12.5–30 Watt Hybrid

Features

- Specifically designed for aircraft 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
- 200 kHz operation for low ripple and fast response time
- 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

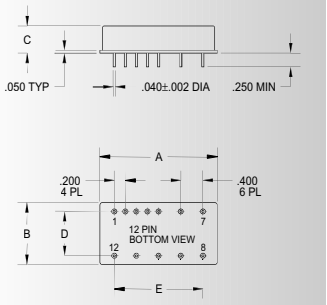
INPUT: 270 VDC nominal
Range: 185 to 335 VDC continuous
Survives 440 V transients
ISOLATION:
Input to case: 500 VDC
Input to output: 500 VDC
Output to case: 100 VDC
ENVIRONMENT:
Storage temperature: -55°C to +150°C
Shock: 50 G's
Acceleration: 500 G's
Vibration: 30 G's
Grade M:
Full Power Output at T_{case} = +85°C
Linearly derates to zero at T_{case} = +115°C
Grade E:
Full Power Output at T_{case} = +125°C
Linearly derates to zero at T_{case} = +135°C
WEIGHT: 75 grams typical

SINGLE OUTPUT DEVICES		3000-S03.3 (20W)			3000-S05 (30W)			3000-S05.2 (30W)			3000-S12 (30W)		
PARAMETER	CONDITION	MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX
Output voltage	—	+3.2	+3.3	+3.4	+4.9	+5.0	+5.1	+5.1	+5.2	+5.3	+11.9	+12.0	+12.1
Output current	$V_{in\ min}$ — $V_{in\ max}$	—	—	6.06A	—	—	6A	—	—	5.76A	—	—	2.5A
Efficiency	P_{out} = max rated load	66%	69%	—	71%	74%	—	71%	74%	—	78%	82%	—
Line regulation	P_{out} = max rated load, $V_{in\ min}$ — $V_{in\ max}$	—	10mV	30mV	—	10mV	50mV	—	10mV	50mV	—	20mV	100mV
Load regulation	P_{out} = 10% to F.L.	—	10mV	30mV	—	10mV	50mV	—	10mV	50mV	—	20mV	100mV
Output ripple	F.L. BW 2 MHz, mV_{pp}	—	30	65	—	40	85	—	40	85	—	60	150

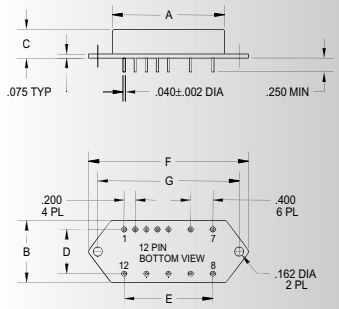
SINGLE OUTPUT DEVICES		3000-S15 (30W)			3000-S28 (30W)		
PARAMETER	CONDITION	MIN	TYP	MAX	MIN	TYP	MAX
Output voltage	—	+14.9	+15.0	+15.1	+27.8	+28.0	+28.2
Output current	$V_{in\ min}$ — $V_{in\ max}$	—	—	2A	—	—	1.07A
Efficiency	P_{out} = max rated load	79%	83%	—	78%	82%	—
Line regulation	P_{out} = max rated load, $V_{in\ min}$ — $V_{in\ max}$	—	25mV	125mV	—	50mV	250mV
Load regulation	P_{out} = 10% to F.L.	—	25mV	125mV	—	50mV	250mV
Output ripple	F.L. BW 2 MHz, mV_{pp}	—	75	180	—	150	350

Model No.	Case Style	Pin Count	Mounting
3000	2	12	Solder Sealed Flangeless PCB Mount
3000 F	3	12	Solder Sealed PCB Mount with Flange
3000 I	5	12	Seam Weld Flangeless PCB Mount
3000 IF	6	12	Seam Weld PCB Mount with Flange
3000 WF	8	12	Seam Weld Chassis Mount with Flange
3000 PB	10	12	Solder Sealed Flangeless PCB Stud Mount
3000 PE	12	12	Seam Weld Flangeless PCB Stud Mount

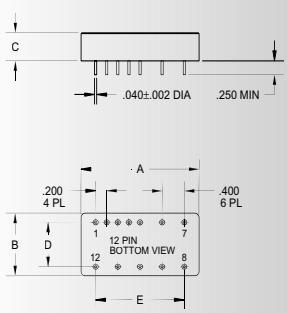
CASE STYLE 2



CASE STYLE 3



CASE STYLE 5



Case Dimensions

Units: inches | millimeters

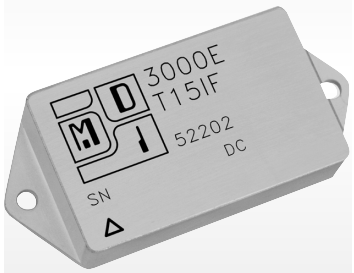
TOLERANCES: ALL DIMENSIONS ±0.01 EXCEPT F = MAX, C = +0.01/-0.02; **DRAWINGS IN INCHES**.

Case Style		A	B	C	D	E	F	G
2		2.200 | 55.880	1.350 | 34.290	0.495 | 12.573	1.000 | 25.400	1.600 | 40.640	— | —	— | —
3	F	2.200 | 55.880	1.350 | 34.290	0.495 | 12.573	1.000 | 25.400	1.600 | 40.640	2.960 | 75.184	2.610 | 66.294
5	I	2.225 | 56.515	1.350 | 34.290	0.495 | 12.573	1.000 | 25.400	1.600 | 40.640	— | —	— | —
6	IF	2.225 | 56.515	1.350 | 34.290	0.495 | 12.573	1.000 | 25.400	1.600 | 40.640	2.960 | 75.184	2.610 | 66.294
8	WF	2.225 | 56.515	1.710 | 43.434	0.495 | 12.573	— | —	1.600 | 40.640	2.960 | 75.184	2.610 | 66.294
10	PB	2.225 | 56.515	1.350 | 34.290	0.495 | 12.573	1.000 | 25.400	1.600 | 40.640	— | —	— | —
12	PE	2.225 | 56.515	1.350 | 34.290	0.495 | 12.573	1.000 | 25.400	1.600 | 40.640	— | —	— | —

DC-DC CONVERTERS
FULL FEATURE SERIES 3000

DUAL OUTPUT DEVICES		3000-D3.3/5 (14.9W)			3000-D05 (30W)			3000-D12 (30W)			3000-D15 (30W)		
PARAMETER	CONDITION	MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX
Output voltage	$+I_{out} = -I_{out}$	+3.2	+3.3	+3.4	+4.9	+5.0	+5.1	+11.9	+12.0	+12.1	+14.9	+15.0	+15.1
		+4.9	+5.0	+5.1	-4.9	-5.0	-5.1	-11.9	-12.0	-12.1	-14.9	-15.0	-15.1
Output current*	$V_{in\ min} — V_{in\ max}$	300mA	—	3A	±150mA	—	±3A	±95mA	—	±1.25A	±76mA	—	±1A
		100mA	—	1A									
Efficiency	P_{out} = max rated load	63%	66%	—	72%	76%	—	78%	82%	—	79%	83%	—
Line regulation	P_{out} = max rated load	—	10mV	30mV	—	±10mV	±50mV	—	±20mV	±100mV	—	±25mV	±125mV
	$V_{in\ min} — V_{in\ max}$	—	10mV	50mV									
Load regulation†	P_{out} = 10% to F.L.	—	10mV	30mV	—	±10mV	±50mV	—	±20mV	±100mV	—	±25mV	±125mV
		—	10mV	50mV									
Output ripple	F.L. BW 2 MHz	—	30	65	—	40	85	—	60	150	—	75	180
	mV_{pp}	—	25	50									

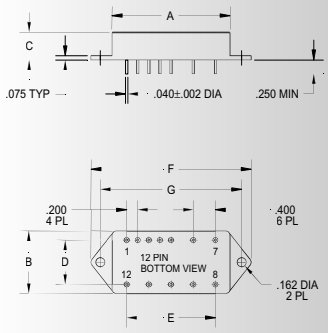
*Notes: *Up to 90% full power available from either output if rated output power is not exceeded; †balanced load conditions.*



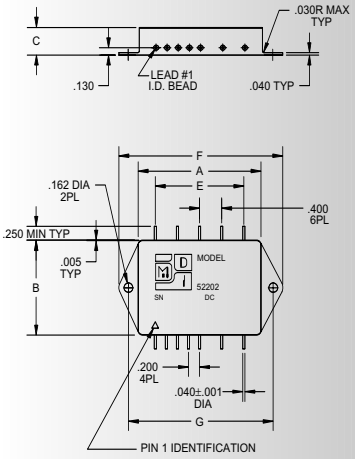
270 VDC

TRIPLE OUTPUT DEVICES		3000-T3.3/5 (12.5W)			3000-T3.3/12 (17.5W)			3000-T3.3/15 (17.5W)			3000-T05 (12.5W)			3000-T12 (17.5W)			3000-T15 (17.5W)		
PARAMETER	CONDITION	MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX
Output voltage	$+I_{out} = -I_{out}$	+3.2	+3.3	+3.4	+3.2	+3.3	+3.4	+3.2	+3.3	+3.4	+4.9	+5.0	+5.1	+4.9	+5.0	+5.1	+4.9	+5.0	+5.1
		+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
		-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	$V_{in\ min} — V_{in\ max}$	300mA	—	3A	300mA	—	3A	300mA	—	3A	90mA	—	2A	90mA	—	2A	90mA	—	2A
		±40mA	—	±250mA	±40mA	—	±312mA	±32mA	—	±250mA	±40mA	—	±250mA	±40mA	—	±312mA	±32mA	—	±250mA
Efficiency	P_{out} = max rated load	66%	69%	—	66%	69%	—	66%	69%	—	66%	69%	—	71%	74%	—	71%	74%	—
Line regulation	P_{out} = max rated load	—	10mV	50mV	—	10mV	50mV	—	10mV	50mV	—	10mV	50mV	—	10mV	50mV	—	10mV	50mV
	$V_{in\ min} — V_{in\ max}$	—	25mV	50mV	—	25mV	50mV	—	25mV	50mV	—	25mV	50mV	—	25mV	50mV	—	25mV	50mV
Load regulation	P_{out} = 10% to F.L.	—	10mV	50mV	—	10mV	50mV	—	10mV	50mV	—	10mV	50mV	—	10mV	50mV	—	10mV	50mV
		—	25mV	50mV	—	25mV	50mV	—	25mV	50mV	—	25mV	50mV	—	25mV	50mV	—	25mV	50mV
Output ripple	F.L. BW 2 MHz	—	30	65	—	30	65	—	30	65	—	40	85	—	40	85	—	40	85
	mV_{pp}	—	—	50	—	—	50	—	—	50	—	—	50	—	—	50	—	—	50

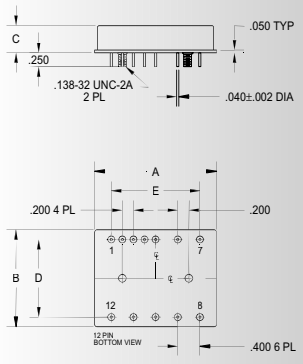
CASE STYLE 6



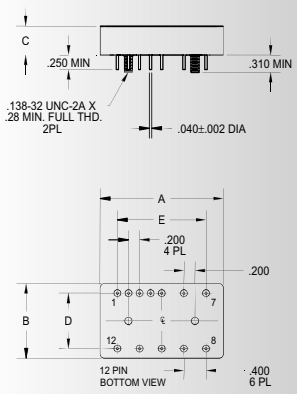
CASE STYLE 8



CASE STYLE 10



CASE STYLE 12



3000-SXX output <24 VDC				3000-SXX output ≥24 VDC				3000-DXX				3000-TXX			
Pin 1	bit	Pin 7	+ input	Pin 1	bit	Pin 7	+ input	Pin 1	bit	Pin 7	+ input	Pin 1	bit	Pin 7	+ input
Pin 2	inhibit not	Pin 8	main output	Pin 2	inhibit not	Pin 8	N/C	Pin 2	inhibit not	Pin 8	N/C	Pin 2	inhibit not	Pin 8	main output
Pin 3	soft start	Pin 9	main output ret	Pin 3	soft start	Pin 9	N/C	Pin 3	soft start	Pin 9	N/C	Pin 3	soft start	Pin 9	main output ret
Pin 4	sync	Pin 10	+ remote sense	Pin 4	sync	Pin 10	main output	Pin 4	sync	Pin 10	+ dual output	Pin 4	sync	Pin 10	+ dual output
Pin 5	N/C	Pin 11	adjust	Pin 5	N/C	Pin 11	N/C	Pin 5	N/C	Pin 11	dual output ret	Pin 5	N/C	Pin 11	dual output ret
Pin 6	input ret	Pin 12	- remote sense	Pin 6	input ret	Pin 12	main output ret	Pin 6	input ret	Pin 12	- dual output	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
E +125°C military