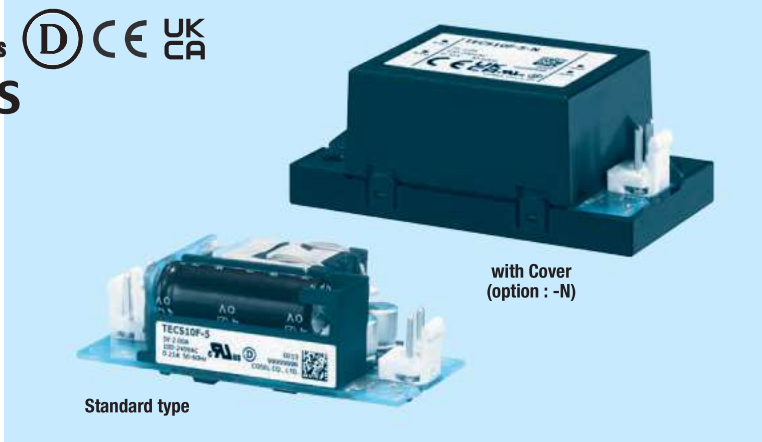




Example recommended EMI/EMC filter  
EAM-03-000



High voltage pulse noise type : EAP series  
150KHz-1MHz (To safely ground the secondary side) : EAC series

\* A higher current rating EMI/EMC filter may be recommended in view of the other devices that could be connected in parallel with the power supply.

- ① Series name
- ② Single output
- ③ Output wattage
- ④ Universal input
- ⑤ Output voltage
- ⑥ Optional \*1  
E2: Low leakage current  
Y : with Potentiometer  
H : with output peak current (12V,24V)  
N: with cover  
For option details, refer to Instruction Manual 6.

□ Class II

This power supply is manufactured by SMD technology. The stress to PCB like twisting or bending causes the defect of the unit, so handle the unit with care.  
\* Make sure necessary tests will be carried out on your end equipment with the power supply installed in accordance with any required EMC/EMI regulations.

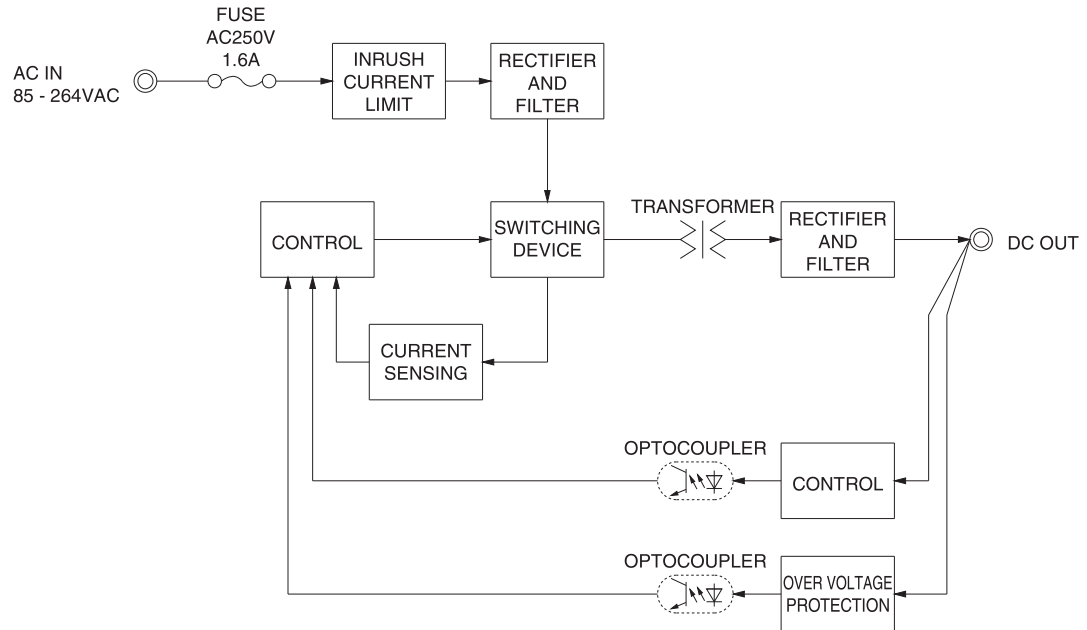
| MODEL                 | TECS10F-5 | TECS10F-12 | TECS10F-12-H     | TECS10F-15 | TECS10F-24 | TECS10F-24-H     |
|-----------------------|-----------|------------|------------------|------------|------------|------------------|
| MAX OUTPUT WATTAGE[W] | 10.0      | 10.2       | 10.2 (15.0)      | 10.5       | 10.8       | 10.8 (15.6)      |
| DC OUTPUT             | 5V 2.0A   | 12V 0.85A  | 12V 0.85 (1.25)A | 15V 0.7A   | 24V 0.45A  | 24V 0.45 (0.65)A |

## SPECIFICATIONS

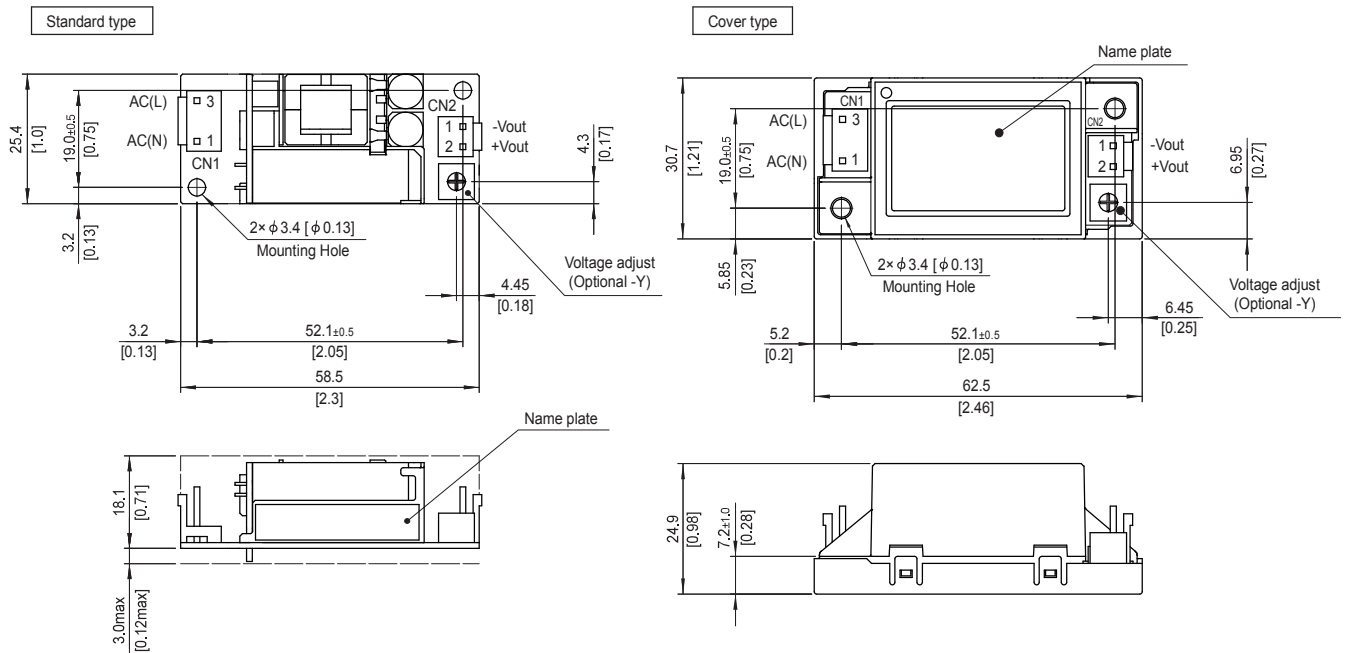
| MODEL                         | TECS10F-5                                                                                               | TECS10F-12                                                                                          | TECS10F-12-H   | TECS10F-15       | TECS10F-24     | TECS10F-24-H   |
|-------------------------------|---------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|----------------|------------------|----------------|----------------|
| INPUT                         | VOLTAGE[VAC] *2 85 - 264 1 φ (Refer to "Derating" and Instruction Manual 1.1)                           |                                                                                                     |                |                  |                |                |
|                               | CURRENT[A]                                                                                              | ACIN 100V                                                                                           | 0.21typ        |                  |                |                |
|                               |                                                                                                         | ACIN 230V                                                                                           | 0.12typ        |                  |                |                |
|                               | FREQUENCY[Hz] 50 / 60 (45 - 440)                                                                        |                                                                                                     |                |                  |                |                |
|                               | EFFICIENCY[%]                                                                                           | ACIN 100V                                                                                           | 82.5typ        | 88.0typ          | 88.0typ        | 90.0typ        |
|                               |                                                                                                         | ACIN 230V                                                                                           | 84.0typ        | 88.0typ          | 88.0typ        | 90.0typ        |
|                               | INRUSH CURRENT[A] ACIN 100V 15typ (I <sub>o</sub> =100%) Ta=25°C at cold start                          |                                                                                                     |                |                  |                |                |
| OUTPUT                        | ACIN 230V 35typ (I <sub>o</sub> =100%) Ta=25°C at cold start                                            |                                                                                                     |                |                  |                |                |
|                               | LEAKAGE CURRENT[ma] 0.1max (ACIN 264V, 60Hz, I <sub>o</sub> =100%, According to IEC62368-1, and DEN-AN) |                                                                                                     |                |                  |                |                |
|                               | VOLTAGE[V]                                                                                              | 5                                                                                                   | 12             | 12               | 15             | 24             |
|                               | CURRENT[A] *2                                                                                           | 2.0                                                                                                 | 0.85           | 0.85 (Peak 1.25) | 0.7            | 0.45           |
|                               | LINE REGULATION[mV] *3                                                                                  | 20max                                                                                               | 48max          | 48max            | 60max          | 96max          |
|                               | LOAD REGULATION[mV] *3                                                                                  | 40max                                                                                               | 100max         | 100max           | 120max         | 150max         |
|                               | RIPPLE[mVp-p] *4                                                                                        | 20 to +60°C *5                                                                                      | 200max         | 200max           | 200max         | 200max         |
|                               | RIPPLE NOISE[mVp-p] *4                                                                                  | -20 to +60°C *5                                                                                     | 240max         | 240max           | 240max         | 240max         |
|                               |                                                                                                         | 0 to +60°C *5                                                                                       | 50max          | 120max           | 120max         | 150max         |
|                               | TEMPERATURE REGULATION[mV]                                                                              | -20 to +60°C *5                                                                                     | 60max          | 160max           | 160max         | 200max         |
|                               |                                                                                                         |                                                                                                     | 20max          | 48max            | 48max          | 60max          |
|                               | DRIFT[mV] *6                                                                                            | 20max                                                                                               | 48max          | 48max            | 60max          | 96max          |
|                               | START-UP TIME[ms]                                                                                       | 80typ (ACIN 100/230V, I <sub>o</sub> =100%)                                                         |                |                  |                |                |
|                               | HOLD-UP TIME[ms]                                                                                        | 15typ (ACIN 100V, I <sub>o</sub> =100%) / 110typ (ACIN 230V, I <sub>o</sub> =100%)                  |                |                  |                |                |
|                               | OUTPUT VOLTAGE ADJUSTMENT RANGE[V] *9                                                                   | Fixed ("Y" option is available for adjusting output voltage between ±10%)                           |                |                  |                |                |
| PROTECTION CIRCUIT AND OTHERS | OUTPUT VOLTAGE SETTING[V]                                                                               | 4.90 to 5.30                                                                                        | 11.50 to 12.50 | 11.50 to 12.50   | 14.50 to 15.50 | 23.00 to 25.00 |
|                               | OVERCURRENT PROTECTION                                                                                  | Works over 105% of rating (works over 101% of peak current at option -H) and recovers automatically |                |                  |                |                |
|                               | OVERVOLTAGE PROTECTION[V]                                                                               | 5.75 to 7.00                                                                                        | 13.80 to 16.80 | 13.80 to 16.80   | 17.25 to 21.00 | 27.60 to 33.60 |
|                               | OPERATING INDICATION                                                                                    | Not provided                                                                                        |                |                  |                |                |
| ISOLATION                     | REMOTE SENSING                                                                                          | Not provided                                                                                        |                |                  |                |                |
|                               | INPUT-OUTPUT                                                                                            | 3,000VAC 1minute, Cutoff current = 10mA, 500VDC 100MΩ min (At Room Temperature)                     |                |                  |                |                |
| ENVIRONMENT                   | OPERATING TEMP., HUMID. AND ALTITUDE *2                                                                 | -20 to +85°C, 20 - 90%RH (Non condensing), (Refer to "Derating"), 5,000m (16,500feet) max           |                |                  |                |                |
|                               | STORAGE TEMP., HUMID. AND ALTITUDE                                                                      | -40 to +85°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max                                  |                |                  |                |                |
|                               | VIBRATION                                                                                               | 10 - 55Hz, 19.6m/s <sup>2</sup> (2G), 3minutes period, 60minutes each along X, Y and Z axis         |                |                  |                |                |
| SAFETY AND NOISE REGULATIONS  | IMPACT                                                                                                  | 196.1m/s <sup>2</sup> (20G), 11ms, once each X, Y and Z axis                                        |                |                  |                |                |
|                               | AGENCY APPROVALS                                                                                        | UL62368-1, C-UL (equivalent to CAN/CSA-C22.2No.62368-1), EN62368-1, Complies with DEN-AN            |                |                  |                |                |
|                               | CONDUCTED NOISE *7                                                                                      | Complies with CISPR11-B, CISPR32-B, EN55011-B, EN55032-B, FCC Part 15-B, FCC Part 18-B, VCCI-B      |                |                  |                |                |
| OTHERS                        | HARMONIC ATTENUATOR *8                                                                                  | Complies with IEC61000-3-2 (Class A) (No built-in power factor correction)                          |                |                  |                |                |
|                               | CASE SIZE/WEIGHT                                                                                        | 25.4 X 21.1 X 58.5mm [1.00 X 0.83 X 2.30 inches] (W X H X D) / 35g max max(with cover : 50g max)    |                |                  |                |                |
| OTHERS                        | COOLING METHOD *2                                                                                       | Convection/Forced air (Requires external fan) (Refer to "Derating")                                 |                |                  |                |                |

- \*1 The listed options may affect the published standard specifications. Please contact us for detailed product specifications.
- \*2 Derating is required. ( ) means peak current. There is a possibility that an internal device is damaged when the specification is exceeded. Please contact us about the detail.
- \*3 At low load conditions, the burst mode operation will start. To check load regulation, you will need to measure the characteristics at average mode with instruments.
- \*4 This is the value that measured on measuring board with capacitor of 22 μF and 0.1 μF at 150mm from output terminal. (Refer to Instruction Manual)
- \*5 5V output product, the maximum temperature of 50°C.
- \*6 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.
- \*7 When secondary circuit will be connected to earth, the spec will be changed. (Refer to Instruction Manual 2)
- \*8 Please contact us about another class. When two or more units are operating it may not comply with the IEC61000-3-2. Please contact us for details.
- \*9 5V output product, with an adjustable output voltage range of -5% - +10%.
- \* To meet the specification, do not operate overload condition.
- \* Parallel operation is not possible.
- \* Sound noise may be emitted from the power supply depending on operating conditions.

## Block diagram



## External view



Mating connector and terminal of CN1, CN2

| I/O Connector | Mating connector | Terminal                                     | Mfr.   |
|---------------|------------------|----------------------------------------------|--------|
| CN1 B2P3-VH   | VHR-3N           | Chain : SVH-21T-P1.1<br>Loose : BVH-21T-P1.1 | J.S.T. |
| CN2 B2P-VH    | VHR-2N           | Chain : SVH-21T-P1.1<br>Loose : BVH-21T-P1.1 | J.S.T. |

- ※ Dimensions in mm, [ ]=inches
- ※ Tolerance :  $\pm 1.5$  [ $\pm 0.06$ ]
- ※ Weight : 35g max (with cover : 50g max)
- ※ PCB Material / thickness : FR-4 / 1.1mm [0.04]
- ※ Optional Case Material: PBT
- ※ There are two mounting holes.

Specifications are subject to change without notice, E&OE. ALL PSU Terms & Conditions apply.

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