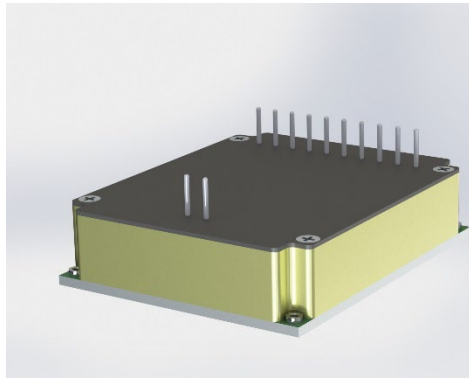




# MDC605 SERIES

Datasheet Rev A 3/15/23

## DC/DC CONVERTER WITH 5 ISOLATED OUTPUTS



- Five Fully Isolated Outputs
- Small Profile
- MIL-STD-810F Compliant
- High Efficiency >80% Full Load
- MIL-STD-461E/F Compliance for EMI
- MIL-STD-704D and 1275A for Input Transients
- Onboard Protection Features

### DESCRIPTION:

This compact, ruggedized, multi-output design utilizes Active Clamp Forward Converters with Synchronous Output Rectification to achieve the highest possible efficiency. It has five fully isolated outputs with all protection features included in a small profile rugged aluminum enclosure. Features include; output over voltage, over current and over temperature protection. This converter also has built-in MIL-STD-461E/F EMI filtering.

<u>GENERAL SPECIFICATIONS</u>					
<b>INPUT VOLTAGE</b>	18 - 40 VDC				
<b>OPERATING FREQUENCY</b>	300 KHz - 500 KHz				
<b>*OUTPUT VOLTAGE / CURRENT</b>	<b>OUT1</b>	<b>OUT2</b>	<b>OUT3</b>	<b>OUT4</b>	<b>OUT5</b>
PN: MDC605-101	+5V/3A	+5V/3A	+5V/3A	12V/1A	-5V/0.6A
<b>OUTPUT POWER, MAX</b>	15W	15W	15W	15W	5W
<b>PHYSICAL SIZE</b>	68.07mm L x 55.63mm W x 16.00mm H				
<b>OPERATING TEMPERATURE</b>	-55 C to +85 C (Baseplate)				
<b>WEIGHT</b>	< 120g				
<b>MTBF</b>	>150,000 hours, calculated per MIL-STD-217F				

\*: OTHER OUTPUTS AVAILABLE

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<b><u>PHYSICAL CHARACTERISTICS</u></b>	
<b>MAXIMUM CASE SIZE</b>	68.07mm L x 55.63mm W x 16.00mm H
<b>COOLING METHOD</b>	Conduction
<b>ENCAPSULATION</b>	Conformal Coat
<b>ENCLOSURE FINISH</b>	Yellow Chromate
<b>BASEPLATE FINISH</b>	5052 Aluminum
<b>INPUT/OUTPUT TERMINATION</b>	.040" Gold Plated Brass Pins
<b>MOUNTING</b>	(4x) M2 through
<b>WEIGHT</b>	< 120g

<b><u>ELECTRICAL SPECIFICATIONS</u></b>	
<b>LINE REGULATION</b>	1% (Lo Line to Hi Line)
<b>LOAD REGULATION</b>	1.0% (1/2-FL W/SENSE)
<b>PARD (RIPPLE NOISE)</b>	30.0mVp-p typical (1% max.) all outputs
<b>OVERCURRENT SETPOINT</b>	Approx. 150% from nominal for each output
<b>SHORT CIRCUIT OUTPUT</b>	<10.0% from nominal for each of outputs, indefinitely
<b>OVERVOLTAGE PROTECTION</b>	Input- 80V 100mS/100V 50ms; Outputs – 120%, passive
<b>REVERSE POLARITY</b>	-40Vdc, Indefinite
<b>LOAD STEP RECOVERY</b>	<10% of nom. Vout for 200ms (1/2 to F.L.)
<b>TURN-ON OVERSHOOT</b>	<10% Vout nom for every output
<b>EFFICIENCY (MIN)</b>	> 80%
<b>ISOLATION</b>	200Vdc between primary input and output and between outputs
<b>EMI FILTERING</b>	MIL-STD-461E/F for CE101 and CE102
<b>OUTPUT POWER</b>	Varies by configuration up to 60W

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<b><u>ENVIRONMENTAL SPECIFICATIONS*</u></b>		
<b>ALTITUDE</b>	MIL-STD-810F	Method 500.1, Procedure 1
<b>HIGH TEMPERATURE</b>	MIL-STD-810F	Method 501.4 Procedure 1 & 2
<b>LOW TEMPERATURE</b>	MIL-STD-810F	Method 502.4 Procedure 1 & 2
<b>HUMIDITY</b>	MIL-STD-202G	Method 103B
<b>FUNGUS</b>	MIL-STD-810F	Method 508, Condition A
<b>SALT FOG</b>	MIL-STD-202G	Method 101 E, Test Condition A
<b>SAND AND DUST</b>	MIL-STD-810F	Method 501.4, Procedure 1 & 2
<b>EXPLOSIVE ATMOSPHERE</b>	MIL-STD-810F	Method 511, Condition A
<b>ACCELERATION</b>	MIL-STD-810F	Method 513.5, Procedure 1 & 2
<b>VIBRATION</b>	MIL-STD-810F	Method 514.2
<b>SHOCK</b>	MIL-STD-883	Method 2002.4

\*Designed to Meet

<b><u>TEMPERATURE SPECIFICATIONS</u></b>	
<b>OPERATING TEMPERATURE</b>	-55 C to +85 C (Baseplate)
<b>STORAGE TEMPERATURE</b>	-55 C to +125 C
<b>THERMAL SHUTDOWN</b>	Shut Down: + 105°C (±5° C) Auto Recovery: <95°C(±5°C)
<b>POWER DERATING</b>	Full Rated Power at: +85 C Baseplate Derate > +85 C Baseplate: 2.0 W/°C
<b>TEMPERATURE COEFFICIENT</b>	.02%/°C

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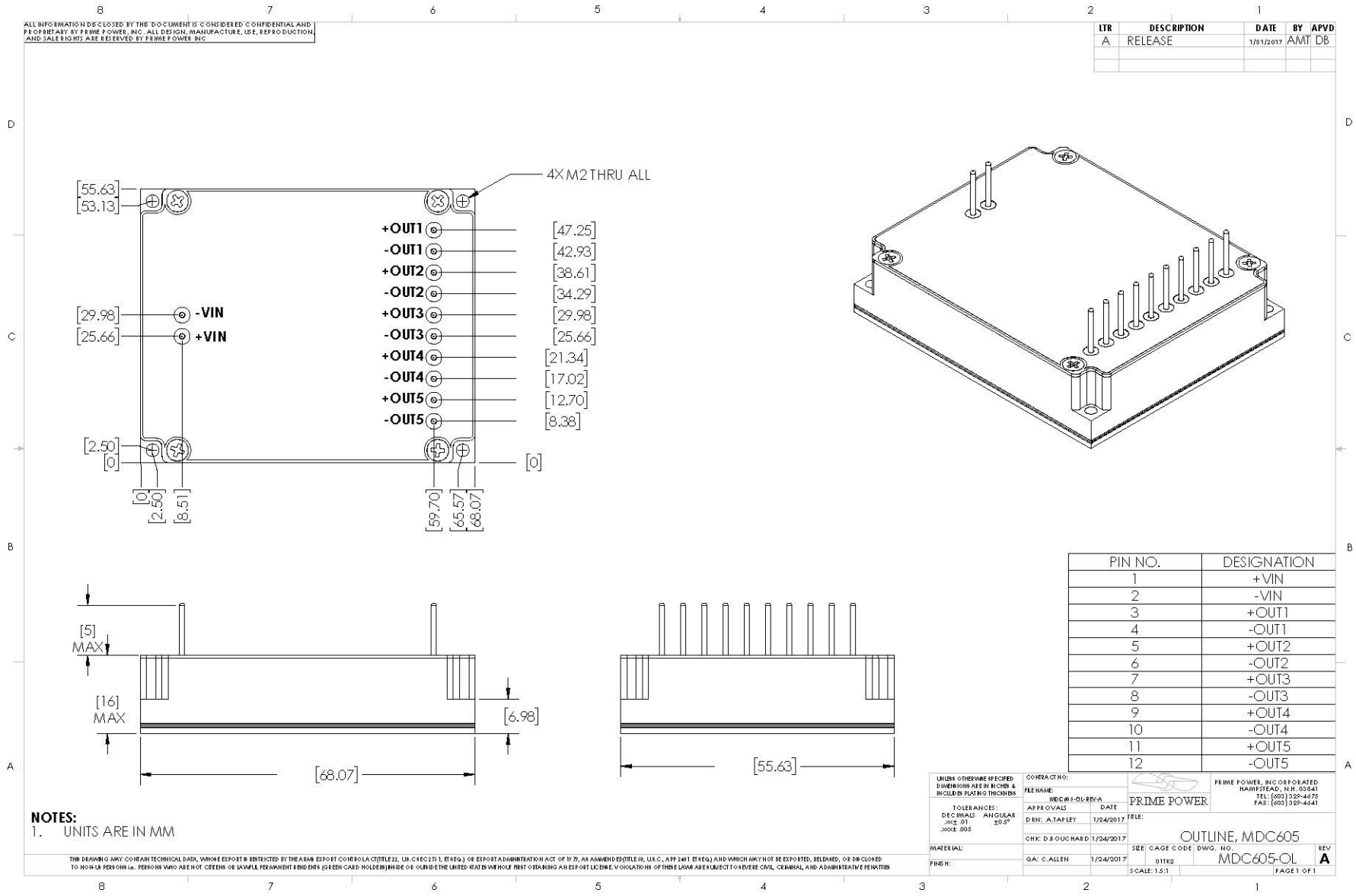
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