

# Series 6031A

## 100 Watt Hybrid DC – DC Converters

### Features

- Specifically designed for redundant or individual military or aerospace applications
- Completely self contained Thick Film Hybrid DC–DC Converter
- No external filter caps required
- Fully isolated design
- "Inhibit-not" function
- Power on soft start
- Magnetically coupled feedback for excellent dynamic load response
- Built-in EMI input filter meets MIL-STD-461C requirements CE01, CE03, CS01, CS02 and CS06
- Short circuit and overvoltage protection
- Capability of external sync for switching frequencies
- Built-in test capability

### Specifications

**INPUT:** 28 VDC nominal  
 Range: 16 to 50 VDC continuous  
 18 to 50 VDC full power  
 Survives 80 V transients/MIL-STD-704A

#### ISOLATION:

Input to case: 500 VDC  
 Input to output: 500 VDC  
 Output to case: 100 VDC

#### ENVIRONMENT:

Storage temperature: -55°C to +150°C  
 Shock: 50 G's  
 Acceleration: 500 G's  
 Vibration: 30 G's

#### Grades: Industrial:

Full Power Output at  $T_{case} = +85^{\circ}C$   
 Lineary derates to zero at  $T_{case} = +115^{\circ}C$

#### Grades M:

Full Power Output at  $T_{case} = +85^{\circ}C$   
 Lineary derates to zero at  $T_{case} = +115^{\circ}C$

#### Grades E:

Full Power Output at  $T_{case} = +125^{\circ}C$   
 Lineary derates to zero at  $T_{case} = +135^{\circ}C$

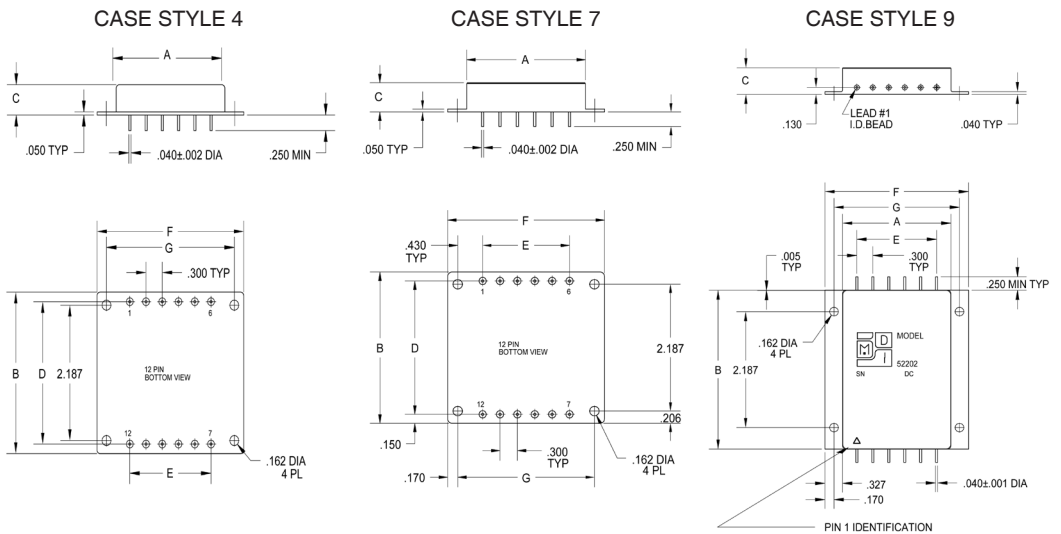
#### WEIGHT: 175 grams typical

SINGLE OUTPUT DEVICES		6031A-S05 (100W)			6031A-S05.2 (100W)			6031A-S12 (100W)			6031A-S15 (100W)		
PARAMETER	CONDITION	MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX
Output voltage	—	+4.9	+5.0	+5.1	+5.1	+5.2	+5.3	+11.9	+12.0	+12.1	+14.9	+15.0	+15.1
Output current	$V_{in min} - V_{in max}$	—	—	20A	—	—	19A	—	—	8.33A	—	—	6.6A
Efficiency	$P_{out} = \text{max rated load}$	70%	73%	—	70%	73%	—	78%	81%	—	78%	82%	—
Line regulation	$P_{out} = \text{max rated load}$ $V_{in min} - V_{in max}$	—	10mV	50mV	—	10mV	50mV	—	20mV	100mV	—	25mV	125mV
Load regulation	$P_{out} = 10\% \text{ to F.L.}$	—	10mV	50mV	—	10mV	50mV	—	20mV	100mV	—	25mV	125mV
Output ripple	F.L. BW 2 MHz mV <sub>pp</sub>	—	40	85	—	40	85	—	60	150	—	75	180

SINGLE OUTPUT DEVICES		6031A-S28 (100W)		
PARAMETER	CONDITION	MIN	TYP	MAX
Output voltage	—	+27.8	+28.0	+28.2
Output current	$V_{in min} - V_{in max}$	—	—	3.6A
Efficiency	$P_{out} = \text{max rated load}$	84%	87%	—
Line regulation	$P_{out} = \text{max rated load}$ $V_{in min} - V_{in max}$	—	50mV	250mV
Load regulation	$P_{out} = 10\% \text{ to F.L.}$	—	50mV	250mV
Output ripple	F.L. BW 2 MHz mV <sub>pp</sub>	—	150	350

Model No.	Case Style	Pin Count	Mounting
6031A	4	12	Solder Sealed PCB Mount with Flange
6031A	LF	12	Seam Weld PCB Mount with Flange
6031A	ZF	12	Seam Weld PCB Chassis Mount with Flange
6031A	PD	11	Solder Sealed Flangeless PCB Stud Mount

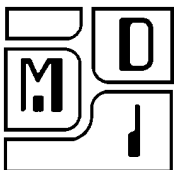


### Case Dimensions

Units: inches | millimeters

TOLERANCES: ALL DIMENSIONS ±0.01 EXCEPT F= MAX. C = +0.01/-0.02; DRAWINGS IN INCHES.

Case Style	A	B	C	D	E	F	G
4	2.040   51.816	2.610   66.294	0.495   12.573	2.300   58.420	1.500   38.100	2.710   68.834	2.360   59.944
7	2.040   51.816	2.610   66.294	0.495   12.573	2.300   58.420	1.500   38.100	2.710   68.834	2.360   59.944
9	2.040   51.816	3.010   76.454	0.495   12.573	—   —	1.500   38.100	2.710   68.834	2.360   59.944
11	2.040   51.816	2.610   66.264	0.495   12.573	2.300   58.420	1.500   38.100	—   —	—   —



# Series 6031A

## Full Feature Series

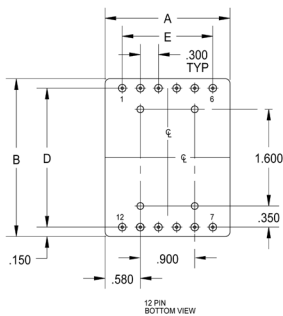
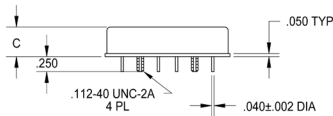
DUAL OUTPUT DEVICES		6031A-D05 (100W)			6031A-D12 (100W)			6031A-D15 (100W)		
PARAMETER	CONDITION	MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX
Output voltage	—	+4.9	+5.0	+5.1	+11.9	+12.0	+12.1	+14.9	+15.0	+15.1
		-4.9	-5.0	-5.1	-11.9	-12.0	-12.1	-14.9	-15.0	-15.1
Output current*	$V_{in\ min} - V_{in\ max}$	±266mA	—	±10A	±158mA	—	±4.15A	±127mA	—	±3.3A
Efficiency	$P_{out} = \text{max rated load}$	78%	80%	—	78%	81%	—	78%	82%	—
Line regulation	$P_{out} = \text{max rated load}$ $V_{in\ min} - V_{in\ max}$	—	±10mV	±50mV	—	±20mV	±100mV	—	±25mV	±125mV
Load regulation <sup>†</sup>	$P_{out} = 10\% \text{ to F.L.}$	—	±10mV	±50mV	—	±20mV	±100mV	—	±25mV	±125mV
Output ripple	F.L. BW 2 MHz mV <sub>pp</sub>	—	40	85	—	60	150	—	75	180

Notes: \*Up to 90% full power available from either output if rated output power is not exceeded; <sup>†</sup>balanced load conditions.



28 Volts DC Input

### CASE STYLE 11



#### 6031A-SXX output < 24VDC

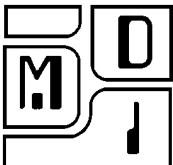
Pin 1	Bit	Pin 7	N/C
Pin 2	Inhibit Not	Pin 8	Main Output
Pin 3	Soft Start	Pin 9	Main Output Ret
Pin 4	Sync	Pin 10	+Remote Sense
Pin 5	+Input	Pin 11	Adjust
Pin 6	Input Ret	Pin 12	-Remote Sense

#### 6031A-SXX output ≥ 24 VDC

Pin 1	Bit	Pin 7	N/C
Pin 2	Inhibit Not	Pin 8	N/C
Pin 3	Soft Start	Pin 9	N/C
Pin 4	Sync	Pin 10	Main Output
Pin 5	+Input	Pin 11	N/C
Pin 6	Input Ret	Pin 12	Main Output Ret

#### 6031A-DXX

Pin1	Bit	Pin 7	N/C
Pin 2	Inhibit Not	Pin 8	N/C
Pin 3	Soft Start	Pin 9	N/C
Pin 4	Sync	Pin10	+Dual Output
Pin 5	+Input	Pin 11	Dual Output Rtn
Pin 6	Input Ret	Pin 12	-Dual Output



Please specify **GRADE LEVEL** for your application. **INDUSTRIAL** grade units will be shipped if no option is specified.

**M**, +85°C military/aerospace    **E**, +125°C military/aerospace