# TR30RAM SERIES
## 30W MEDICAL SWITCHING ADAPTER

## Features

* Universal Input Range 90~264VAC
* Continuous Short Circuit Protection
* Over Voltage Protection
* Meets EN60601-1 and EN55011 Class B
* Meets 2MOPP
* Efficiency & Standby Power Meet Level V (Output Cable Length≦1800mm)
* Provide PSE Mark



## Ordering information

| TR30RAMXXX - | XX | E | XX | - | XX | -BK |
|---|---|---|---|---|---|---|
| Model No. | DC Plug Type | | DC Cable Length and Type | | Color of Overmold Case | |
| | | | 01: 720mm | | BE: Blue | |
| | | | 02: 1220mm | | GY: Gray | |
| | | | 03: 1800mm | | RD: Red | |
| | | | 11: 720mm with Ferrite Core | | PE: Purple | |
| | | | 12: 1220mm with Ferrite Core | | OE: Orange | |
| | | | 13: 1800mm with Ferrite Core | | | |
| | | | * 18AWG / UL1185 | | | |
| | | | * 16AWG / UL1185 for 5V、9V | | | |

| MODEL | OUTPUT VOLTAGE | OUTPUT CURRENT | RIPPLE & NOISE NOTE 2 | VOLTAGE ACCURACY NOTE 1 | LINE REGULATION NOET 3 | LOAD REGULATION NOET 4 | % EFF. (Typ.) NOTE 5 |
|---|---|---|---|---|---|---|---|
| TR30RAM050 | 5 V | 4.0 A | 1% | ±2% | ±1% | ±6% | 80% |
| TR30RAM090 | 9 V | 3.0 A | 1% | ±2% | ±1% | ±3% | 84% |
| TR30RAM120 | 12 V | 2.5 A | 1% | ±2% | ±1% | ±2% | 84% |
| TR30RAM150 | 15 V | 2.0 A | 1% | ±2% | ±1% | ±2% | 85% |
| TR30RAM180 | 18 V | 1.67 A | 1% | ±2% | ±1% | ±2% | 85% |
| TR30RAM240 | 24 V | 1.25 A | 1% | ±2% | ±1% | ±2% | 86% |

*Specifications are subject to change without notice.*

# Specifications

## INPUT SPECIFICATIONS:

Voltage ..... 90~264Vac
Frequency ..... 47 to 63Hz
Input Current ..... 100Vac/0.8A max., 240Vac/0.4A max.
Inrush Current .....Cold start@25℃ 100A max. @240Vac
Leakage Current ..... 100μA max.

## OUTPUT SPECIFICATIONS:

Hold-up Time ..... 10ms typ. @115Vac
Short Circuit Protection ..... Hiccup Mode (Auto Recovery)
Over Voltage Protection ..... TVS Component to Clamp
Temperature Coefficient ..... ±0.05%/℃

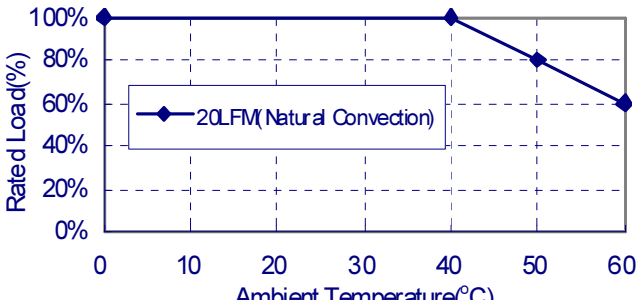
## GENERAL SPECIFICATIONS:

Isolation ..... Input to output = 4,000VAC (5,656VDC)
Operating Temperature ..... 0 ~ 60℃(see drating curve)
Storage Temperature ..... -20~85℃
Humidity ..... 93% RH max. Non condensing
Cooling ..... Natural Convection
Switching Frequency ..... 70KHz Typical
MTBF ..... MIL-HDBK-217F, GB, 25℃/115VAC ..... 200Khrs min.
Altitude ..... 3000m
Dimensions ..... 4.278x2.440x1.445Inches (108.67x61.98x36.70mm)
Weight ..... 300g(0.67 Pounds)

## SAFETY AND EMC:

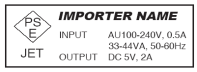
Emission and Immunity (Ed. 4.0) .... EN55011 Class B, FCC CFR47 Part 18 Class B
EN60601-1-2, EN61000-3-2-3, EN61000-4-2, 3, 4, 5, 6, 8, 11
Safety (Ed. 3.1) ..... IEC60601-1:2005+A1:2012
EN60601-1:2006+A11:2011+A1+A12, UL ANSI/AAMI ES60601-1:2005
IEC 60950-1, EN60950-1, UL60950-1

# TR30RAM Series Derating Curve



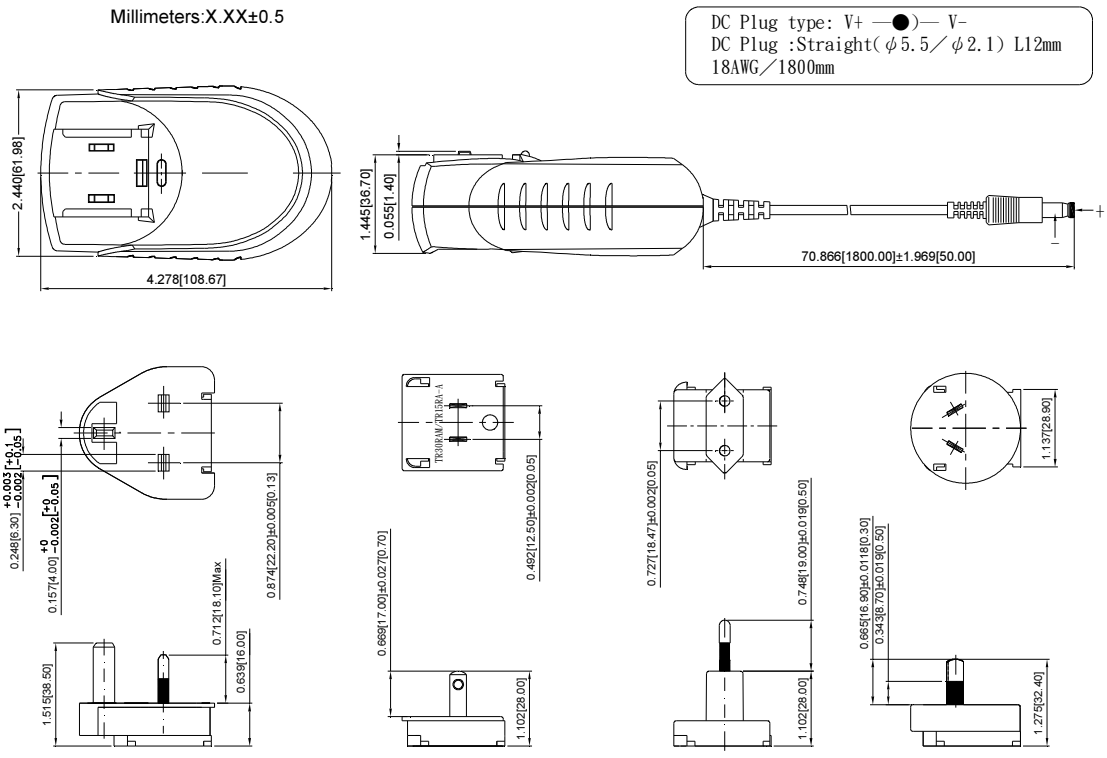

## NOTE:

1. Voltage accuracy is set at 60% load and 25℃ Ta.
2. Add a 0.1uF ceramic capacitor and a 10uF E.L. capacitor to output for Ripple & Noise measuring @20MHz BW.
3. Line regulation measured from 100Vac to 240Vac with full load.
4. Load regulation measured from 60% to full load and from 60% to 20% load (60% +/- 40% load)
5. Typical efficiency with 230 VAC and max. load at 25°C.
6. "Various TR Series adapters are PSE certified. PSE certification alone is not sufficient for importation into Japan. A valid PSE mark must contain the name of the importer as shown in the example below. If PSE mark is required, the name of the registered importer must be supplied to Cincon on order placement. Product labels will not contain PSE mark if importer name is not supplied. Consult factory or local representative for details"




## *Mechanical Specification*

All Dimensions are in inches(mm)
Tolerance:Inches:X.XXX±0.02
Millimeters:X.XX±0.5




*Typical at 25°C, nominal line and 75% load, unless otherwise Specified*