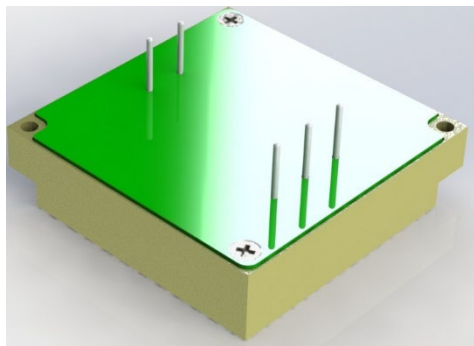




# MDC402 SERIES

Datasheet Rev A 3/15/23

## DUAL OUTPUT DC/DC CONVERTER



- Dual Outputs
- Small Footprint, Low Profile 12.5mm Height
- MIL-STD-810F Compliant
- Efficiency >85% Full Load
- MIL-STD-461E Compliance for EMI
- 1275A for Input Transients
- Onboard Protection Features

### DESCRIPTION:

This compact, ruggedized, dual output design utilizes an Active Clamp Forward converter topology with Synchronous Output Rectification to achieve the highest possible efficiency. This power supply has built-in MIL-STD-461E/F EMI filtering including output over voltage, over current, over temperature, and input surge protections. All fitting in a rugged aluminium enclosure that is under a half an inch tall (12.5mm).

<b>GENERAL SPECIFICATIONS</b>		
<b>INPUT VOLTAGE</b>	18 - 40 VDC	
<b>FREQUENCY RANGE</b>	300 - 500KHz	
<b>*OUTPUT VOLTAGE / CURRENT</b>	<b>OUT 1</b>	<b>OUT 2</b>
PN: MDC402-101	5V / 4A	5V / 4A
<b>OUTPUT POWER (Max)</b>	Up to 20W	Up to 20W
<b>PHYSICAL SIZE</b>	1.99" (50.5mm) L x 1.99" (50.5mm) W x 0.49" (12.5mm) H	
<b>OPERATING TEMPERATURE</b>	-55 C to +85 C	
<b>WEIGHT</b>	< 50g	
<b>MTBF</b>	>150,000 hours, calculated per MIL-STD-217F	

\*: OTHER OUTPUTS AVAILABLE

[WWW.PRIME-POWER.COM](http://WWW.PRIME-POWER.COM)

[SALES@PRIME-POWER.COM](mailto:SALES@PRIME-POWER.COM)

PRIME POWER INC: (603) 329-4675.  
1 OWENS CT.  
HAMPSTEAD NH, 03841.



# MDC402 SERIES

Datasheet Rev A 3/15/23

## DUAL OUTPUT DC/DC CONVERTER

<b>PHYSICAL CHARACTERISTICS</b>	
<b>MAXIMUM CASE SIZE</b>	1.99" (50.5mm) L x 1.99" (50.5mm) W x 0.49" (12.5mm) H
<b>COOLING METHOD</b>	Conduction
<b>ENCAPSULATION</b>	Conformal Coat
<b>ENCLOSURE FINISH</b>	Yellow Chromate
<b>BASEPLATE FINISH</b>	N/A
<b>INPUT/OUTPUT TERMINATION</b>	.040" Gold Plated Brass Pins
<b>MOUNTING</b>	(2x) M2 through
<b>WEIGHT</b>	< 50g

<b>ELECTRICAL SPECIFICATIONS</b>	
<b>LINE REGULATION</b>	1% (Lo Line to Hi Line)
<b>LOAD REGULATION</b>	1% (1/2-FL W/SENSE)
<b>PARD (RIPPLE NOISE)</b>	20.0mVp-p typical (1% max.)
<b>OVERCURRENT SETPOINT</b>	150% typ (from nom.)
<b>OVERVOLTAGE PROTECTION</b>	>50V no dam./80V 100mS/100V 50ms; 120% of nom., passive
<b>REVERSE POLARITY</b>	-40Vdc, Indefinite
<b>LOAD STEP RECOVERY</b>	<10% of nom. Vout for 200ms (1/2 to F.L.)
<b>EFFICIENCY (TYP.)</b>	>85% at maximum load
<b>ISOLATION</b>	200Vdc between primary input and output and case
<b>EMI FILTERING</b>	MIL-STD-461E/F for CE101 and CE102



# MDC402 SERIES

Datasheet Rev A 3/15/23

## DUAL OUTPUT DC/DC CONVERTER

<b>*ENVIRONMENTAL SPECIFICATIONS</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>TEMPERATURE SPECIFICATIONS</b>	
<b>OPERATING TEMPERATURE</b>	-55 C to +85 C
<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

[WWW.PRIME-POWER.COM](http://WWW.PRIME-POWER.COM)

[SALES@PRIME-POWER.COM](mailto:SALES@PRIME-POWER.COM)

PRIME POWER INC: (603) 329-4675.  
1 OWENS CT.  
HAMPSTEAD NH, 03841.



# MDC402 SERIES

## DUAL OUTPUT DC/DC CONVERTER

