# **H**HITRON

# **ON-BOARD UNIVERSAL INPUT AC-DC ENCAPSULATED MODULAR POWER SUPPLIES 10 WATTS TRIPLE OUTPUT HAM10-T SERIES**



# **FEATURES:**

- **ON-BOARD AC/DC MODULAR POWER SUPPLIES**
- **UNIVERSAL INPUT RANGE**
- COMPACT IN SIZE
- **MEET UNIVERSAL SAFETY STANDARDS**
- EMI MEET CISPR PUB.22 / FCC CLASS B
- **CE MARKING COMPLIANCE**

SPECIFICATION						
INPUT SPECIFICATION	OUTPUT SPECIFICATION					
Input Voltage: 90-264Vac.	Output Voltage: See Ratings Chart.					
Input Frequency: 47-63 Hz. (50/60 Hz. Nom.)	Output Current: See Ratings Chart.					
Input Current: 0.3A @115Vac./0.13A @230Vac typical.	Output Wattage: 10 Watts typical. Output Indicator: LED. Line Regulation: Various with output voltage, ±0.5% typ. Load Regulation: Various with output voltage.					
Inrush Current: 32.5A typical peak @230Vac.						
Input Fuse: Use external fuse. 1.0A/250Vac for the						
primary fuse is suggested.	VO1 $\pm$ 5.0% typ. VO2 $\pm$ 3.0% typ. VO3 $\pm$ 4.0% typ.					
Dielectric Withstand: Meet IEC950.	Noise & ripple: 1.0% typical peak to peak.					
3,000Vac-Output/Input.	<b>OVP:</b> Built-in on main output.					
1,500Vac-Input/GND.	Adjustability: From -10% of main output till OVP.					
500Vac-Output/GND.	Overload Protection (OLP):					
EMI: Meet CISPR PUB.22 / FCC class B.	Fully protected against output overload and short circuit.					
Hold-up time: 20mS @115Vac, 80mS @230Vac typical.	OLP set at about 125-150% rating output wattage.					
Earth Leakage: Less than 3.5mA @230Vac typical.	Consult the factory for OLP setting.					
GENERAL SPECIFICATION						
Efficiency: 70-75% typical. (Various with output voltage).	<b>Operating Temperature:</b> -10 to +70°C range.					
Switching Frequency: 83KHz.	-10°C to +50°C full load without derating.					
<b>Circuit Topology:</b> Fixed Frequency Flyback circuit.	From +50°C, derating linearly to half load @+70°C. (Refer to Derating Chart.)					

Transient Response: Typical peak deviation 250mV, Recovery time < 3mS for a 25% load change.

Case: Impact resistant thermo-plastic enclosure.

Power Density: 2.51 Watts. / Cubic inch.

Safety Standard: EN60950/ UL1950 Class I.

MTBF: 110,000 hours. Mil Std 217, 25 °C.

#### Storage Temperature: -20°C to +85°C. **Temperature Coefficient:** ±0.03% /°C.

Humidity: Up to 95%RH, Non-condensing. Cooling: Convection cooling for +50°C @ full load.

At least 100LFM moving air is recommended

for full load  $> +50^{\circ}$ C in a confined area.

**Commercial Grade only.** 

NOTE: (1) All measurements are at nominal input, full load, and +25°C unless otherwise specified.

(2) Load Regulation measured from Full-Load (F-L) to Half-Load (H-L) at nominal input and others loaded at half load.







Due to requests in market and advances in technology, specifications subject to change without notice.

# **OUTPUT VOLTAGE/ CURRENT RATINGS CHART**

#### **TRIPLE OUTPUT**

MODEL NO.	+VO1 @★			+VO2 <b>†</b>			-VO3		
MODEL NO.	TYP.	VOLT.	MAX.	TYP.	VOLT.	MAX.	TYP.	VOLT.	MAX.
HAM10T-5/09	1.0A	+5.0V	1.15A	0.27A	+9.0V	0.31A	0.27A	-9.0V	0.31A
HAM10T-5/12	1.0A	+5.0V	1.15A	0.25A	+12.0V	0.28A	0.25A	-12.0V	0.28A
HAM10T-5/15	1.0A	+5.0V	1.15A	0.20A	+15.0V	0.23A	0.20A	-15.0V	0.23A
HAM10T-5/24	1.0A	+5.0V	1.15A	0.12A	+24.0V	0.14A	0.12A	-24.0V	0.14A
HAM10T-3/05	1.0A	+3.3V	1.15A	0.40A	+5.0V	0.46A	0.40A	-5.0V	0.46A
HAM10T-3/12	1.0A	+3.3V	1.15A	0.25A	+12.0V	0.29A	0.25A	-12.0V	0.29A
HAM10T-3/15	1.0A	+3.3V	1.15A	0.20A	+15.0V	0.23A	0.20A	-15.0V	0.23A
HAM10T-3/5,12	1.0A	+3.3V	1.15A	0.40A	+5.0V	0.46A	0.25A	-12.0V	0.28A
HAM10T-3/24	1.0A	+3.3V	1.15A	0.12A	+24.0V	0.14A	0.12A	-24.0V	0.14A
Symbols: "★" OVP built-in. "@" Adjustable. "			" Double	" Double Feedback. " <sup>†</sup> " Stacked on main O/P.					

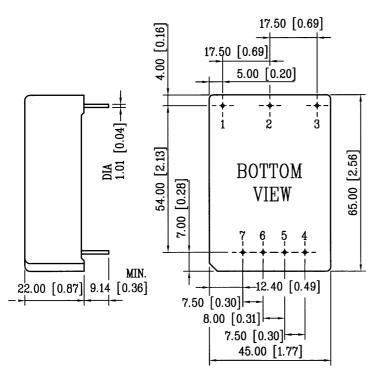
**Symbols:** "★" OVP built-in. "@" Adjustable. " || " Double Feedback. Note: (1) Max. (maximum load) is the continuous operating load of each rail,

but the max. load of each rail can not be drawn from all outputs at the same time.

(2) Peak output, less than 60 Sec. with duty cycle <10%.

# **MECHANICAL DIMENSIONS: MM [INCHES]**

### WEIGHT: 120.0g (4.23 Oz.)



CASE SIZE: AM02

#### **PIN ASSIGNMENT**

PIN NO.	TRIPLE
PIN #1	AC-GROUND
PIN #2	AC-NEUTRAL
PIN #3	AC-LINE
PIN #4	+ VO2
PIN #5	+ VO1
PIN #6	DC-COM
PIN #7	- VO3

## **DERATING CHART**

