

## ON-BOARD DC-DC CONVERTER ENCAPSULATED MODULES 17 WATTS SINGLE & DUAL OUTPUT APS17DM-S & APS17DM-D SERIES



### FEATURES:

- SINGLE & DUAL OUTPUT
- 2:1 INPUT RANGE
- 17W ISOLATED OUTPUT
- SIX-SIDED METAL SHIELD

### SPECIFICATION

#### INPUT SPECIFICATION

**Input Range:** 2:1 DC input range  
See Ratings Chart

**Input Voltage:** Nominal 12/24/48Vdc

**Input Current:** Various with input range & load  
See Ratings Chart

**Input Fuse:** Use external fuse

**Input Filter:** Pi-Network

**Undervoltage Shutdown:** 8Vdc

**Isolation Resistor:** 1,000 Mega Ohms

**Isolation Voltage:** 1,500Vdc

**EMI:** Six-sided metal shielding

**Remote On/Off:** TTL/CMOS-Compatible Input Control  
Logic input reference to -Input/-Vin  
Logic [1]/Open(or 2.5-7.0Vdc above -Vin)=ON  
Logic [2]/Short(or 0-0.08Vdc above -Vin)=OFF

#### OUTPUT SPECIFICATION

**Output Voltage:** See Ratings Chart

**Output Current:** See Ratings Chart

**Voltage Accuracy:** Main O/P  $\pm 1.0\%$  typ.

**Line Regulation:**  $\pm 0.5\%$  typ.

**Load Regulation:** Single  $\pm 1.0\%$  typ.  
Dual  $\pm 2.0\%$  typ.

**Noise & Ripple:** Typ. 100mV for 3.3V/5.0V &  
1.0% for others peak to peak

**OVP:** Built-in on main output

**Adjustability:** Not available

**Short Circuit Protection:** Power fold back,  
Self-recovering

**Overload Protection:** About 130% of over-range  
foldback type

#### GENERAL SPECIFICATION

**Efficiency:** Typ. 80-81% various with input

**Switching Frequency:** Fixed frequency 450KHz

**Circuit Topology:** 450K Hz. Forward Circuit

**Transient Response:** Full to 1/2 load <200 $\mu$ sec.

**Case:** Black coated steel with non-conductive  
metal base

**Weight:** 27.5g (0.97 Oz.)

**Power Density:** 18.0Watts./ Cubic inch

**Operating Temperature:** -40°C to +85°C range. -25°C to  
+71°C @ full load without derating. Derating linearly  
3.5%/ °C from +71°C @ full load to +85°C @ half-load

**Storage Temperature:** -55°C to +110°C

**Humidity:** Up to 95% RH, Non-condensing

**Temperature Coefficient:** 0.02% /°C

**Cooling:** Convection cooling up to 60°C @F-L. At least  
100LFM moving air is recommended for F-L >+60°C in  
a confined area

**Commercial Grade:** Full load up to +71°C with moving air

**Industrial Grade:** +71 to +85°C F-L to H-L with moving air

**NOTE:**(1) All measurements are at nominal input, full load and +25°C unless otherwise specified.

(2) Line Regulation measured from High to Low Lines at full load.

(3) Load Regulation measured from Full Load (F-L) to Half-Load (H-L) at nominal input.

(4) Correct fuse size by calculating the max. DC current drain at low Line input & Load and then adding 20-25% for the desired fuse size.

# INPUT/OUTPUT & VOLTAGE/CURRENT RATINGS CHART

## SINGLE OUTPUT

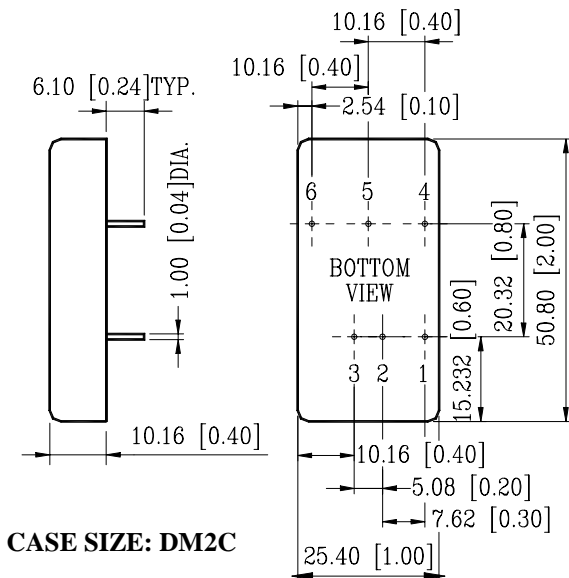
MODEL NO.	INPUT VDC	INPUT CURRENT		OUTPUT VO1(Vdc)		CASE SIZE
		N. L. (mA)	F.L.			
APS17DM-12B-S03	9.0- 18.0	20	1,200	3.3V	3.40A	DM2C
APS17DM-12B-S05	9.0- 18.0	15	1,740	5.0V	3.40A	DM2C
APS17DM-12B-S09	9.0- 18.0	15	1,740	9.0V	1.88A	DM2C
APS17DM-12B-S12	9.0- 18.0	15	1,740	12.0V	1.41A	DM2C
APS17DM-12B-S15	9.0- 18.0	15	1,730	15.0V	1.13A	DM2C
APS17DM-24B-S03	18.0- 36.0	15	600	3.3V	3.40A	DM2C
APS17DM-24B-S05	18.0- 36.0	10	870	5.0V	3.40A	DM2C
APS17DM-24B-S09	18.0- 36.0	10	870	9.0V	1.88A	DM2C
APS17DM-24B-S12	18.0- 36.0	10	870	12.0V	1.41A	DM2C
APS17DM-24B-S15	18.0- 36.0	10	860	15.0V	1.13A	DM2C
APS17DM-48B-S03	36.0- 72.0	15	300	3.3V	3.40A	DM2C
APS17DM-48B-S05	36.0- 72.0	10	435	5.0V	3.40A	DM2C
APS17DM-48B-S09	36.0- 72.0	10	435	9.0V	1.88A	DM2C
APS17DM-48B-S12	36.0- 72.0	10	435	12.0V	1.41A	DM2C
APS17DM-48B-S15	36.0- 72.0	10	430	15.0V	1.13A	DM2C

## DUAL OUTPUT

MODEL NO.	INPUT Vdc	INPUT CURRENT		OUTPUT (Vdc)		OUTPUT(A)		CASE SIZE
		N. L. (mA)	F.L.	+VO1	-VO2	+VO1	-VO2	
APS17DM-12B-D03	9.0- 18.0	25	1220	+3.3V	-3.3V	1.70A	1.70A	DM2C
APS17DM-12B-D05	9.0- 18.0	20	1760	+ 5.0V	- 5.0V	1.70A	1.70A	DM2C
APS17DM-12B-D12	9.0- 18.0	20	1740	+12.0V	-12.0V	0.70A	0.70A	DM2C
APS17DM-12B-D15	9.0- 18.0	20	1760	+15.0V	-15.0V	0.55A	0.55A	DM2C
APS17DM-24B-D03	18.0- 36.0	20	610	+3.3V	-3.3V	1.70A	1.70A	DM2C
APS17DM-24B-D05	18.0- 36.0	15	880	+ 5.0V	- 5.0V	1.70A	1.70A	DM2C
APS17DM-24B-D12	18.0- 36.0	15	870	+12.0V	-12.0V	0.70A	0.70A	DM2C
APS17DM-24B-D15	18.0- 36.0	15	855	+15.0V	-15.0V	0.55A	0.55A	DM2C
APS17DM-48B-D03	36.0- 72.0	20	305	+3.3V	-3.3V	1.70A	1.70A	DM2C
APS17DM-48B-D05	36.0- 72.0	15	440	+ 5.0V	- 5.0V	1.70A	1.70A	DM2C
APS17DM-48B-D12	36.0- 72.0	15	435	+12.0V	-12.0V	0.70A	0.70A	DM2C
APS17DM-48B-D15	36.0- 72.0	15	427	+15.0V	-15.0V	0.55A	0.55A	DM2C

**MECHANICAL DIMENSIONS: MM [INCHES]**

**Weight: 27.5g (0.97 Oz.)**



**CASE SIZE: DM2C**

## PIN ASSIGNMENT

PIN NO.	SINGLE	DUAL
PIN# 1.	Remote ON/OFF	Remote ON/OFF
PIN# 2.	- INPUT/-Vin	- INPUT/-Vin
PIN# 3.	+ INPUT	+ INPUT
PIN# 4.	DC-COM	- VO2
PIN# 5.	NC	DC-COM
PIN# 6.	VO1	+VO1