for a eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant at the rated input/output.  
\*5 Please contact us about another class.  
\*6 Case size contains neither the umbo.  
\*7 Only as standard mounting orientation (A). Refer to the instruction manual 4.1. If install other than standard mounting orientation (A), please fix the power supply for withstand the vibration and impact.

\*8 Please contact us about DC input voltage.  
\* To meet the specifications. Do not operate over-loaded condition.  
\* A sound may occur from power supply at light or peak loading.

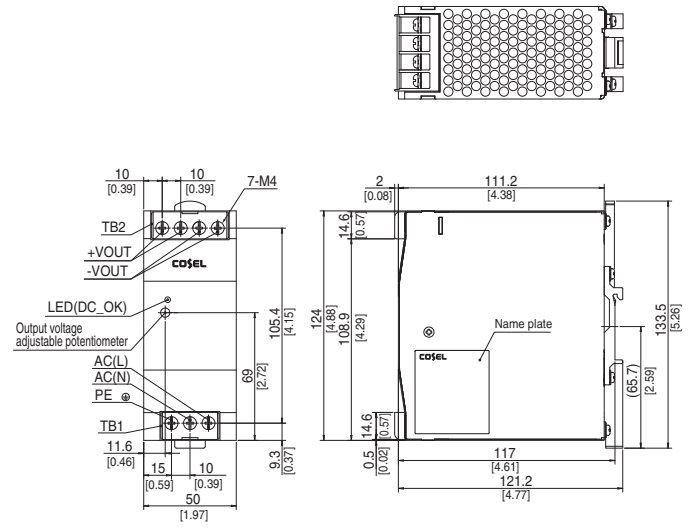
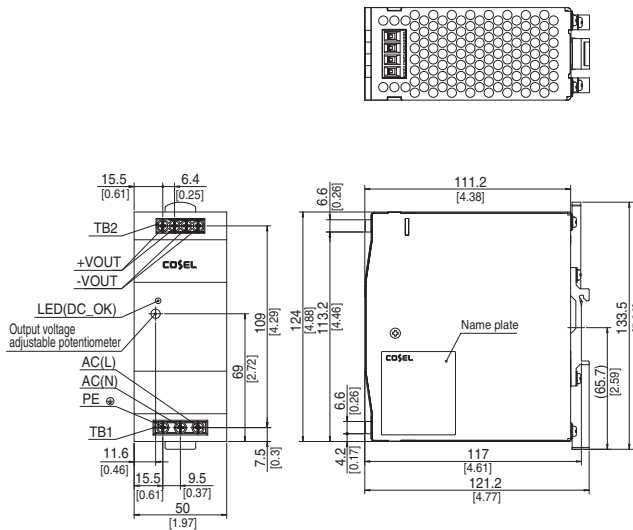
Block diagram



External view

<KLEA240F(Euro Style I/O Terminals)>

<KLNA240F(Barrier Blocks Style I/O Terminals)>



- ※ Tolerance : ±1.5 [±0.06]
- ※ Weight : 750g max
- ※ PCB Material/thickness : FR-4 / 1.6mm [0.06]
- ※ Chassis material : Aluminum
- ※ Case material : Stainless steel
- ※ Din rail attachment material : Aluminum, Nylon
- ※ Dimensions in mm, [ ] = inches
- ※ Screw tightening torque : 1N · m max

- ※ Tolerance : ±1.5 [±0.06]
- ※ Weight : 750g max
- ※ PCB Material/thickness : FR-4 / 1.6mm [0.06]
- ※ Chassis material : Aluminum
- ※ Case material : Stainless steel
- ※ Din rail attachment material : Aluminum, Nylon
- ※ Dimensions in mm, [ ] = inches
- ※ Screw tightening torque : 1.6N · m max

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Cosel:

[KLEA240F-48](#) [KLEA120F-48](#) [KLEA240F-24](#) [KLEA120F-24](#)



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

**Телефон:** 8 (812) 309 58 32 (многоканальный)

**Факс:** 8 (812) 320-02-42

**Электронная почта:** [org@eplast1.ru](mailto:org@eplast1.ru)

**Адрес:** 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.