

## ATC30 SERIES

**30 Watts**

### KEY FEATURES

- Switching Power Module for PCB Mountable
- Fully Encapsulated Plastic Case
- Universal Input Range 90-305VAC
- High Efficiency up to 89%
- Isolation Class II
- <0.3W No Load Input Power
- Very Small 2.52" x 1.77" x 0.92 " Package
- CE, CB and UL Approval
- 3-Year Product Warranty



### ELECTRICAL SPECIFICATIONS

All specifications valid at normal input voltage, full load and +25°C after warm-up time unless otherwise stated

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|------------------------------------------------------------------------------------------------------------------|-------------------------------------------|-----------------------------------------------------------------------|----------|-----------|-----------|-----------|
| Model No. ( Single Output )                                                                                      |                                           | ATC30-3.3S                                                            | ATC30-5S | ATC30-12S | ATC30-15S | ATC30-24S |
| Max Output Wattage (W)                                                                                           |                                           | 16.5W                                                                 | 25W      | 30W       | 30W       | 30W       |
| Input                                                                                                            | Voltage (Note1)                           | 90-305 VAC or 120-430 VDC                                             |          |           |           |           |
|                                                                                                                  | Frequency (Hz)                            | 47-63 Hz                                                              |          |           |           |           |
|                                                                                                                  | Current (Full load)                       | 600 mA max. (115 VAC) /400 mA max. (230 VAC)                          |          |           |           |           |
|                                                                                                                  | Inrush Current (<2ms)                     | 30 A max. (115 VAC) / 60 A max. (230 VAC)                             |          |           |           |           |
|                                                                                                                  | Leakage Current                           | 0.25 mA max.                                                          |          |           |           |           |
|                                                                                                                  | No Load Input Power (<240 VAC)            | <0.3W                                                                 |          |           |           |           |
|                                                                                                                  | External Fuse (mandatory)                 | 3.15 A slow blow type                                                 |          |           |           |           |
| Output                                                                                                           | Voltage (V.DC.)                           | 3.3V                                                                  | 5V       | 12V       | 15V       | 24V       |
|                                                                                                                  | Voltage Accuracy                          | ±2%                                                                   |          |           |           |           |
|                                                                                                                  | Current (mA) max                          | 5000                                                                  | 5000     | 2500      | 2000      | 1250      |
|                                                                                                                  | Line Regulation (LL-HL) (typ.)            | ±0.5%                                                                 |          |           |           |           |
|                                                                                                                  | Load Regulation (0-100%) (typ.)           | ±1.5%                                                                 | ±1%      |           |           |           |
|                                                                                                                  | Minimum Load                              | 0%                                                                    |          |           |           |           |
|                                                                                                                  | Maximum Capacitive Load                   | 6800 uF                                                               | 6800 uF  | 1600 uF   | 1200 uF   | 470 uF    |
|                                                                                                                  | Ripple & Noise (max.) (Note2)             | 100mVp-p                                                              | 100mVp-p | 150mVp-p  | 150mVp-p  | 240mVp-p  |
|                                                                                                                  | Efficiency (at 230 VAC)                   | 80%                                                                   | 84%      | 89%       | 86%       | 86%       |
|                                                                                                                  | Hold-up Time                              | 10 ms min.                                                            |          |           |           |           |
|                                                                                                                  | Switching Frequency (typ.) ( at 230 VAC ) | 66 kHz                                                                |          |           |           |           |
| Protection                                                                                                       | Over Power Protection                     | Hiccup technique, auto-recovery                                       |          |           |           |           |
|                                                                                                                  | Over Voltage Protection                   | Zener diode clamp                                                     |          |           |           |           |
|                                                                                                                  | Short Circuit Protection                  | Hiccup mode, indefinite (automatic recovery)                          |          |           |           |           |
| Isolation                                                                                                        | Input-Output (V.AC)                       | 3000V                                                                 |          |           |           |           |
|                                                                                                                  | Input-FG (V.AC)                           | 1500V                                                                 |          |           |           |           |
|                                                                                                                  | Output-FG (V.AC)                          | 500V                                                                  |          |           |           |           |
| Environment                                                                                                      | Operating Temperature                     | -40°C...+70°C (with derating)                                         |          |           |           |           |
|                                                                                                                  | Storage Temperature                       | -40°C...+85°C                                                         |          |           |           |           |
|                                                                                                                  | Max Case Operating Temperature            | Under 115 VAC 78°C , others 85°C                                      |          |           |           |           |
|                                                                                                                  | Temperature Coefficient                   | ±0.02%/°C                                                             |          |           |           |           |
|                                                                                                                  | Humidity                                  | 95% RH                                                                |          |           |           |           |
|                                                                                                                  | MTBF                                      | >400,000 h @ 25°C (MIL-HDBK-217F)                                     |          |           |           |           |
| Physical                                                                                                         | Dimension (L x W x H)                     | 2.52 x 1.77 x 0.92 Inches ( 64.0 x 45.0 x 23.5 mm ) Tolerance ±0.5 mm |          |           |           |           |
|                                                                                                                  | Case Material                             | Plastic resin (flammability to UL 94V-0)                              |          |           |           |           |
|                                                                                                                  | Weight                                    | 130 g                                                                 |          |           |           |           |
|                                                                                                                  | Cooling Method                            | Free air convection                                                   |          |           |           |           |

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## ELECTRICAL SPECIFICATIONS

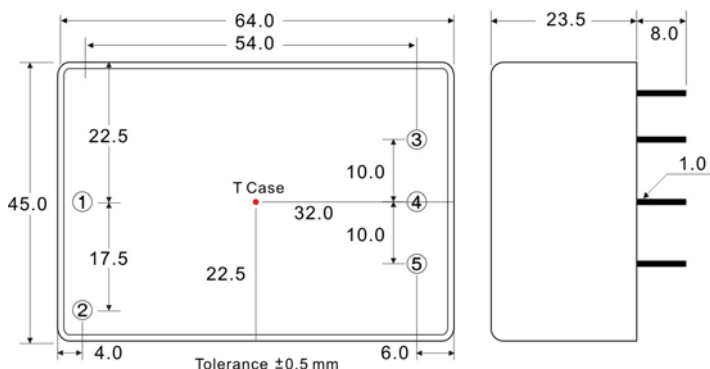
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| Model No. | ( Single Output )                   | ATC30-3.3S                                        | ATC30-5S | ATC30-12S | ATC30-15S | ATC30-24S |
|-----------|-------------------------------------|---------------------------------------------------|----------|-----------|-----------|-----------|
| Safety    | Agency Approvals                    | CE, UL/cUL, CB                                    |          |           |           |           |
| EMC       | EMI (Conducted & Radiated Emission) | EN 55022 class B                                  |          |           |           |           |
|           | EMS (Noise Immunity)                | EN 55024                                          |          |           |           |           |
|           | ESD                                 | EN61000-4-2 air $\pm$ 8kV , Contact $\pm$ 4kV (A) |          |           |           |           |
|           | Radiated Immunity                   | EN61000-4-3 3V/m (A)                              |          |           |           |           |
|           | Fast Transient                      | EN61000-4-4 $\pm$ 1kV (A)                         |          |           |           |           |
|           | Surge                               | EN61000-4-5 $\pm$ 1kV (A)                         |          |           |           |           |
|           | Conducted Immunity                  | EN61000-4-6 3Vrms (A)                             |          |           |           |           |
|           | PFMF                                | EN61000-4-8 1A/m (A)                              |          |           |           |           |
|           | Dips                                | EN61000-4-11 30% 500ms (A)                        |          |           |           |           |

## NOTE

1. Please check the derating curve for more details.
2. Ripple & Noise are measured at 20MHz of bandwidth with 0.1uF & 47uF parallel capacitor.
3. It's necessary to add Varistor 14S561K at L / N input side in parallel.
4. Please refer to our PDF file "AC-DC Application" on our website: [www.archcorp.com.tw](http://www.archcorp.com.tw)

## MECHANICAL DIMENSION ( Top View )



PIN# Single

1 AC IN (N)

2 AC IN (L)

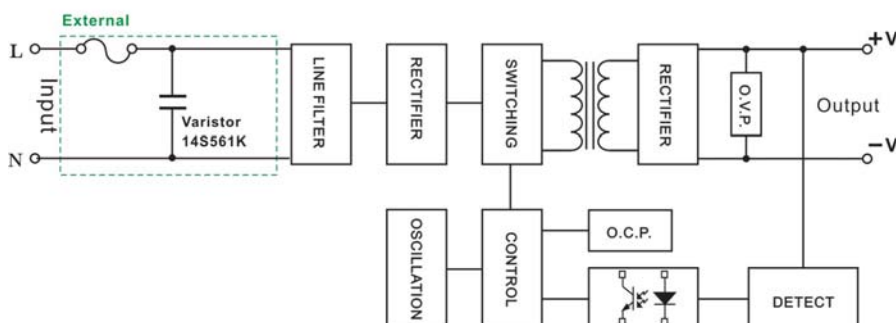
3 -DC OUT

4 NO PIN

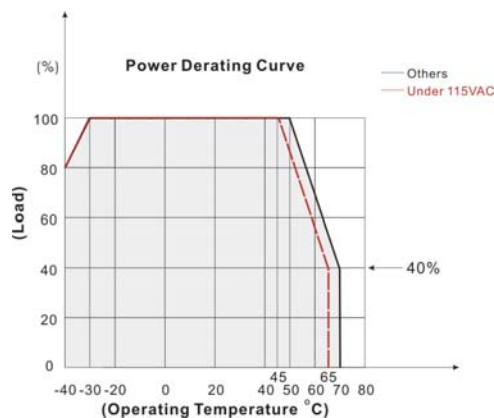
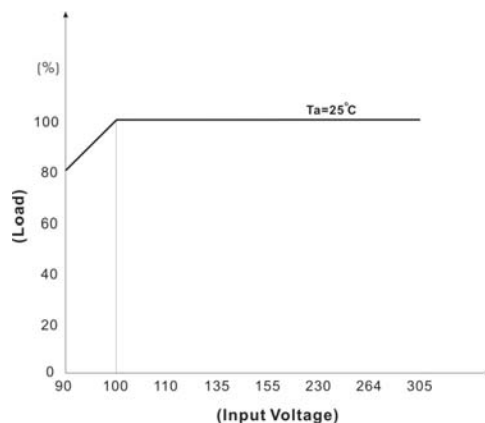
5 +DC OUT

## BLOCK DIAGRAM

Single Output

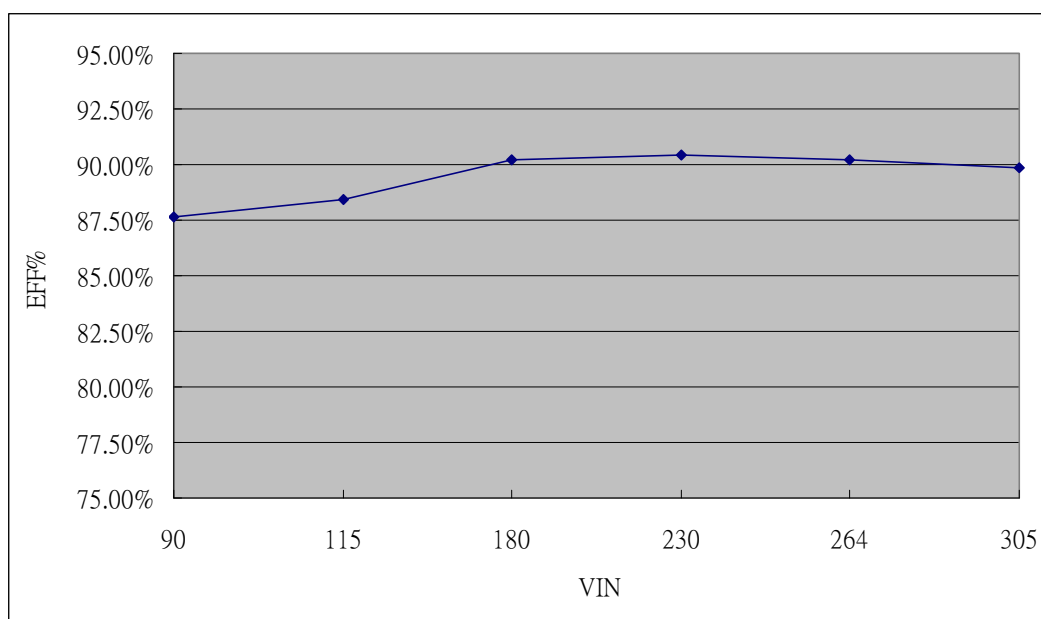


## DERATING



**EFFICIENCY VERSUS LOAD**
**ATC30-12S**
**VIN VS Efficiency**

| Input Voltage (V) | 90   | 115  | 180  | 230  | 264  | 305  |
|-------------------|------|------|------|------|------|------|
| Efficiency (%)    | 87.6 | 88.4 | 90.2 | 90.4 | 90.2 | 89.9 |


**LOAD VS Efficiency**

| Load (%) | 10   | 20   | 30   | 40   | 50   | 60   | 70   | 80   | 90   | 100  |
|----------|------|------|------|------|------|------|------|------|------|------|
| 230V (%) | 84.6 | 87.9 | 89.3 | 90.2 | 90.3 | 89.9 | 89.9 | 90.1 | 90.1 | 90.4 |

