## MODEL NUMBER, RATINGS

| MODEL NUMBER | Input Ratings | Output Voltage and Current ＊1 | | | | | |
|---|---|---|---|---|---|---|---|
| | | CH1 | | CH2 | | CH3 | |
| | | Voltage(V) | Current(A) | Voltage(V) | Current(A) | Voltage(V) | Current(A) |
| KLT15F-0522 | 115-230V 50-60Hz | +5 | 0～2 | +12 | 0～0.5 | -12 | 0～0.5 |
| KLT15F-0533 | 115-230V 50-60Hz | +5 | 0～2 | +15 | 0～0.45 | -15 | 0～0.45 |

＊1: Total output wattage not exceed 15W.

## MAXIMUM RATINGS

| ITEMS | | MIN | | MAX | UNIT |
|---|---|---|---|---|---|
| Input Voltage | | 85 | — | 264 | Vac |
| Input Frequency | | 47 | — | 63 | Hz |
| Output Power | | 0 | — | 15 | W |
| Isolation Resistance | Pri. - Sec. DC 500V | — | 100 | — | MΩ |
| | Pri. - Case DC 500V | — | 100 | — | |
| | Sec. - Case DC 500V | — | 100 | — | |
| Isolation Voltage | Pri. - Sec. 10mA | — | 3000 | — | Vac 1min. |
| | Pri. - Case 10mA | — | 1500 | — | |
| | Sec. - Case 20mA | — | 500 | — | |
| Operating temperature | ＊2 | 0 | — | 60 | ℃ |
| Storage Temperature | | -20 | — | 85 | ℃ |
| Humidity | ＊3 | 20 | — | 85 | %Rh |

＊2: See derating curve FIG.1.

＊3: No condensing

## Electrical Characteristics (Common Items)

Ta=25℃, AC115/230V, 50/60Hz, TYP Output

| ITEMS | CONDITIONS | MIN | TYP | MAX | UNIT |
|---|---|---|---|---|---|
| Input Regulation | Vin=85～132, 170～264 | — | — | 50 | mV |
| Input Current | Vin=100V | — | 0.37 | — | A |
| | Vin=230V | — | 0.2 | — | A |
| In-rush Current | Vin=100V, 50Hz | — | 10 | — | A |
| | Vin=230V, 50Hz | — | 19 | — | A |
| Rise-up Time | Vin=100V | — | — | 100 | ms |
| | Vin=230V | — | — | 100 | ms |
| Hold-up Time | CH1 | — | 20 | — | ms |
| | CH2, CH3 | — | 20 | — | ms |
| Leakage Current | Vin=100V, 60Hz | — | — | 0.5 | mArms |
| | Vin=230V, 60Hz | — | — | 0.75 | mArms |
| OCP point | | 105 | — | — | % |
| Drift | 8H, after 1H | — | — | 0.5%+15 | mV |
| Tem. coefficient | | — | — | 0.02 | %/℃ |

## Electrical Characteristics (Model by)

KLT15F-0522 Ta=25℃, AC115/230V, 50/60Hz, TYP Output

| ITEMS | CONDITION | | MIN | TYP | MAX | UNIT |
|---|---|---|---|---|---|---|
| OVP point | CH1 only | | 5.75 | — | — | V |
| Output Voltage | | CH1 | — | 5.0 | 5.25 | V |
| | | CH2 | 11.4 | 12.0 | 12.6 | V |
| | | CH3 | 11.4 | 12.0 | 12.6 | V |
| Output Current | *4 | CH1 | — | 1.5 | 2.0 | A |
| | | CH2 | — | 0.35 | 0.5 | A |
| | | CH3 | — | 0.28 | 0.5 | A |
| Load Regulation | | CH1 | — | — | 100 | mV |
| | | CH2 | — | — | 120 | mV |
| | | CH3 | — | — | 120 | mV |
| Ripple | BW=DC～100MHz | CH1 | — | — | 100 | mV |
| | | CH2 | — | — | 100 | mV |
| | | CH3 | — | — | 100 | mV |
| Ripple and Noise | BW=DC～100MHz | CH1 | — | — | 150 | mV |
| | | CH2 | — | — | 150 | mV |
| | | CH3 | — | — | 150 | mV |
| Efficiency | Vin=100V | | — | 66 | — | % |
| | Vin=230V | | — | 68 | — | % |

KLT15F-0533 Ta=25℃, AC115/230V, 50/60Hz, TYP Output

| ITEMS | CONDITION | | MIN | TYP | MAX | UNIT |
|---|---|---|---|---|---|---|
| OVP point | CH1 only | | 5.75 | — | — | V |
| Output Voltage | | CH1 | — | 5.0 | 5.25 | V |
| | | CH2 | 14.25 | 15.0 | 15.75 | V |
| | | CH3 | 14.25 | 15.0 | 15.75 | V |
| Output Current | *4 | CH1 | — | 1.5 | 2.0 | A |
| | | CH2 | — | 0.3 | 0.45 | A |
| | | CH3 | — | 0.2 | 0.45 | A |
| Load Regulation | | CH1 | — | — | 100 | mV |
| | | CH2 | — | — | 120 | mV |
| | | CH3 | — | — | 120 | mV |
| Ripple | BW=DC～100MHz | CH1 | — | — | 100 | mV |
| | | CH2 | — | — | 100 | mV |
| | | CH3 | — | — | 100 | mV |
| Ripple and Noise | BW=DC～100MHz | CH1 | — | — | 150 | mV |
| | | CH2 | — | — | 150 | mV |
| | | CH3 | — | — | 150 | mV |
| Efficiency | Vin=100V | | — | 66 | — | % |
| | Vin=230V | | — | 69 | — | % |

*4 : Total output wattage do not exceed 15W

| | | | | | |
|---|---|---|---|---|---|
| **Vibration and Shock** | Vibration | 10～55Hz 0.5mm 3direction each 30min. | | | |
| | Shock | 20G (3direction each 3 times) | | | |
| **Additional function** | Over Current Protection | Automatic Recovery | | | |
| | Over Voltage Protection | CH1 only Zener limiter | | | |
| | Voltage adjust | CH1 only optional | | | |
| **Safety** | UL60950 | | | | |
| | CSA22.2 No.60950 | | | | |
| | CE(LVD) | | | | |
| **EMI** | FCC Part15 | EN55022 | VCCI(B) | meet | |
| **Warranty** | 3 years | | | | |

**Cautions**

☆ Avoid sustained dead short condition
☆ CH1 separated CH2, CH3
☆ Units may not rise-up over 10,000uF capacitor add output.

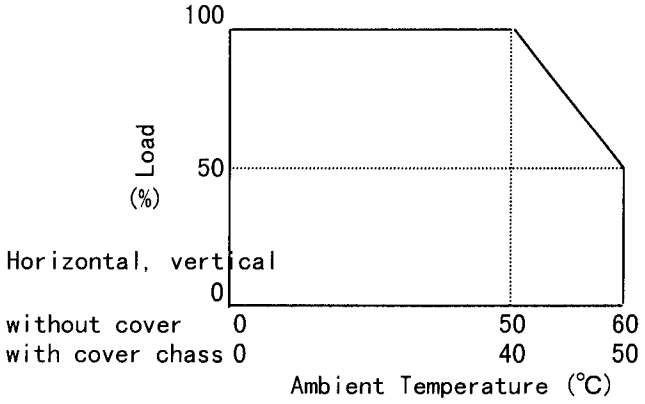
☆ Do not exceed total output power 15W.

**Model designation**

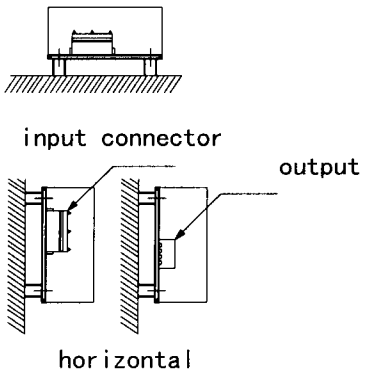
KLT15F - 0522 - 2

- 2 — Option: nothing : without chassis cover; 2 : with chassis and cover
- 0522 — Output Voltage: 5V、+12V, -12V
- KLT15F — Series: TOF15-T series

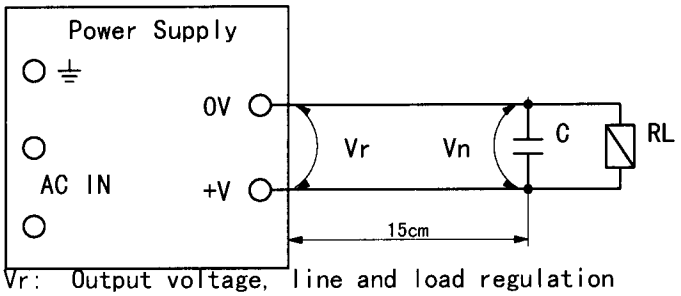
FIG.1 Derating Curve (Load vs ambient Temperature)




vertical



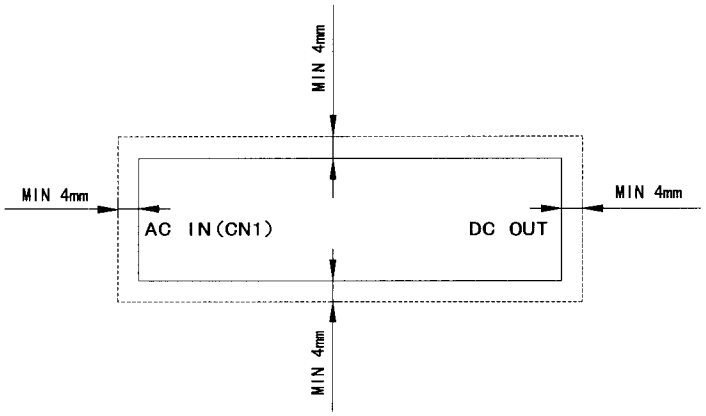
**Measurement Circuit**




Vr: Output voltage, line and load regulation
Vn: Ripple and Noise (with Bayonet probe)
C: 0.1uF film capacitor and 47 uF electrolytic capacitor)

**Caution**

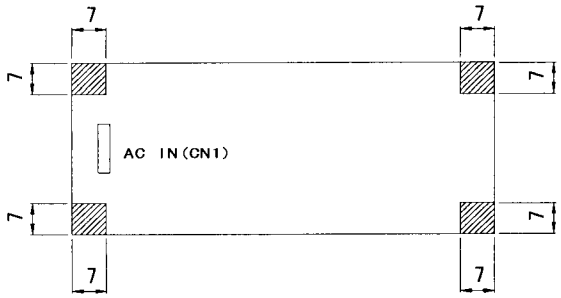
* Do not use in overcurrent condition or short mode.
* There are differ ground line from CH1 to CH2, CH3.
* Using too large of capacitor (10,000$\mu$F) on your load may prevent the power supply from providing the rated output voltage.
* Do not use output wattage of CH1, Ch2, CH3 more than rated wattage
* When installing the components or laying out the pattern around the unit, mainta below. If this distance can not be kept, insert an insulation sheet between then



**Mounting**

Use M3 screw for fix this unit.

▨ parts is permitted to use metal chassis and screw.




unit(mm)