

TDD05 SERIES



DC - DC CONVERTER
5 ~ 6W SINGLE & DUAL OUTPUT

FEATURES

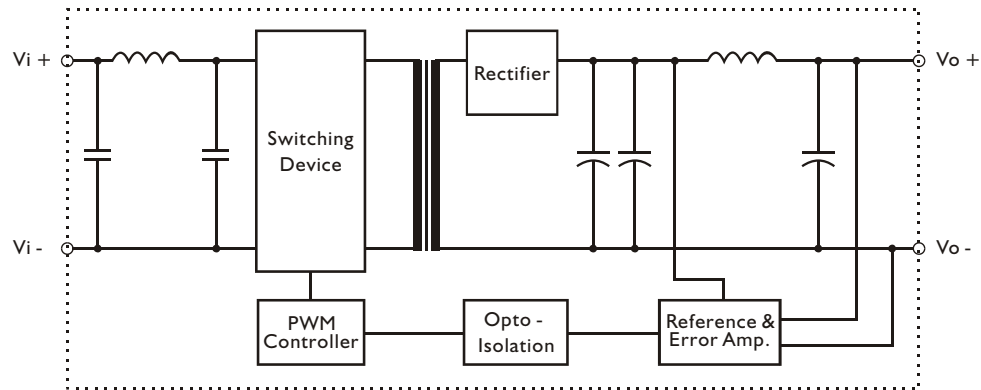
- LOW COST
- 4:1 WIDE INPUT RANGE
- ?I/O ISOLATION
- ?INPUT π FILTER
- ?SHORT CIRCUIT PROTECTION
- ?HIGH PERFORMANCE
- ?2 YEARS WARRANTY

MODEL LIST

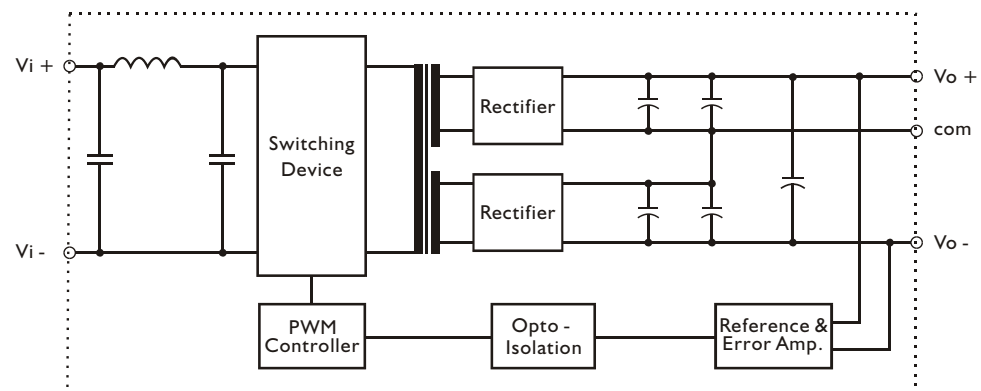
MODEL NO.	INPUT VOLTAGE	OUTPUT WATTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	EFF. (min.)
Single Output Models					
TDD05 - 03S4	10~36 VDC	5 WATTS	+3.3 VDC	1500 mA	63%
TDD05 - 05S4	10~36 VDC	5 WATTS	+ 5 VDC	1000 mA	68%
TDD05 - 12S4	10~36 VDC	6 WATTS	+ 12 VDC	500 mA	73%
TDD05 - 15S4	10~36 VDC	6 WATTS	+ 15 VDC	400 mA	73%
TDD05 - 03S5	18~72 VDC	5 WATTS	+3.3 VDC	1500 mA	63%
TDD05 - 05S5	18~72 VDC	5 WATTS	+ 5 VDC	1000 mA	70%
TDD05 - 12S5	18~72 VDC	6 WATTS	+ 12 VDC	500 mA	75%
TDD05 - 15S5	18~72 VDC	6 WATTS	+ 15 VDC	400 mA	76%
Dual Output Models					
TDD05 - 05D4	10~36 VDC	5 WATTS	$\pm$ 5 VDC	$\pm$ 500 mA	68%
TDD05 - 12D4	10~36 VDC	6 WATTS	$\pm$ 12 VDC	$\pm$ 250 mA	72%
TDD05 - 15D4	10~36 VDC	6 WATTS	$\pm$ 15 VDC	$\pm$ 200 mA	73%
TDD05 - 05D5	18~72 VDC	5 WATTS	$\pm$ 5 VDC	$\pm$ 500 mA	70%
TDD05 - 12D5	18~72 VDC	6 WATTS	$\pm$ 12 VDC	$\pm$ 250 mA	75%
TDD05 - 15D5	18~72 VDC	6 WATTS	$\pm$ 15 VDC	$\pm$ 200 mA	76%

CIRCUIT SCHEMATIC

- Block diagram for TDD05 series with single output



- Block diagram for TDD05 series with dual output



SPECIFICATION

All Specifications Typical At Nominal Line, Full Load, 25°C Unless Otherwise Noticed

GENERAL

Characteristics	Conditions	min.	typ.	max.	unit
Switching frequency	Vi nom, Io nom		200		KHz
Isolation voltage	Input / Output	1,500			VDC
Isolation resistance	Input / Output, @ 500VDC	1G			Ω
Ambient temperature	Operating at Vi nom, Io nom	-25		+ 71	°C
Case temperature	Operating at Vi nom, Io nom			+ 95	°C
Derating	Vi nom	See derating curve			% / °C
Storage temperature	Non operational	-40		+ 100	°C
Dimension	L25.4 x W50.8 x H12				mm
Cooling	Free air convection				
Case material	Metal				

INPUT SPECIFICATIONS

Characteristics	Conditions	min.	typ.	max.	unit
Input voltage range	Ta min ... Ta max, Io nom	10	24	36	VDC
		18	48	72	VDC
No load input current	Vi nom, Io = 0	24V models		25	mA
		48V models		12	mA
Input voltage w/o damage	Io nom	24V models		40	VDC
		48V models		75	VDC
Input filter	Pi type				

OUTPUT SPECIFICATIONS

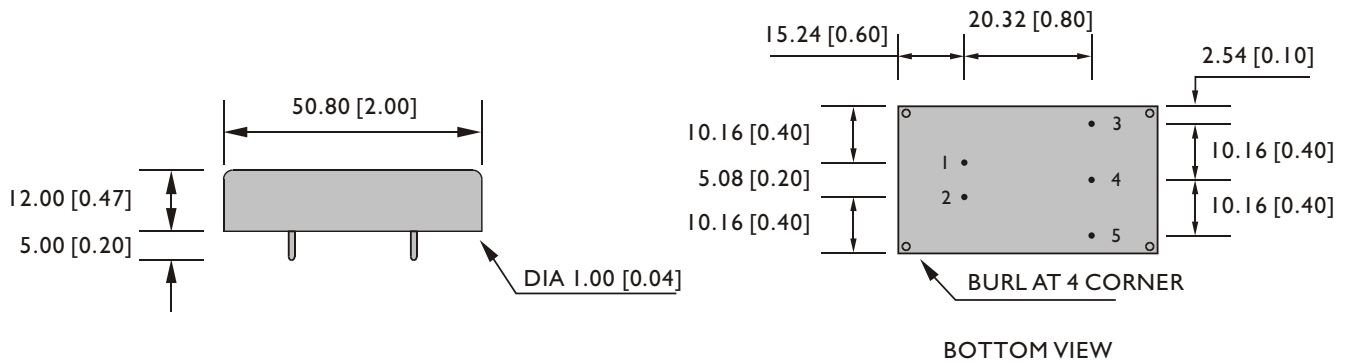
Characteristics	Conditions	min.	typ.	max.	unit
Output voltage accuracy	Vi nom, Io nom			± 2	%
	single output models			± 2	%
	dual output models			± 3	%
Minimum load	Vi nom	0			%
	single output models	20			%
Line regulation	Io nom, Vi min ... Vi max			± 1	%
	- 5V model			± 3	%
Load regulation	Vi nom, Io 0 ... Io nom, single output models			± 2	%
	Vi nom, Io min ... Io nom, dual output models			± 5	%
Transient recovery time	25% load, step changed		500		μs
Temperature coefficient	Vi nom, Io nom			± 0.02	% / °C
Ripple & noise	Vi nom, Io nom, BW = 20MHz			150	mV
Efficiency	Vi nom, Io nom, Po / Pi	Up to 76%, See model list			

CONTROL AND PROTECTION

Input reversed	Shunt diode built in, external fuse recommended
Output short circuit	Continuous

MECHANISM & PIN CONFIGURATION

mm [inch]



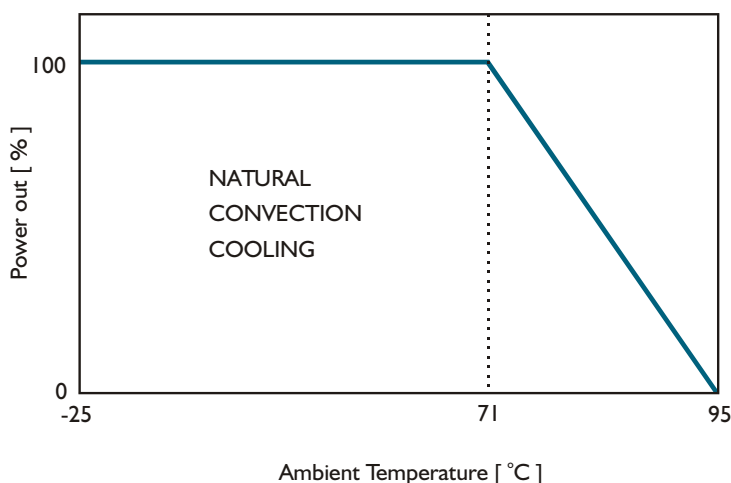
PHYSICAL CHARACTERISTICS

CASE SIZE	25.4 x 50.8 x 12 mm 1 x 2 x 0.47 inches
CASE MATERIAL	Metal
WEIGHT	35 g

PIN ASSIGNMENT

GENERAL					
PIN NO.	1	2	3	4	5
SINGLE	Vi +	Vi -	Vo +	NO PIN	Vo -
DUAL	Vi +	Vi -	Vo +	com	Vo -

DERATING



TDD05 SERIES



DC - DC CONVERTER
5 ~ 6W 5V INPUT MODEL

FEATURES

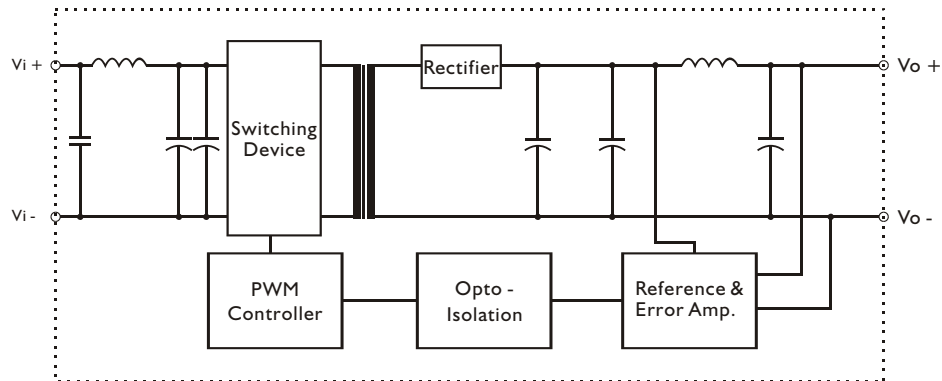
- INPUT 4.5 V ~ 9 V
- INPUT FILTER BUILT - IN
- I/O ISOLATION
- HIGH EFFICIENCY UP TO 85 %
- SHORT CIRCUIT PROTECTION
- 2 " x 1 " METAL CASE
- 2 YEARS WARRANTY

MODEL LIST

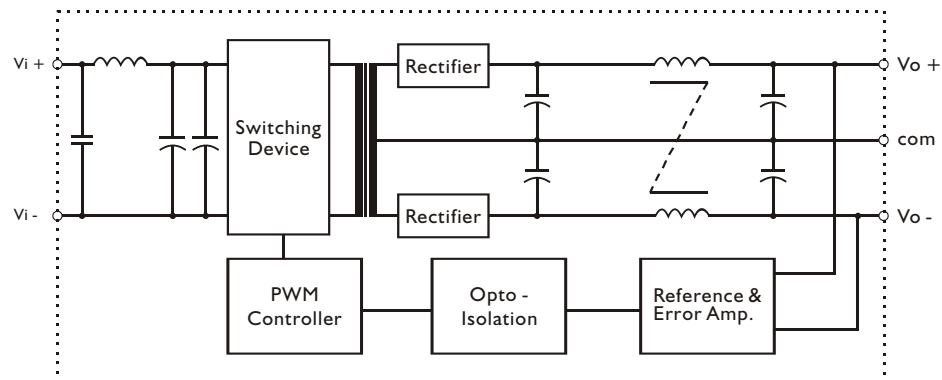
MODEL NO.	INPUT VOLTAGE	OUTPUT WATTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	EFF. (Typ.)	EFF. (min.)
Single Output Models						
TDD05 - 05S0	4.5~9 VDC	5 WATTS	+ 5 VDC	1000 mA	84%	82%
TDD05 - 12S0	4.5~9 VDC	6 WATTS	+ 12 VDC	500 mA	85%	83%
TDD05 - 15S0	4.5~9 VDC	6 WATTS	+ 15 VDC	400 mA	85%	83%
Dual Output Models						
TDD05 - 05D0	4.5~9 VDC	5 WATTS	± 5 VDC	± 500 mA	84%	82%
TDD05 - 12D0	4.5~9 VDC	6 WATTS	± 12 VDC	± 250 mA	85%	83%
TDD05 - 15D0	4.5~9 VDC	6 WATTS	± 15 VDC	± 200 mA	85%	83%

CIRCUIT SCHEMATIC

- Block diagram for TDD05 5V input model with single output



- Block diagram for TDD05 5V input model with dual output



SPECIFICATION

All Specifications Typical At Nominal Line, Full Load, 25°C Unless Otherwise Noticed

GENERAL

Characteristics	Conditions	min.	typ.	max.	unit
Switching frequency	V_i nom, I_o nom		200		KHz
Isolation voltage	Input / Output	1,500			VDC
Isolation resistance	Input / Output, @ 500VDC	100			MΩ
Ambient temperature	Operating at V_i nom, I_o nom	-25		+ 71	°C
Case temperature	Operating at V_i nom, I_o nom			+ 100	°C
Derating	V_i nom	See derating curve			% / °C
Storage temperature	Non operational	-40		+ 100	°C
Dimension	L50.8 x W25.4 x H12				
Cooling	Free air convection				
Case material	Metal				

INPUT SPECIFICATIONS

Characteristics	Conditions	min.	typ.	max.	unit
Input voltage range	T_a min ... T_a max, I_o nom	4.5	5	9	VDC
No load input current	V_i nom, $I_o = 0$		15		mA
Input voltage w/o damage	I_o nom			10	VDC
Startup voltage	I_o nom		4		VDC
Input filter	Pi type				

OUTPUT SPECIFICATIONS

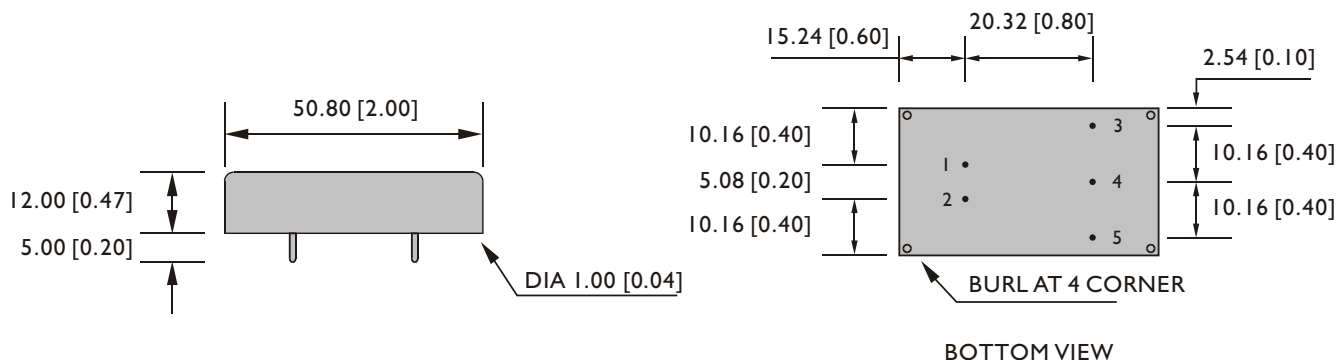
Characteristics	Conditions	min.	typ.	max.	unit
Output voltage accuracy	V_i nom, I_o nom			± 2	%
Minimum load	V_i nom single output models	0			%
	dual output models (each output)	20			%
Line regulation	I_o nom, V_i min ... V_i max			± 0.5	%
Load regulation	V_i nom, I_o 0 ... I_o nom, for single output models			± 0.5	%
	V_i nom, I_o min ... I_o nom, for dual output models			± 2	%
Transient recovery time	V_i nom, I_o nom ... 1/2 I_o nom		500		μs
Temperature coefficient	V_i nom, I_o nom			± 0.02	% / °C
Ripple & noise	V_i nom, I_o nom, BW = 20MHz			150	mV
Efficiency	V_i nom, I_o nom, P_o / P_i	Up to 85%, See model list			

CONTROL AND PROTECTION

Input reversed	Shunt diode built in, external fuse recommended
Output short circuit	Continuous

MECHANISM & PIN CONFIGURATION

mm [inch]



PHYSICAL CHARACTERISTICS

CASE SIZE	50.8 x 25.4 x 12 mm 2 x 1 x 0.47 inches
CASE MATERIAL	Metal
WEIGHT	35 g

PIN ASSIGNMENT

GENERAL					
PIN NO.	1	2	3	4	5
SINGLE	Vi+	Vi-	Vo+	NO PIN	Vo-
DUAL	Vi+	Vi-	Vo+	com	Vo-

DERATING

