

AC/DC Converter

TGO15-xx Series



15W, AC-DC converter



FEATURES

- Universal 85-264VAC or 100-370VDC input voltage
- 2.5×1.8 inch high power density
- Operating ambient temperature range -25°C to +70°C
- Output short circuit, over-current & over-voltage protection
- High efficiency, high reliability
- Regulated output, low ripple & noise
- EMI performance meets CISPR32/EN55032 CLASS B
- 2 years warranty
- Safety according to UL/EN60335

TGO15-xx series is one of Tiger Power's compact size power converter. It features universal AC input and at the same time accepts DC input voltage, low power consumption, high efficiency, high reliability, reinforced isolation. It offers good EMC performance compliant to IEC/EN61000-4 and CISPR32/EN55032 and meets UL/EN/IEC62368, EN/UL60335 standards. The converters are widely used in industrial, office and civil applications.

Selection Guide

| Certification | Part No. | Output Power | Nominal Output Voltage and Current (Vo/Io) | Efficiency at 230VAC (%) Typ. | Capacitive Load (μF) Max. |
|--------------------|----------|--------------|--|-------------------------------|---------------------------|
| UL/EN/IEC/ UKCA | TGO15-03 | 9W | 3.3V/3000mA | 78 | 20000 |
| | TGO15-05 | 14W | 5V/2800mA | 80 | 10000 |
| | TGO15-09 | 15W | 9V/1600mA | 82 | 5800 |
| | TGO15-12 | | 12V/1250mA | 83 | 5200 |
| | TGO15-15 | | 15V/1000mA | 83 | 4500 |
| | TGO15-24 | | 24V/625mA | 85 | 1000 |

Input Specifications

| Item | Operating Conditions | Min. | Typ. | Max. | Unit |
|---------------------|----------------------|-----------------|------|------|------|
| Input Voltage Range | AC input | 85 | -- | 264 | VAC |
| | DC input | 100 | -- | 370 | VDC |
| Input Frequency | | 47 | -- | 60 | Hz |
| Input Current | 115VAC | -- | -- | 0.37 | A |
| | 230VAC | -- | -- | 0.22 | |
| Inrush Current | 115VAC | -- | 20 | -- | |
| | 230VAC | -- | 30 | -- | |
| Leakage Current | 264VAC | 0.25mA RMS max. | | | |
| Hot Plug | | Unavailable | | | |

Output Specifications

| Item | Operating Conditions | Min. | Typ. | Max. | Unit |
|----------------------------|--------------------------------------|-----------------------------------|--------------------------------|-------|------|
| Output Voltage Accuracy | 3.3V output | -- | ±3 | -- | % |
| | Other output | -- | ±2 | -- | |
| Line Regulation | Full load | -- | ±0.5 | -- | |
| Load Regulation | 0%-100% load | -- | ±1 | -- | |
| Ripple & Noise* | 20MHz bandwidth (peak-to-peak value) | -- | 50 | 100 | mV |
| Temperature Coefficient | | -- | -- | ±0.02 | %/°C |
| Stand-by Power Consumption | | -- | -- | 0.5 | W |
| Short Circuit Protection | | Hiccup, continuous, self-recovery | | | |
| Over-voltage Protection | 3.3/5V output | ≤7.5V | Output voltage clamp or hiccup | | |
| | 9V output | ≤15V | | | |
| | 12/15V output | ≤20V | | | |
| | 24V output | ≤30V | | | |

| | | | | | |
|-------------------------|-----------------------------|------------------------|------|----|----|
| Over-current Protection | | ≥130%Io, self-recovery | | | |
| Minimum Load | | 0 | -- | -- | % |
| Start-up Time | 85VAC-264VAC input, Io=100% | -- | 2000 | -- | ms |
| Hold-up Time | 115VAC input, Io=100% | -- | 10 | -- | |
| | 230VAC input, Io=100% | -- | 60 | -- | |

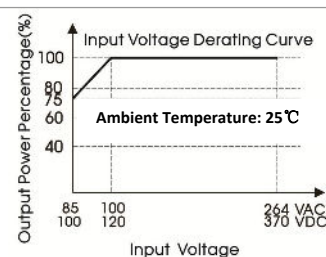
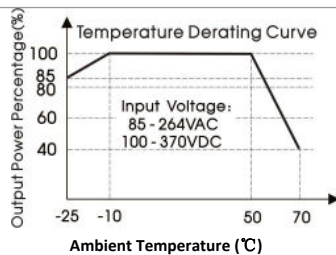
Note: * The "Tip and barrel method" is used for ripple and noise test, please refer to AC-DC Converter Application Notes for specific information.

| General Specifications | | Operating Conditions | Min. | Typ. | Max. | Unit |
|------------------------|----------------|--|--|------|------|---------|
| Isolation | Input - output | Electric Strength Test for 1min., (leakage current < 5mA) | 3000 | -- | -- | VAC |
| Operating Temperature | | | -25 | -- | +70 | °C |
| Storage Temperature | | | -25 | -- | +85 | |
| Storage Humidity | | | -- | -- | 90 | %RH |
| Altitude | | | -- | -- | 2000 | m |
| Soldering Temperature | | Wave-soldering | 260 ± 5 °C; time: 5 - 10s | | | |
| | | Manual-welding | 360 ± 10 °C; time: 3 - 5s | | | |
| Power Derating | | -25 °C to -10 °C | 1 | -- | -- | % / °C |
| | | +50 °C to +70 °C | 3 | -- | -- | |
| | | 85VAC - 100VAC | 1.67 | -- | -- | % / VAC |
| Safety Standard | | | UL/IEC62368-1 safety approved & EN62368-1, BS EN 62368-1 (Report); Design refer to UL/EN60335-1 | | | |
| Safety Class | | | CLASS II | | | |
| MTBF | | | MIL-HDBK-217F@25 °C > 300,000 h | | | |

| Mechanical Specifications | |
|---------------------------|--------------------------|
| Dimension | 63.50 x 45.70 x 19.00 mm |
| Weight | 36g (Typ.) |
| Cooling Method | Free air convection |

| Electromagnetic Compatibility (EMC) | | | |
|-------------------------------------|---|-----------------|---------------------------------------|
| Emissions | CE | CISPR32/EN55032 | CLASS B |
| | RE | CISPR32/EN55032 | CLASS B |
| Immunity | ESD | IEC/EN61000-4-2 | Contact ±6KV Perf. Criteria B |
| | RS | IEC/EN61000-4-3 | 10V/m Perf. Criteria A |
| | EFT | IEC/EN61000-4-4 | ±2KV Perf. Criteria B |
| | Surge | IEC/EN61000-4-5 | line to line ±1KV Perf. Criteria B |
| | CS | IEC/EN61000-4-6 | 10Vr.m.s Perf. Criteria A |
| | Voltage dips, short interruptions and voltage variations immunity | | IEC/EN61000-4-11 |

Product Characteristic Curve

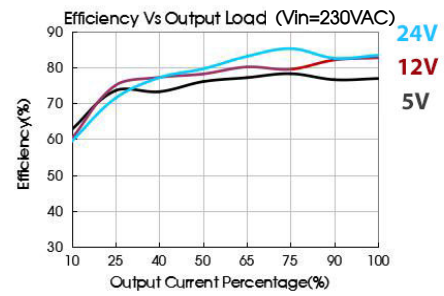
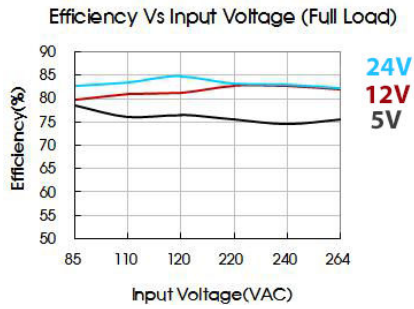


Note:

- ① With an AC input voltage between 85-100VAC and a DC input between 100-120VDC the output power must be derated as per temperature derating curves;
- ② This product is suitable for applications using natural air cooling; for applications in closed environment please consult Mornsun FAE.

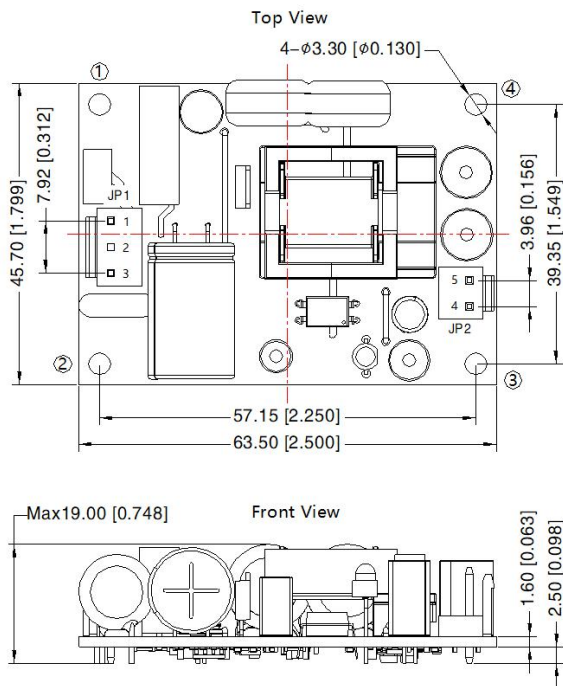
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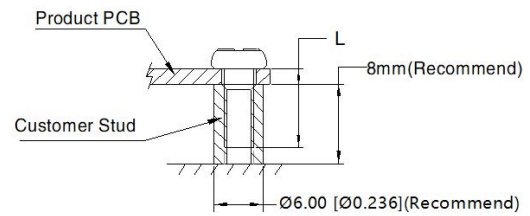
Dimensions and Recommended Layout

THIRD ANGLE PROJECTION



| Pin-Out | | | |
|------------|-----|-------|---|
| Connectors | Pin | Mark | Client Connectors |
| JP1 | 1 | AC(L) | Housing: JST VHR Contact: JSTSVH-21T-P1.1 or equivalent |
| | 2 | NoPin | |
| | 3 | AC(N) | |
| JP2 | 4 | -Vo | Housing: JST VHR Contact: JSTSVH-21T-P1.1 or equivalent |
| | 5 | +Vo | |

| Position | Screw Spec. | L(Recommend) | Torque(max) |
|----------|-------------|--------------|-------------|
| ① - ④ | M3 | 6mm | 0.4N · m |



Note:
 Unit: mm[inch]
 General tolerances: ± 0.50 [± 0.020]
 Mounting hole screwing torque: Max 0.4 N · m