

ISOLATED 20W REGULATED TRIPLE OUTPUT DC/DC CONVERTERS

FEATURES

- 2"x1"x0.512" Shielded Metal Case
- Efficiency to 88%
- 4:1 ,2:1 Input Range
- Regulated Outputs
- Fixed Switching Frequency
- Input Under Voltage Protection
- Over Current Protection
- Remote On/Off
- Continuous Short Circuit Protection
- Without Tantalum Capacitors inside
- CE Mark Meets 2004/108/EC
- Safety Meets UL60950-1, EN60950-1, and IEC60950-1



Order Code	Input Voltage(Vdc)	Output Voltage(Vdc)	Input Current(mA)		Output Current(mA)		%Eff. (Typ)	Cap. Load max.(uF)
			NO Load	FULL Load	MIN.	MAX.		
HNM20-1205D12	9-18	5	170	2200	0	3000	84	2200
		±12			0	300		47
HNM20-1205D15	9-18	5	170	2260	0	3000	83	2200
		±15			0	250		47
HNM20-2405D12	18-36	5	90	1080	0	3000	86	2200
		±12			0	300		47
HNM20-2405D15	18-36	5	90	1090	0	3000	86	2200
		±15			0	250		47
HNM20-4805D12	36-75	5	30	530	0	3000	87	2200
		±12			0	300		47
HNM20-4805D15	36-75	5	30	540	0	3000	87	2200
		±15			0	250		47
HNM20-2405D12	9-36	5	90	1080	0	3000	86	2200
		±12			0	300		47
HNM20-2405D15	9-36	5	90	1090	0	3000	86	2200
		±15			0	250		47
HNM20-4805D12	18-75	5	30	530	0	3000	87	2200
		±12			0	300		47
HNM20-4805D15	18-75	5	30	540	0	3000	87	2200
		±15			0	250		47
HNM20-1203D12	9-18	3.3	170	2200	0	4000	84	2200
		±12			0	300		47
HNM20-1203D15	9-18	3.3	170	2260	0	4000	83	2200
		±15			0	250		47

HNM20W Series

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HNM20-2403D12	18-36	3.3	90	1080	0	4000	86	2200
		±12			0	300		47
HNM20-2403D15	18-36	3.3	90	1090	0	4000	86	2200
		±15			0	250		47
HNM20-4803D12	36-75	3.3	30	530	0	4000	87	2200
		±12			0	300		47
HNM20-4803D15	36-75	3.3	30	540	0	4000	87	2200
		±15			0	250		47
HNM20W-2403D12	9-36	3.3	90	1080	0	4000	86	2200
		±12			0	300		47
HNM20W-2403D15	9-36	3.3	90	1090	0	4000	86	2200
		±15			0	250		47
HNM20W-4803D12	18-75	3.3	30	530	0	4000	87	2200
		±12			0	300		47
HNM20W-4803D15	18-75	3.3	30	540	0	4000	87	2200
		±15			0	250		47

NOTE:1.Nominal Input Voltage 12,24 or 48 VDC

INPUT CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Input Voltage range	12V input types(2:1)	9	12	18	Vdc
	24V input types(2:1)	18	24	36	
	48V input types(2:1)	36	48	75	
	24V input types(4:1)	9	24	36	
	48V input types(4:1)	18	48	75	
Under voltage lock out	Turn on threshold 9V minimum input types		8.8		Vdc
	Turn off threshold 9V minimum input types		8		
	Turn on threshold 18V minimum input types		17		
	Turn off threshold 18V minimum input types		16		
	Turn on threshold 36V minimum input types		34		
	Turn off threshold 36V minimum input types		32		
Input Surge Voltage(100ms max)	18V maximum input types			20	Vdc
	36V maximum input types			40	
	75V maximum input types			80	
Input Filter					LC Type
Positive Logic Remote on/off Control					See Note

OUTPUT CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.	Units
Rated Power	All output types			20	W
Voltage Accuracy				±1.5	%
Line Regulation	Low line to high line			±0.5	%
Load Regulation	10% total load to 100% total load	Single		±1	%
		Dual		±1	

HNM20W Series

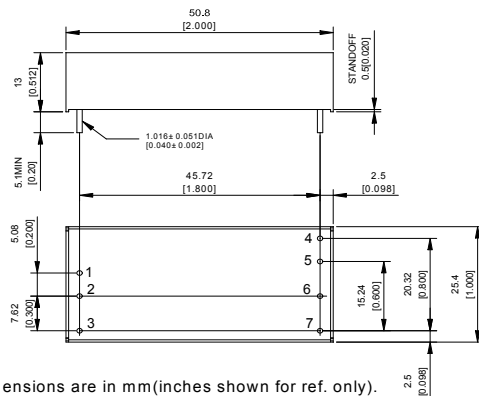
ISOLATED 20W REGULATED TRIPLE OUTPUT DC/DC CONVERTERS

Voltage Balance(Dual)				±2	%
Cross Regulation(Dual)	Asymmetrical load 25%/100%			±5	%
Temperature Coefficient				±0.03	%
Start-up Time			15		mS
Output Current Limit				110%~160% Nominal Output	
Short Circuit Protection				Continuous	
Over Voltage Protection				Zener or TVS Clamp	
External Trim Adj.Range	Single output models only			±10	%
Ripple and Noise	20MHz BW	3.3V&5V		75	mVp-p
		12V&15V		100	
Transient Response	25% Step Load Change	Error band		±5%	Vo,nom
		Recovery Time		500	uS

GENERAL CHARACTERISTICS

Isolation Voltage	1500VDC min.
Isolation Resistance (500VDC)	10 ⁸ Ohms min.
Isolation Capacitance	1000pF typ.
Switching frequency	300KHz
Operation Ambient Temperature Range	-40°C ~85°C
Derating	Above71°C,Linearly to Zero Power at +105°C
Case Temperature	105°C max
Cooling	Natural Convection
Storage Temperature Range	-55°C to +125°C
Humidity	95%RH max. Non condensing
MTBF	MIL-STD-217F,GB,25°C,Full Load 1000Khrs typ
Dimensions	50.8x25.4x13mm (2.00x1.00x0.512 inches)
Case Material	Five-Sided shield metal case
Weight	20g

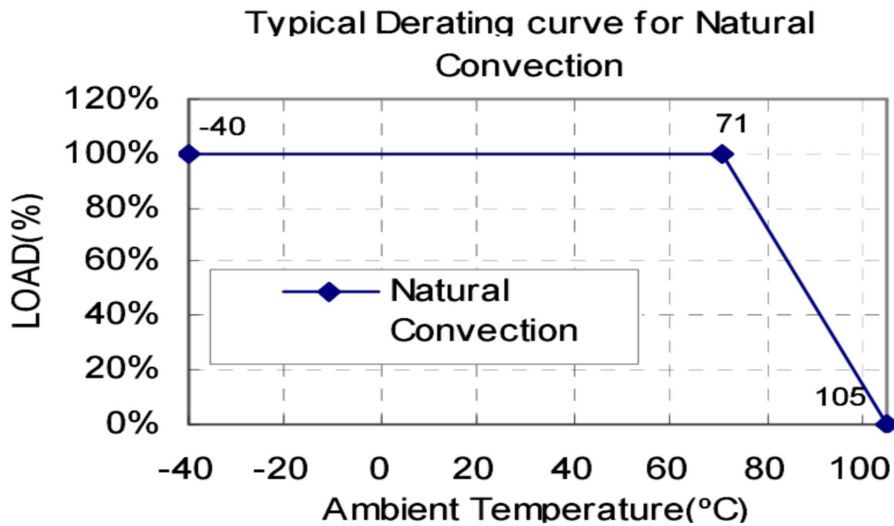
MECHANICAL DIMENSIONS & PIN CONNECTION



Dimensions are in mm(inches shown for ref. only).
Tolerances(unless otherwise specified):
.XX± 0.5(0.02)
.XXX± 0.25(0.010)
Angles± 2°
Components are shown for reference only

Pin Connections	
Pin	Function
1	+Input
2	-Input
3	On/Off Control
4	+12V/15V Output
5	-12V/15V Output
6	Common

Derating Curve



NOTE

1. Measured From High Line to Low Line.
2. Measured From Full Load to min. Load.
3. Maximum case temperature under any operating condition should Not be exceeded 105°C.
4. The output ripple and noise is measured with 10uF tantalum and 1uF Ceramic capacitor across output.
5. All Specifications Typical at Nominal Line, Full Load, and 25°C Unless Otherwise Noted.
6. Positive Logic Remote on/off Control :

Logic Compatibility CMOS or Open Collector TTL

Module ON>+3.5V to $V_{i,max}$ VDC or Open Circuit

Module OFF<1.2VDC