

## CHASSIS-MOUNT UNIVERSAL INPUT MEDICAL APPLICATION AC-DC GREEN POWER ENCAPSULATED MODULAR POWER SUPPLIES 10 WATTS MULTIPLE OUTPUT HASM10G-S & HASM10-D/T SERIES



### FEATURES:

- CHASSIS-MOUNT AC/DC MODULAR POWER SUPPLIES
- UNIVERSAL AC INPUT RANGE
- GREEN POWER DESIGN
- MEET MEDICAL STANDARD EN60601-1/UL60601-1
- EMI MEETS CISPR PUB.22/FCC CLASS B
- CE MARKING COMPLIANCE

### SPECIFICATION

#### INPUT SPECIFICATION

**Input Voltage:** 90-264Vac typical.  
**Input Frequency:** 47-63 Hz. (Nominal 50/60Hz.).  
**Input Current:** 0.16A @ 115Vac./0.1A @ 230Vac typical.  
**Inrush Current:** 4.2Arms@230Vac typical.  
**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 @115Vac, 130mS @230Vac.  
**Green Power:** 0.25W@132Vac, 0.51W@230Vac for single.  
**Earth Leakage:** Less than 0.16mA @230Vac.  
**Remote ON/OFF:**  
**ON(Enable)=Open.**  
**OFF(Disable)=Short.**

#### OUTPUT SPECIFICATION

**Output Voltage:** See Ratings Chart.  
**Output Current:** See Ratings Chart.  
**Output Wattage:** 10 Watts typical.  
**Line Regulation:** Various with output voltage. Typ.±0.1% .  
**Load Regulation:** Various with output voltage.  
Main VO1 ± 0.1-2.0% typical.  
Aux.VO2 ± 0.7-1.2% typical.  
Aux.VO3 ± 0.1% typical.  
**Total Regulation:** 0.1-1.9% typical.  
**Noise & ripple:** 1.0% typical 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:** 70-80% typical various with output voltage.  
**Switching Frequency:** 80K Hz.  
**Circuit Topology:** Fixed Frequency Flyback circuit.  
**Transient Response:** Peak deviation on 70mV,  
Recovery time <0.2mSec.@ 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°C to +50°C range. @ full load without derating.  
From+50°C derating linearly to half load @+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 @ 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.

# OUTPUT VOLTAGE/ CURRENT RATINGS CHART

## SINGLE OUTPUT

MODEL NO.	VO1 ★@	
	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

## DUAL OUTPUT

MODEL NO.	VO1 ★@		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

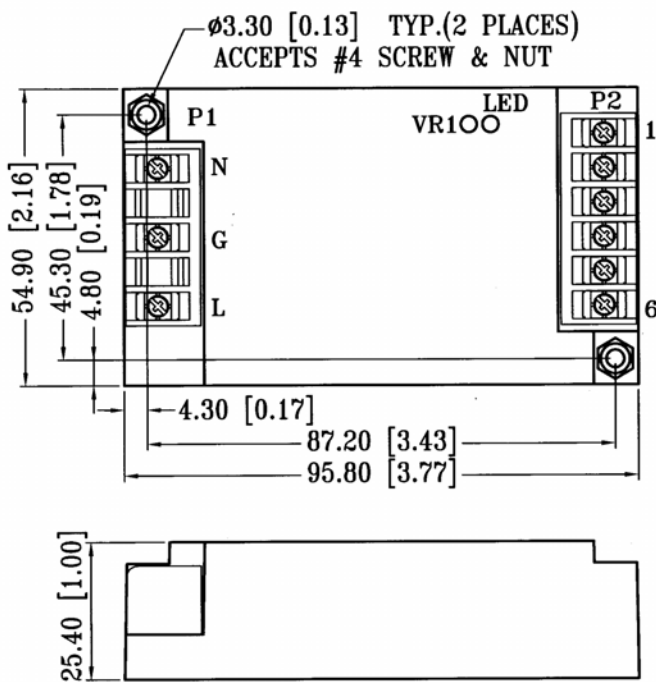
MODEL NO.	VO1 @ ★		VO2 ●		VO3 ●	
	TYP.	VOLT.	TYP.	VOLT.	TYP.	VOLT.
HASM10-T033II	1.51A	+3.3V	0.10A	+12V	0.10A	-12V
HASM10-T050II	1.50A	+5.0V	0.10A	+12V	0.10A	-12V
HASM10-T050KK	1.40A	+5.0V	0.10A	+15V	0.10A	-15V

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]

WEIGHT: 177.5g ( 6.26Oz.)



## PIN ASSIGNMENT

PIN NO.	SINGLE O/P	DUAL O/P(-VO2)	DUAL O/P(+VO2)	TRIPLE O/P
P1-1	L	L	L	L
P1-3	N	N	N	N
P1-2	G	G	G	G
P2-1	REMOTE ON/OFF	REMOTE ON/OFF	REMOTE ON/OFF	REMOTE 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

## DERATING CHART

