

6W flyback transformer in SMD package

4:1 input voltage range and 2250VDC isolation test voltage



FEATURES

- Power up to 6W
- High saturated flux density
- Low DCR loss
- Class F insulation
- SMD package
- ER11.5 Bobbin, Dimensions: 11.00 x 12.20 x 5.90mm
- Meets EN62368 standards

TTURB1D-6T transformer series feature with 2250VDC primary to secondary isolation, an operating ambient temperature range of -40°C to +125°C. It can be used with our control IC SCM1101AMA to achieve flyback power supply design with an 4:1 wide input volatge range and various protection functions and superior EMI performance.

Selection Guide									
Certification	Part No.	Input Voltage (VDC)	Output Voltage (VDC)	Output Current (mA)	Auxiliary Voltage (VDC)	Auxiliary Current (mA)	Power (W)	Pri-Sec Isolated Voltage (VDC)	
-	TTURB1D05-6T	110 (40-160)	5	1200/0	11.25	50	6	2250	
	TTURB1D12-6T		12	500/0	12.00	50	6	2250	
	TTURB1D15-6T		15	400/0	11.25	50	6	2250	
	TTURB1D24-6T		24	250/0	12.00	50	6	2250	

Note: Pins and phase points of the transformers refer to Phase Diagram.

Electrical Specifications

	ecilications					
Part No.	Induct	ance(uH)		K		
	Input Inductance	Input Leakage Inductance Inductance [®] Max.		N2	N3	(Flux Density Factor) (Gauss/A)
TTURB1D05-6T	207.36±15%	6.0		50.0		1322
TTURB1D12-6T	207.36±15%	6.0				1322
TTURB1D15-6T	207.36±15%	6.0				1322
TTURB1D24-6T	207.36±15%	6.0				1322

Notes: ①Approximate leakage inductance: test the inductance of N1 in parallel based on N2, N3 are shorted;
 ②To ensure the transformer will not saturate in all of the applications and conditions, the peak flux density(Bm) should remain below 3000 Gauss. Use the following formula to calculate the peak flux density: Bm=K*lpk,lpk stands for the peak current of input, which unit is A;
 ③Approximate transformer core loss(Pcv) can be calculated as following formula: Pcv=3.9E-14*f^{1.82*} △B^{2.59}, the unit of Pcv is W, f stands for operating frequency, which unit is kHz, △B is the operating flux density, which unit is Gauss. △B can be calculated as: △B=K*△I.

General Specifications									
Item	Operating Conditions	Min.	Тур.	Max.	Unit				
Isolation	Pri-Sec Electric Strength Test for 1 minute with a leakage current of 1mA max.	2250			VDC				
Surface operating Temperature®		-40		+125	°C				
Storage Humidity	Non-condensing	5		95	%RH				
Storage Temperature $^{\circ}$		-55		+125	°C				
Reflow Soldering Temperature [®]		Peak temp.≤245°C, maximum duration time≤60s							
Notes: ①The temperature of the transformer(ambient plus temperature rise) should be within the surface operating temperature range; ②The storage temperature of the transformer only;									

③Please refer to IPC/JEDEC J-STD-020D.1. And we suggest that times of reflow soldering should not exceed twice.



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DC/DC Transformer TTURB1D-6T Series



Mechanical Specifications							
Dimensions	11.00 x 12.20 x 5.90mm						
Weight	2.0g (Typ.)						

Material certification	
Material	UL No.
Bobbin	E41429
Tape	E17385
Wire	E234867
Varnish	E317427

TTURB1D-6T Phase Diagram

	PRI. 1 0 N1 3 0 4 0 N3	SEC. 0 7, 8 N2 0 5, 6					
	2 0	● → → PHASE FOINT					
	PHASE D	IAGRAM					
Turns Ratio		TTURB1D05-6T					
N1 : N2 : N3		4 : 0.44 : 1					
Turns Ratio		TTURB1D12-6T					
N1 : N2 : N3		4:1:1					
Turns Ratio	Turns Ratio TTURB1D15-6T						
N1 : N2 : N3	4 : 1.33 : 1						
Turns Ratio	TTURB1D24-6T						
N1 : N2 : N3 6 : 2 : 1							
Note: Input: N1 in parallel. Output: N2 in parallel.	irallel. Auxiliary: N3.						



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Dimensions and Recommended Layout

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THIRD ANGLE PROJECTION

-7.30 [0.288] 1.30 [0.051] 6.00 [0.236] 2.00 [0.079] ||4||3||2||1 2.10 [0.083] В 4 2 1 13.60 [0.536] [0.362] **Top View** Top View 9.20 5 8 7 6 5 6 7 8 $0.45 \pm 0.20[0.018 \pm 0.008]$ -0.70 [0.028] 2.00 [0.079] 6.00 [0.236] -11.00 [0.433] -Note: Grid 2.54*2.54mm **Right View Front View** 민때머머 5.90 [0.232] 0.90[0.035] / 0.15 Note: Unit :mm[inch] General tolerances:±0.5[±0.020]

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Tape and Reel Info



Device	Package Type	Pin	SPQ	Reel Diameter (mm)	Reel Width W1 (mm)	A0 (mm)	B0 (mm)	K0 (mm)	P1 (mm)	W (mm)	Pin1 Quadrant
ER11.5-8	SMD	8	500	330.0	24.4	11.60	12.80	6.50	16.00	24	Q2

Notes:

- 1. For additional information on Product Packaging please refer to www.mornsun-power.com. Packaging bag number: 58210085;
- 2. Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta=25°C, humidity<75%RH, 100kHz and 100mV;
- 3. All index testing methods in this datasheet are based on our company corporate standards;
- 4. We can provide other analog transformer customization service, please contact our technicians directly for specific information;
- 5. Products are related to laws and regulations: see "Features";
- 6. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units.

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