

2 WATT DC – DC CONVERTERS

-55°C to 185°C OPERATION



28 VOLTS DC INPUT

This DC-DC Converter is recommended for space applications requiring good efficiency at low power as well as a small package size.

Features

- Efficiency Optimized for low power applications
- GaN switching transistor at fixed 250 kHz. for low ripple
- Magnetically coupled regulation
- "Inhibit-not"
- Internal soft start
- Input – Output Isolated

Specifications

INPUT: 28 VDC nominal
Range: 16 to 50 VDC

ISOLATION:

10 Megohms
Input to case: 500 VDC
Input to output: 500 VDC
Output to case: 500 VDC

ENVIRONMENT:

Case Temperature Range:
Operating -55°C to 185°C
Storage: -65°C to +185°C
Shock: MIL-STD-810 Method 516.5 Procedure III
Random Vibration: MIL-STD-883 Method 2026, test condition 2H
Acceleration: MIL-STD 883 Method 2001, test condition A1, Y1 direction, 500G's
Grades , L & S:
Full Output Power at $T_{case} = +185^{\circ}C$
Grade, T
Full Power Output at $T_{case} = +185^{\circ}C$

To operate converter, open inhibit-not pin
To inhibit converter, connect inhibit-not pin to input return
If needed use EMI Filter MDI Model 3747 available separately

WEIGHT: 18 grams typical



Modular Devices, Inc.
Power Conversion for Space and Military/Aerospace

Modular Devices, Inc • One Roned Road • Shirley, New York 11967 • E-mail sales@mdipower.com • Fax 631.345.3106 • Tel 631.345.3100

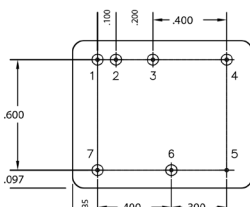
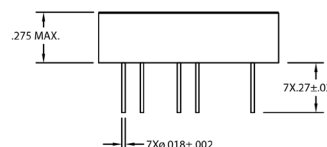
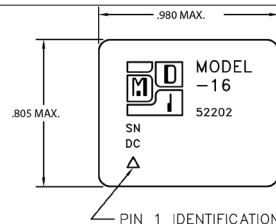
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MODEL 3773

SINGLE OUTPUT DEVICES		3773-S3.3 (2W)			3773-S05 (2W)			3773-S12 (2W)		
PARAMETER	CONDITION	MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX
Output set voltage	—	+3.1	+3.3	+3.5	+4.7	+5	+5.3	+11.5	+12	+12.5
Output current	$V_{in\ min} - V_{in\ max}$	0.06	—	0.6A	0.04	—	0.4A	0.0167	—	0.167A
Efficiency	$P_{out} = \text{max rated load}$	62%	67%	—	63%	70%	—	64%	72%	—
Line regulation	$P_{out} = \text{max rated load}$ $V_{in\ min} - V_{in\ max}$	—	100mV	200mV	—	110mV	200mV	—	200mV	350mV
Load regulation	$P_{out} = 10\%$ to F.L.	—	100mV	200mV	—	100mV	200mV	—	150mV	300mV
Output ripple	F.L. BW 2 MHz mV _{pp}	—	30	50	—	30	50	—	60	120
SINGLE OUTPUT DEVICES		3773-S15 (2W)			3773-S28(2W)					
PARAMETER	CONDITION	MIN	TYP	MAX	MIN	TYP	MAX			
Output set voltage	—	+14.5	+15	+15.5	+27.0	+28.0	+29.0			
Output current	$V_{in\ min} - V_{in\ max}$	0.0133	—	0.133A	0.0071	—	0.071A			
Efficiency	$P_{out} = \text{max rated load}$	65%	72%	—	65%	72%	—			
Line regulation	$P_{out} = \text{max rated load}$ $V_{in\ min} - V_{in\ max}$	—	200mV	400mV	—	400mV	700mV			
Load regulation	$P_{out} = 10\%$ to F.L.	—	200mV	400mV	—	400mV	700mV			
Output ripple	F.L. BW 2 MHz mV _{pp}	—	70	150mV	—	180mV	300mV			
DUAL OUTPUT DEVICES		3773-D05 (2W)			3773-D12 (2W)			3773-D15 (2W)		
PARAMETER	CONDITION	MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX
Output set voltage	+ I_{out} = - I_{out}	+4.7	+5.0	+5.3	+11.5	+12.0	+12.5	+14.5	+15.0	+15.5
Output current*	$V_{in\ min} - V_{in\ max}$	0.02A	—	0.2A	±0.0083A	—	±0.083A	±0.0067A	—	±0.067A
Efficiency	$P_{out} = \text{max rated load}$	63%	70%	—	64%	72%	—	65%	72%	—
Line regulation	$P_{out} = \text{max rated load}$ $V_{in\ min} - V_{in\ max}$	—	±110mV	±200mV	—	±200mV	±350mV	—	±200mV	±400mV
Load regulation†	$P_{out} = 10\%$ to F.L.	—	±100mV	±200mV	—	±150mV	±300mV	—	±200mV	±400mV
Output ripple	F.L. BW 2 MHz mV _{pp}	—	30mV	50mV	—	60mV	120mV	—	70mV	150mV

Notes: *Up to 70% full power available from either output if rated output power is not exceeded; †balanced load conditions.

Model No.	Case Style	Pin Count	Mounting
3773	16	7	Seam Weld Flangeless PCB Mount



Pin Outs

3773-SXX	3773-DXX
Pin 1 + Input	Pin 1 + Input
Pin 2 Input Rtn	Pin 2 Input Rtn
Pin 3 + Output	Pin 3 + Output
Pin 4 Output Rtn	Pin 4 Output Rtn
Pin 5 Case	Pin 5 Case
Pin 6 N/C	Pin 6 - Output
Pin 7 Inhibit-not	Pin 7 Inhibit-not

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

EU Engineering Units
T Screened Units

For Heat Removal and Mounting Recommendations See MDI application notes on mounting considerations for DC-DC Converters