

# H HITRON

CHASSIS-MOUNT UNIVERSAL INPUT MEDICAL APPLICATION
AC-DC GREEN POWER ENCAPSULATED MODULAR POWER SUPPLIES
10 WATTS MULTIPLE OUTPUT HASM10G SERIES



#### **FEATURES:**

- CHASSIS-MOUNT AC/DC MODULAR POWER SUPPLIES
- UNIVERSAL AC INPUT RANGE
- NO LOAD POWER CONSUMPTION <0.51 W</li>
- MEET MEDICAL STANDARD EN60601-1/UL60601-1
- EMI MEETS CISPR PUB.22/FCC CLASS B
- CE MARKING COMPLIANCE

# **SPECIFICATION**

#### **INPUT SPECIFICATION**

Input Voltage: Typical 90-264Vac.

Input Frequency: 47-63 Hz. (Nominal 50/60Hz.). Input Current: Typical 0.16A at 115Vac/0.1A at 230Vac.

Inrush Current: Typical 4.2Arms at 230Vac.

**Input Fuse:** Use external fuse.

Dielectric Withstand: Meet IEC60601-1.

4,000Vac-Output/Input. 2,000Vac-Input/GND. 1,000Vac-Output/GND.

EMI: Meet CISPR PUB. 22/FCC Class B.

Hold-up time: Typ. 22.4 mS at115Vac, 130mS at 230Vac. Green Power: Less than 0.51Watt at 230Vac for single O/P. Earth Leakage Current: Less than 0.16mA at 230Vac.

**Remote ON/OFF:** 

**ON**(Enable)=Open. **OFF**(Disable)=Short.

#### **OUTPUT SPECIFICATION**

Output Voltage: See Ratings Chart. Output Current: See Ratings Chart. Output Wattage: Typical 10 Watts.

**Line Regulation:** Various with output voltage. Typ.±0.1%.

Load Regulation: Various with output voltage.

Main VO1 typ.  $\pm$  0.1-2.0%. Aux.VO2 typ.  $\pm$  0.7-1.2%. Aux.VO3 typ.  $\pm$  0.1%.

**Total Regulation:** Typical 0.1-1.9%.

**Noise & Ripple:** Typical 1.0% peak to peak. Typ. 100mV for 3.3V/5V.

**OVP:** Built-in on main output VO1.

Adjustability: Available at main output VO1.

Overload Protection (OLP):

Fully protected against output overload and short circuit.

Typical 125-150% of rating output load. Con2sult the factory for special OLP setting.

#### GENERAL SPECIFICATION

**Efficiency:** Typical 70-80%. (various with output voltage)

Switching Frequency: 80K Hz.

Circuit Topology: Fixed Frequency Flyback circuit. Transient Response: Peak deviation on 70mV, Recovery time <0.2mSec. at 25%step load change. Case: Impact resistant thermo-plastic enclosure.

Safety Standard: EN60601-1/UL60601-1 Class I.

Power Density: 1.22 Watts. / Cubic inch.

**Operating Temperature:**  $0^{\circ}$ C to  $+50^{\circ}$ C range at full load

without derating.

From+50°C derating linearly to half load at +70°C (Refer to the Derating Chart).

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

**Cooling:** Convection cooling for +50°C at full load.

Medical 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.
- (3) Due to requests in market and advances in technology, specifications subject to change without notice.





In application.

# **OUTPUT VOLTAGE/ CURRENT RATINGS CHART**

#### SINGLE OUTPUT

## **DUAL OUTPUT**

SINGLE OCTION			
MODEL NO.	VO1 <b>★</b> @		
	TYP.	VOLT.	
HASM10G-S033250	2.50A	+3.3V	
HASM10G-S050200	2.00A	+5.0V	
HASM10G-S090111	1.11A	+9.0V	
HASM10G-S120085	0.85A	+12.0V	
HASM10G-S150067	0.67A	+15.0V	
HASM10G-S240041	0.41A	+24.0V	

MODEL NO.	VO1 <b>★</b> @		VO2●	
	TYP.	VOLT.	TYP	VOLT.
HASM10-D050E	1.00A	+5V	1.00A	-5V
HASM10-D050I	1.00A	+5V	0.42A	+12V
HASM10-D120I	0.42A	+12V	0.42A	-12V
HASM10-D150K	0.34A	+15V	0.34A	-15V
HASM10-D033E	1.51A	+3.3V	1.00A	-5V

#### TRIPLE OUTPUT

MODEL NO.	VO1 @ ★		VO2 •		VO3 •	
	TYP.	VOLT.	TYP.	VOLT.	TYP.	VOLT.
HASM10-T033II	1.51A	+3.3V	0.10A	+12V	0.10A	-12V
HASM10-T050II	1.50A	+5.0V	0.10A	+12V	0.10A	-12V
HASM10-T050KK	1.40A	+5.0V	0.10A	+15V	0.10A	-15V

**Symbols:** "★" OVP built-in. "@" Adjustable. "•" Installed with Post Regulator (P.R.).

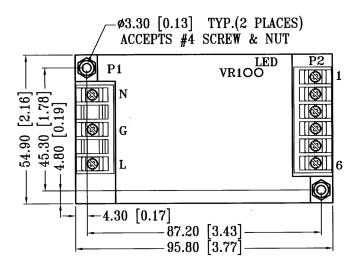
Note: (1) Max. (maximum load) is the continuous operating load of each rail, but the max. load of each rail can not be drawn from all outputs at the same time.

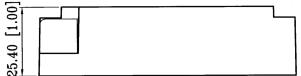
# **MECHANICAL DIMENSIONS: MM [INCHES]**

## **PIN ASSIGNMENT**

PIN	SINGLE	DUAL	DUAL	TRIPLE
NO.	O/P	O/P(-VO2)	O/P(+VO2)	O/P
P1-1	L	L	L	L
P1-3	N	N	N	N
P1-2	G	G	G	G
P2-1	REMOTE	REMOTE	REMOTE	REMOTE
F Z-1	ON/OFF	ON/OFF	ON/OFF	ON/OFF
P2-2	DC COM	VO2	DC COM	+VO1RET
P2-3	DC COM	DC COM	DC COM	+VO1
P2-4	VO1	DC COM	VO1	+VO3
P2-5	VO1	VO1	VO2	DC COM
P2-6	NC	NC	NC	VO2

**WEIGHT:** 177.5g ( 6.26Oz.)





#### **DERATING CHART**

