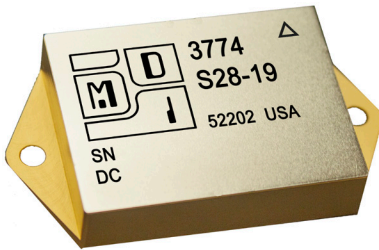


# 15 WATT DC – DC CONVERTERS

**-55°C to 185°C OPERATION**



## 9 - 20 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:** 12 VDC nominal  
Range: 9 to 20 VDC Start  
8 to 20 VDC Run

#### ISOLATION:

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

#### ENVIRONMENT:

Case Temperature Range:  
Storage temperature: -55°C to +185°C  
Operating -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

**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 do not connect

Suggested EMI Filter MDI Model 3723

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

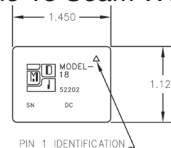
## MODEL 3774

SINGLE OUTPUT DEVICES		3774-S3.3 (15W)			3774-S05 (15W)			3774-S12 (15W)			3774-S15 (15W)		
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	$V_{in\ min} - V_{in\ max}$	0.45A	—	4.5A	0.3A	—	3A	0.125A	—	1.25A	0.10A	—	1A
Efficiency	$P_{out} = \text{max rated load}$	63%	68%	—	64%	71%	—	65%	73%	—	66%	73%	—
Line regulation	$P_{out} = \text{max rated load}$ $V_{in\ min} - V_{in\ max}$	—	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 <sub>pp</sub>	—	30	100	—	40	125	—	60	150	—	70	180
SINGLE OUTPUT DEVICES		3774-S28 (15W)			3774-D05 (15W)			3774-D12 (15W)			3774-D15 (15W)		
PARAMETER	CONDITION	MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX
Output voltage	F.L.	+27.0	+28.0	+29.0									
Output current	$V_{in\ min} - V_{in\ max}$	0.054A	—	0.54A									
Efficiency	$P_{out} = \text{max rated load}$	66%	73%	—									
Line regulation	$P_{out} = \text{max rated load}$ $V_{in\ min} - V_{in\ max}$	—	50mV	250mV									
Load regulation	$P_{out} = 10\%$ to F.L.	—	400mV	700mV									
Output ripple	F.L. BW 2 MHz mV <sub>pp</sub>	—	180	300									
DUAL OUTPUT DEVICES		3774-D05 (15W)			3774-D12 (15W)			3774-D15 (15W)					
PARAMETER	CONDITION	MIN	TYP	MAX	MIN	TYP	MAX	MIN	TYP	MAX			
Output voltage	F.L.	+4.7	+5.0	+5.3	+11.5	+12.0	+12.5	+14.5	+15.0	+15.5			
		-4.7	-5.0	-5.3	-11.5	-12.0	-12.5	-14.5	-15.0	-15.5			
Output current*	$V_{in\ min} - V_{in\ max}$	±0.15A	—	±1.5A	±0.063	—	±0.63A	±0.05A	—	±0.5A			
Efficiency	$P_{out} = \text{max rated load}$	64%	70%	—	65%	73%	—	66%	73%	—			
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	±500mV	—	±200mV	±600mV			
Output ripple	F.L. BW 2 MHz mV <sub>pp</sub>	—	40	125	—	60	150	—	70	18			

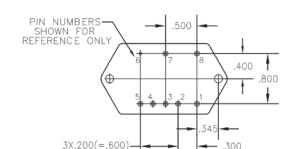
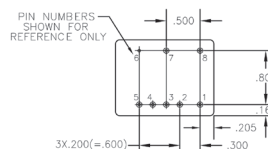
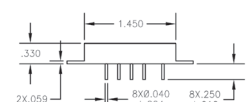
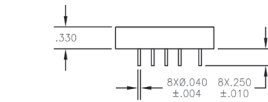
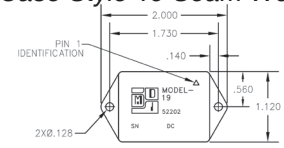
**Notes:** \*Up to 90% full power available from either output if rated output power is not exceeded; †balanced load conditions.

Pin Outs	
<b>3774-SXX</b>	
Pin 1	Inhibit-Not
Pin 2	N/C
Pin 3	Output Return
Pin 4	Output Pos
Pin 5	Sync
Pin 6	Case
Pin 7	+12VDC Input Return
Pin 8	+12VDC Input
<b>3774-DXX</b>	
Pin 1	Inhibit-Not
Pin 2	Output Pos
Pin 3	Output Return
Pin 4	Output Neg
Pin 5	Sync
Pin 6	Case
Pin 7	+12VDC Input Return
Pin 8	+12VDC 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 converters.



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