

# Power Solutions for Today's Military

Power Systems from **COTS+** Building Blocks

## HDM

**Triple Output Series  
270V input DC-DC Converter**

- ◆ Three regulated outputs
- ◆ Up to 185W total
- ◆ Fixed frequency operation
- ◆ Parallel with current sharing (main output)
- ◆ Output good signal
- ◆ External synchronization capability
- ◆ Isolated Outputs
- ◆ Logic On/Off
- ◆ Conduction cooled
- ◆ Ruggedized, meets MIL-STD-810C
- ◆ MIL-STD-901C compliant
- ◆ Operating temperature range: -55°C to +95°C
- ◆ MIL-STD-704E compatible



Rantec's 270V HDM series is the basic building block used to develop performance based "Power System Solutions" in today's military environment. Its compact size and high performance make it an ideal element for a distributed power system. Modules can also be configured in series or parallel combinations to develop custom solutions. Using fixed frequency switching technology, HDM series converters incorporate power MOSFETs, planar magnetics, and surface mount technology onto a metal clad PC board. The forward converter topology employs fewer components, which translates into enhanced reliability.

TRIPLE OUTPUT SERIES (185W MAX.) 270V INPUT			
185 W max.	3.3V@30A ±12V@2A	5V@35A ±12V@3A	5V@35A ±15V@3A
MODEL	HDM-3T3-312-01	HDM-3T3-512-01	HDM-3T3-515-01

**Rantec Power Team Staff  
Offers Technical Assistance to:**

Define unique module specifications

Match module performance  
to system requirements



**Rantec Power Systems Inc.**

# HDM

## Triple Output Series 270V input DC-DC converter

INPUT POWER			
	VDC	UNITS	COMMENTS
Voltage Nominal	270	VDC	
Voltage Min	220	VDC	
Voltage Max	400	VDC	
OverVoltage Max	425	VDC	
No Load Power	7.5	watts	
Turn on time	250	mSec.	typical

INPUT CONTROL			
Turn on time, logic	40	mSec.	typical
Logic disabled power in	2	watts	See HDMA-106*
Logic disabled current	2	mA	See HDMA-106*

ISOLATION	
Input-Output	10M Ohms @ 1000VDC min.
Input-Case	10M Ohms @ 1000VDC min.
Output-Case	10M Ohms @ 50VDC min.

FREQUENCY SYNCH (OPTION)				
	MINIMUM	RECOMMENDED	MAXIMUM	COMMENTS
Frequency	330 KHz	350 KHz	370 KHz	See HDMA-102*
Width	50 ns	100 ns	150 ns	
Amplitude	1.0 V	1.5 V	2.0 V	

POWER RATING			
	VDC MAIN	VDC AUX1/AUX2	MAX. WATTS
TRIPLE OUTPUT	5	-12@3A/+12@3A	185

OUTPUT VOLTAGE					
	MIN	TYP	MAX	UNITS	COMMENTS
Set Point		0.50	01.0	± %	Full Load
Set Point - Aux		0.50	01.0	± %	10A Main, Full Load Aux
Trim Adjust - Main		10		± %	See HDMA-104*
Ripple		1	3	% p-p	20MHz bandwidth See HDMA-100*
Ripple - Aux		0.25	0.50	% p-p	

OUTPUT REGULATION					
Line & Load		0.05	0.50	%	See HDMA-105*
Load - Aux		0.20	0.50	%	
Line - Aux		0.01	0.10	%	Load Change 20-80%
Dyn Load - Main			5.00	%	Load Change 20-80%
Dyn Load - Aux			1.00	%	Load Change 20-80%
Dyn Load Recovery			250	uSec.	Triple Main & Aux
Temp Coeff			0.02	%/°C	
Temp Coeff - Aux			0.06	%/°C	

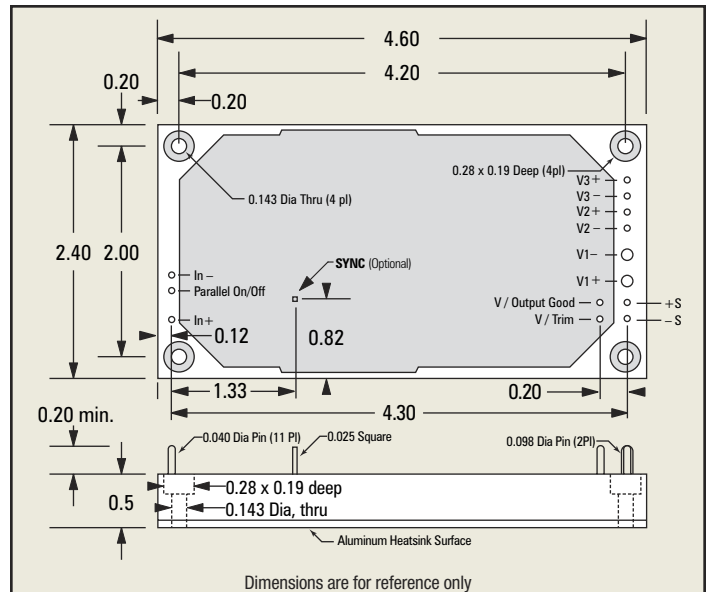
OUTPUT GENERAL					
Operating Frequency		300		KHz	

OUTPUT STATUS					
Output Good Signal		10		±%	Active Low See HDMA-106

OUTPUT PROTECTION					
Overvoltage		120		%	Main Output
Current Limit		115		%	Main Output
Current Share		5		±%	Main Output
Auto Temp Shutdown	100	105	110	°C	Auto Recovery

Mechanical	
I/O Connection	Wave solderable or inserted into mated sockets
Weight	10 oz. max.
Construction	Fully encapsulated

Environmental	
Cooling	Conductively cooled baseplate, +95°C max
Operating Temperature	-55°C to +95°C, combined baseplate and ambient
Storage Temperature	-55°C to +125°C
Humidity	MIL-Std-810C, Meth 507.1, Proc IV (Proc I, II, or III w/optional parylene coating.)
Altitude	up to 70,000 ft
Shock	MIL-S-901C, Grade A, Type A, Class 1 High impact shock
Vibration	MIL-E-5400, Curve IVa, 5 to 2kHz
Salt Fog	MIL-STD-810F, Method 509.4
MTBF	800,000 hours @ 55°C baseplate, ground benign



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