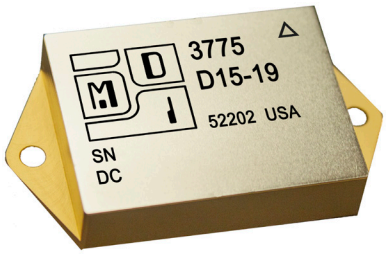
18 WATT DC – DC CONVERTERS

–55°C to 185°C Operation



28 VDC Input

Features

- Efficiency optimized for medium power applications
- GaN switching transistor at fixed 200 kHz. for low ripple
- Magnetically coupled I/O regulation, no optocoupler
- Inhibit-not and external sync
- Internal soft start
- Rugged Seam Welded Hermetic Package 1.12" by 1.45"

Specifications

INPUT: 28 VDC nominal
Range: 18 to 50 VDC

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

ENVIRONMENT:
Storage temperature: -55°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

Grade: **EU:**
operating -55°C to 185°C
Grade: **T:**
Operating -55°C to 185°C

WEIGHT: 35 grams typical

To operate converter, open inhibit-not pin
To inhibit converter, connect inhibit-not pin to input return
If not used, leave sync pin open

Suggested EMI Filter MDI Model 3723

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

MODEL 3775

SINGLE OUTPUT DEVICES		3775-S3.3 (16.5W)			3775-S05 (18W)			3775-S12 (18W)			3775-S15 (18W)		
PARAMETER	CONDITION	MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX
Output voltage	F.L.	+3.1	+3.3	+3.5	+4.7	+5.0	+5.3	+11.5	+12.0	+12.5	+14.5	+15.0	+15.5
Output current	$V_{in\,min} - V_{in\,max}$	0.5A	—	5A	0.36A	—	3.6A	0.15A	—	1.5A	0.12A	—	1.2A
Efficiency	P_{out} = max rated load	63%	68%	—	64%	71%	—	65%	73%	—	66%	73%	—
Line regulation	P_{out} = max rated load $V_{in\,min} - V_{in\,max}$	—	100mV	200mV	—	110mV	200mV	—	20mV	100mV	—	25mV	125mV
Load regulation	P_{out} = 10% to F.L.	—	100mV	200mV	—	100mV	200mV	—	150mV	500mV	—	200mV	600mV
Output ripple	F.L. BW 2 MHz mV_{pp}	—	30	100	—	40	125	—	60	150	—	70	180

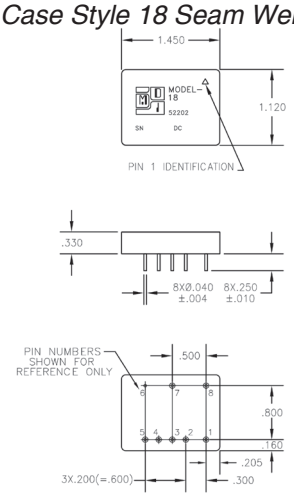
SINGLE OUTPUT DEVICES		3775-S28 (18W)		
PARAMETER	CONDITION	MIN	TYP	MAX
Output voltage	F.L.	+27.0	+28.0	+29.0
Output current	$V_{in\,min} - V_{in\,max}$	0.065A	—	0.65A
Efficiency	P_{out} = max rated load	66%	73%	—
Line regulation	P_{out} = max rated load $V_{in\,min} - V_{in\,max}$	—	50mV	250mV
Load regulation	P_{out} = 10% to F.L.	—	400mV	700mV
Output ripple	F.L. BW 2 MHz mV_{pp}	—	180	300

DUAL OUTPUT DEVICES		3775-D05 (18W)			3775-D12 (18W)			3775-D15 (18W)		
PARAMETER	CONDITION	MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX
Output voltage	F.L.	+4.7 -4.7	+5.0 -5.0	+5.3 -5.3	+11.5 -11.5	+12.0 -12.0	+12.5 -12.5	+14.5 -14.5	+15.0 -15.0	+15.5 -15.5
Output current*	$V_{in\,min} - V_{in\,max}$	±0.18A	—	±1.8A	±0.075	—	±0.75A	±0.06A	—	±0.6A
Efficiency	P_{out} = max rated load	64%	77%	—	65%	73%	—	66%	73%	—
Line regulation	P_{out} = 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	±500mV	—	±200mV	±600mV
Output ripple	F.L. BW 2 MHz mV_{pp}	—	40	125	—	60	150	—	70	18

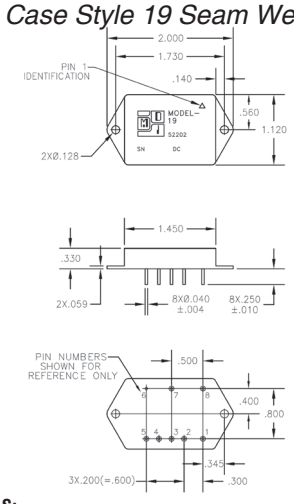
Notes: *Up to 90% full power available from either output if rated output power is not exceeded; †balanced load conditions.

Pin Outs	
3775-SXX	
Pin 1	Inhibit-Not
Pin 2	N/C
Pin 3	Output Return
Pin 4	Output Pos
Pin 5	Sync
Pin 6	Case
Pin 7	+28VDC Input Return
Pin 8	+28VDC Input
3775-DXX	
Pin 1	Inhibt-Not
Pin2	Output Pos
Pin 3	Output Return
Pin 4	Output Neg
Pin 5	Sync
Pin 6	Case
Pin 7	+28VDC Input Return
Pin 8	-28VDC Input

Case Style 18 Seam Weld



Case Style 19 Seam Weld



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

Note: Baseplate is recommended heat removal surface.

For heat removal and mounting recommendations. See MDI application notes on mounting considerations for DC-DC Convewrters.

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