

# TOTAL POWER INT'L

## ON-BOARD DC-DC CONVERTER ENCAPSULATED MODULES 10 WATTS SINGLE & DUAL OUTPUT TPDM10-S & TPDM10-D SERIES



### FEATURES:

- LOW COST SINGLE & DUAL OUTPUT.
- 2:1 & HIGH INPUT RANGE.
- 10W ISOLATED OUTPUT.
- SIX-SIDED METAL SHIELD.

### SPECIFICATION

#### INPUT SPECIFICATION

**Input Range:** 2:1 DC input range,  
High input voltage up to 140Vdc.  
See Ratings Chart.

**Input Voltage:** Nominal 12/24/48/96Vdc.

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

**Input Fuse:** Use external fuse.

**Input Filter:** Pi-Network.

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

**Isolation Voltage:** 1,500Vdc.

**EMI:** Six-sided metal shielding.

#### OUTPUT SPECIFICATION

**Output Voltage:** See Ratings Chart.

**Output Current:** See Ratings Chart

**Voltage Accuracy:** Main O/P  $\pm 2.0\%$  typ.

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

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

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

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

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

**Overload Protection:** About 130% of overrange  
by foldback type.

#### GENERAL SPECIFICATION

**Efficiency:** Typ. 65-75%, various with input.

**Switching Frequency:** 40-70K Hz. various with  
input and loading condition.

**Circuit Topology:** Free Running Flyback Circuit.

**Transient Response:** Full to 1/2 load  $< 200 \mu\text{Sec}$ .

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

**Weight:** 108.0g (3.8 Oz.)

**Power Density:** 5Watts./ Cubic inch.

**Operating Temperature:** -25°C to +71°C range.  
-20°C to +60°C @ full load without derating.

**Temperature:** -40°C to +105°C.

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

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

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

**Commercial Grade only.**

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 to 1/2 Full Load 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

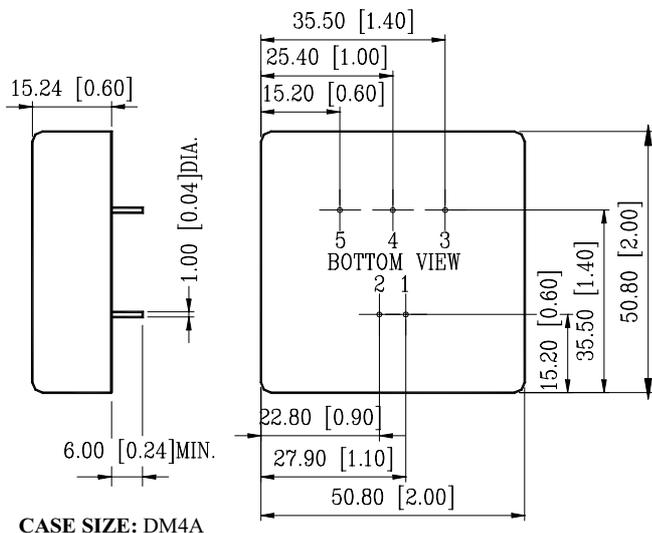
MODEL NO.	INPUT Vdc	INPUT CURRENT		OUTPUT VO1(Vdc)	OUTPUT VO1(A)	CASE SIZE
		N. L. (mA)	F.L.			
TPDM10-12B-S03	9.0- 18.0	60	800	3.3V	2.00A	DM4A
TPDM10-12B-S05	9.0- 18.0	60	1180	5.0V	2.00A	DM4A
TPDM10-12B-S09	9.0- 18.0	60	1180	9.0V	1.12A	DM4A
TPDM10-12B-S12	9.0- 18.0	60	1180	12.0V	0.85A	DM4A
TPDM10-12B-S15	9.0- 18.0	60	1200	15.0V	0.70A	DM4A
TPDM10-12B-S24	9.0- 18.0	60	1350	24.0V	0.50A	DM4A
TPDM10-24B-S03	18.0- 36.0	30	400	3.3V	2.00A	DM4A
TPDM10-24B-S05	18.0- 36.0	30	590	5.0V	2.00A	DM4A
TPDM10-24B-S09	18.0- 36.0	30	590	9.0V	1.12A	DM4A
TPDM10-24B-S12	18.0- 36.0	30	590	12.0V	0.85A	DM4A
TPDM10-24B-S15	18.0- 36.0	30	600	15.0V	0.70A	DM4A
TPDM10-24B-S24	18.0- 36.0	30	675	24.0V	0.50A	DM4A
TPDM10-48B-S03	36.0- 72.0	20	200	3.3V	2.00A	DM4A
TPDM10-48B-S05	36.0- 72.0	20	295	5.0V	2.00A	DM4A
TPDM10-48B-S09	36.0- 72.0	20	295	9.0V	1.12A	DM4A
TPDM10-48B-S12	36.0- 72.0	20	295	12.0V	0.85A	DM4A
TPDM10-48B-S15	36.0- 72.0	20	300	15.0V	0.70A	DM4A
TPDM10-48B-S24	36.0- 72.0	20	338	24.0V	0.50A	DM4A
TPDM10-96A-S03	72.0- 140.0	10	100	3.3V	2.00A	DM4A
TPDM10-96A-S05	72.0- 140.0	10	146	5.0V	2.00A	DM4A
TPDM10-96A-S09	72.0- 140.0	10	146	9.0V	1.12A	DM4A
TPDM10-96A-S12	72.0- 140.0	10	146	12.0V	0.85A	DM4A
TPDM10-96A-S15	72.0- 140.0	10	150	15.0V	0.70A	DM4A
TPDM10-96A-S24	72.0- 140.0	10	169	24.0V	0.50A	DM4A

## DUAL OUTPUT

MODEL NO.	INPUT Vdc	INPUT CURRENT		OUTPUT(Vdc)		OUTPUT(A)		CASE SIZE
		N. L. (mA)	F.L.	+VO1	-VO2	+VO1	-VO2	
TPDM10-12B-D05	9.0- 18.0	50	1200	+5.0V	-5.0V	1.00A	1.00A	DM4
TPDM10-12B-D12	9.0- 18.0	50	1200	+12.0V	-12.0V	0.42A	0.42A	DM4
TPDM10-12B-D15	9.0- 18.0	50	1200	+15.0V	-15.0V	0.35A	0.35A	DM4
TPDM10-24B-D05	18.0- 36.0	30	600	+5.0V	-5.0V	1.00A	1.00A	DM4
TPDM10-24B-D12	18.0- 36.0	30	600	+12.0V	-12.0V	0.42A	0.42A	DM4
TPDM10-24B-D15	18.0- 36.0	30	600	+15.0V	-15.0V	0.35A	0.35A	DM4
TPDM10-48B-D05	36.0- 72.0	20	300	+5.0V	-5.0V	1.00A	1.00A	DM4
TPDM10-48B-D12	36.0- 72.0	20	300	+12.0V	-12.0V	0.42A	0.42A	DM4
TPDM10-48B-D15	36.0- 72.0	20	300	+15.0V	-15.0V	0.35A	0.35A	DM4
TPDM10-96A-D05	72.0- 140.0	10	150	+5.0V	-5.0V	1.00A	1.00A	DM4
TPDM10-96A-D12	72.0- 140.0	10	150	+12.0V	-12.0V	0.42A	0.42A	DM4
TPDM10-96A-D15	72.0- 140.0	10	150	+15.0V	-15.0V	0.35A	0.35A	DM4

## MECHANICAL DIMENSIONS: MM [INCHES]

Weight: 108.0g (3.8 Oz.)



## PIN ASSIGNMENT

PIN NO.	SINGLE	DUAL
PIN #1	- INPUT	- INPUT
PIN #2	+ INPUT	+ INPUT
PIN #3	DC-COM	-VO2
PIN #4	NC	DC-COM
PIN #5	VO1	+ VO1