

HDM-200

Single Output Series
270V input DC-DC Converter

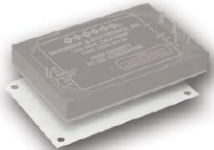
HDM ACCESSORIES



HDF-DC500
DC Input
EFI Filter Module



HDA-MB200
Mounting Board
for Evaluation &
Prototypes

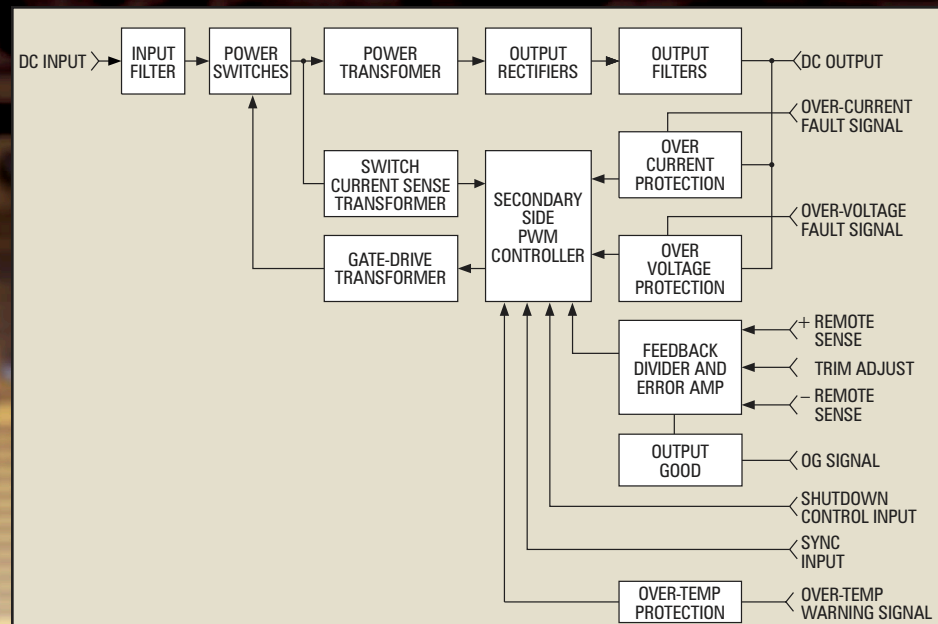


HDM-TI
Thermal Interface

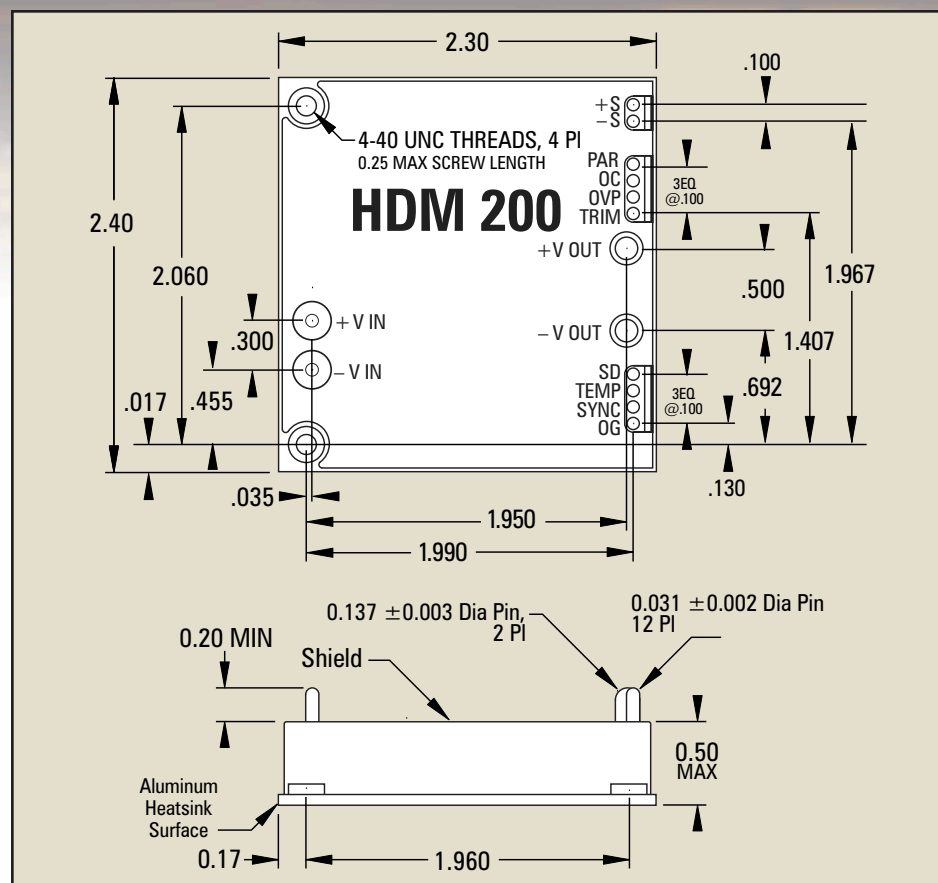


HDM-SK
Socket Kit

Accessory data sheets available at
www.rantec.com



FUNCTIONAL BLOCK DIAGRAM



OUTLINE & MOUNTING DIAGRAM
Dimensions are in inches for reference only

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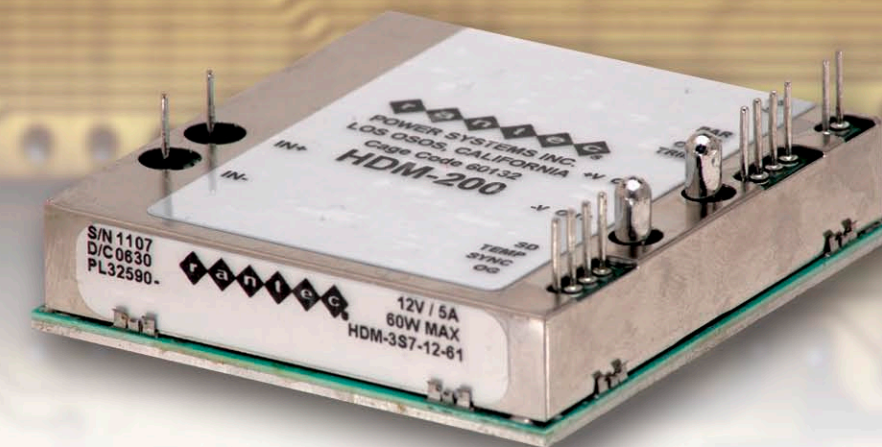
Power Solutions for Today's Military

Power Systems from **COTS+** Building Blocks

HDM-200

Single Output Series
270V input DC-DC Converter

- ◆ Up to 200W output
- ◆ Input to output isolation
- ◆ MIL-STD-704 compliant
- ◆ Secondary side control
- ◆ Fixed frequency operation
- ◆ External synchronization
- ◆ Remote sense compensation
- ◆ Shutdown control
- ◆ Mu metal shield for ultra-low radiated emissions
- ◆ Wide operating temperature range -55°C to +95°C
- ◆ Ruggedized meets MIL-STD-810F
- ◆ Low weight: 3.1 oz. max.
- ◆ NAVSO P-3641A design guideline
- ◆ Custom outputs available—consult Rantec for your unique requirements



Rantec's 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 of a military power conversion application.

The HDM-200 uses fixed frequency switching technology and secondary side control for precision over-current/overvoltage protection set points, superior dynamic line/load response and regulation. This feature rich module includes state-of-health signals, remote sense, output voltage trim adjustment, remote shutdown, and external synchronization capabilities. It is a shielded module that has excellent radiated emissions performance over a non-shielded module, equating to trouble-free system integration.

The System Designer's Choice



Rantec Power Systems Inc.

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Rantec Power Team Engineers
Offer Technical Assistance to:
Evaluate Power System Requirements
Develop Power System Architecture
Reduce Time to Market

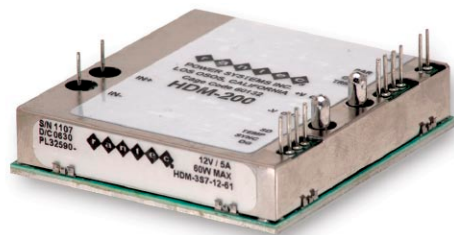


Rantec Power Systems Inc.

HDM-200

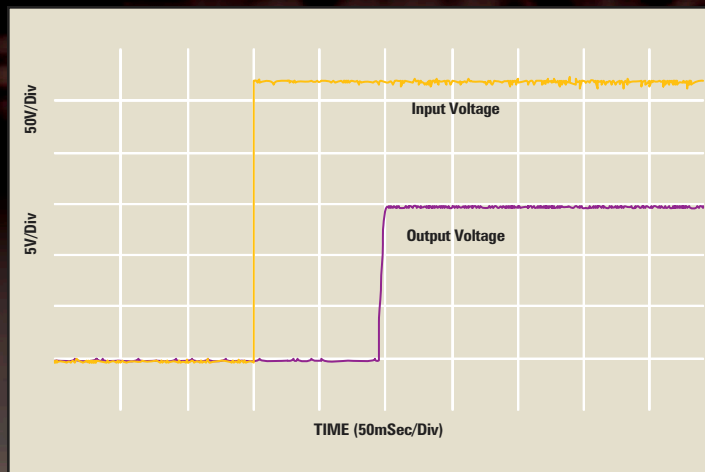
Single Output Series
270V input DC-DC Converter

MODELS

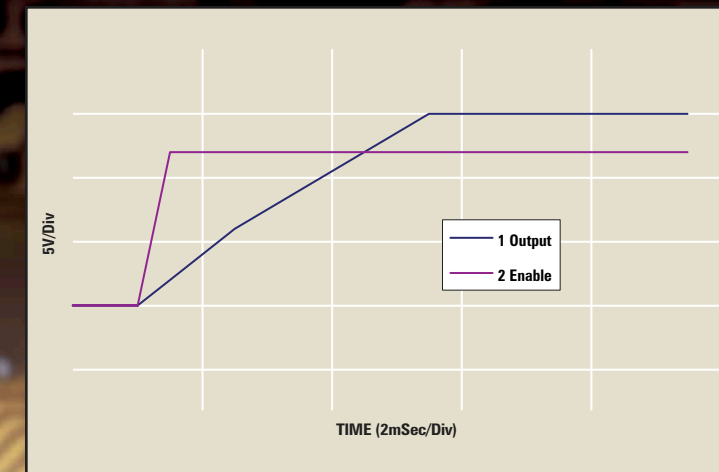


OUTPUT	PART NUMBER
3.3V@50A	HDM-3S7-3.3-01
5V@40A	HDM-3S7-5-01
12V@16.7A	HDM-3S7-12-01
15V@13.3A	HDM-3S7-15-01
28V@7.2A	HDM-3S7-28-01
40V@5A	HDM-3S7-40-01

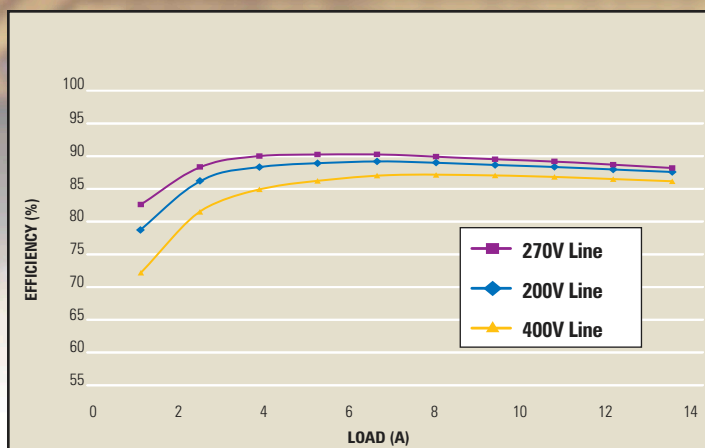
INPUT					
	MIN	TYP	MAX	UNITS	COMMENTS
Voltage	200	270	400	VDC	Steady State (Transients 180-450VDC)
Turn on time		100	400	mS	From Power Applied
			40	mS	From Enable
Switching Frequency		300		KHz	Fixed
ISOLATION					
Input-Output	10MΩ minimum @ 1000VDC				
Input-Case					
Output-Case	10MΩ minimum @ 100VDC				
OUTPUT					
	MIN	TYP	MAX	UNIT	COMMENTS
Set Point		0.5	1.0	± %	Full Load
Regulation - Line & Load		0.5	1.0	± %	Combined
Dynamic Load			5	± %	Deviation from steady state regulation. (0.1A/μS Step, 20-80% for modules >5Vout, 60-80% for modules ≤5.0V) 250 μS recovery time to steady state range
Ripple		0.5	1.0	% p-p	20MHz BW
Turn on Overshoot			5	%	
Remote Sense Compensation			10	%	
Temp Coefficient			0.02	%/°C	
Trim Adjust			10	±%	Total adjustment including Sense Compensation. See App Note HDMA-104
OUTPUT PROTECTION					
Overvoltage	115	–	120	%	Non-Shutdown
Overcurrent	110	–	130	%	Auto Recovery
Overtemperature	100	105	110	°C	Shutdown, autorecovery
LOGIC / FEATURES					
Shutdown Control					Low=Unit off; High=On
Output Good			10	±%	Low=Good; High=Fault
Overcurrent Condition					
Overvoltage Condition					
Overtemperature Warning		100		°C	
*All "open collector," referenced to –Sense. Consult factory for more information.					
FREQUENCY SYNC					
Frequency	330	350	370	KHz	See HDMA-102*
Width	50	100	150	nS	
Amplitude	1.0	1.5	2.0	V	
MECHANICAL					
I/O Connection	Hand or wave solderable or insert into mated sockets. See Ap Notes HDMA-108 or HDMA-111				
Weight	3.1 oz. max.				
Construction	Surface mount, conformally coated. Mu-metal shield.				
ENVIRONMENTAL					
Cooling	Conductively cooled +95°C max, baseplate				
Operating Temperature	–55°C to +95°C, baseplate				
Storage Temperature	–55°C to +125°C				
EMI	Mu metal shield, electric & magnetic shielding				
Humidity	MIL-STD-810F, Meth 507.4				
Altitude	up to 70,000 ft				
Shock	MIL-S-901D, Grade A, Class 1, Type A				
Vibration	MIL-E-5400T, Curve IVa, 5 to 2KHz				
Salt Fog	MIL-STD-810F, Method 509.4				
MTBF	1,176,817 hours @ 55°C baseplate, ground benign				
*Consult factory for application notes (also available online at www.rantec.com)					



TURN-ON TIME
Power Applied



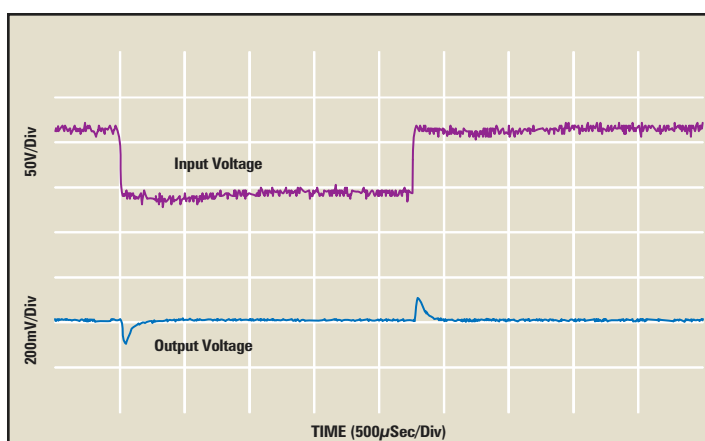
TURN-ON TIME
Logic Enabled, 15Vout Model



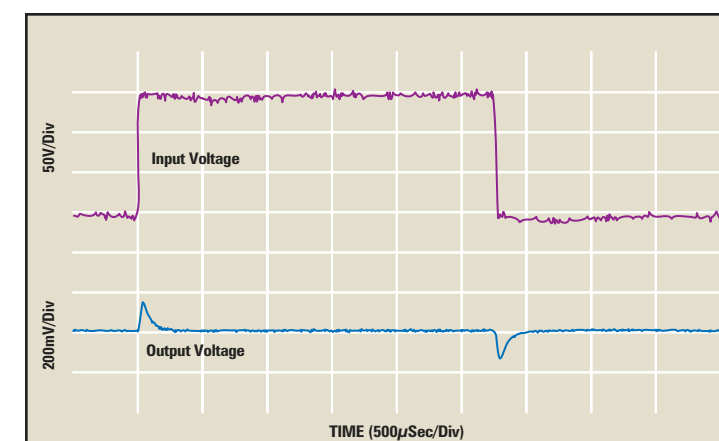
EFFICIENCY VS LOAD
Temperature 25°C, 12Vout Model



DYNAMIC LOAD
12Vout Model



TRANSIENT LINE
Input 270 to 180VDC, Output 12VDC



TRANSIENT LINE
Input 250 to 400VDC, Output 12VDC