

6W/10W flyback transformer in SMD package  
4:1 input voltage range and 1650VDC isolation test voltage



### FEATURES

- Power up to 10W
- 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

TTURA/B-6/10T transformer series feature with 1650VDC primary to secondary isolation, an operating ambient temperature range of -40°C ~ +125°C. It can be used with our control IC SCM1101AMA to achieve flyback power supply design with an 4:1 wide input voltage 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)
--	TTURB2405-6T	9-36	5	1200	11.6	50	6	1650
	TTURB2424-6T	9-36	24	250	11.6	50	6	1650
	TTURB4812-6T	18-75	12	500	9.8	50	6	1650
	TTURB2405-10T	9-36	5	2000	11	50	10	1650
	TTURB4805-10T	18-75	5	2000	11.25	50	10	1650
	TTURA2415-10T	9-36	±15	±334	12.5	50	10	1650
	TTURA4805-10T	18-75	±5	±1000	11.25	50	10	1650

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

### Electrical Specifications

Part No.	Inductance(μH)		DCR(mΩ) Typ.				K (Flux Density Factor) (Gauss/A)
	Input Inductance	Leakage Inductance <sup>①</sup> Max.	N1	N2	N3	N4	
TTURB2405-6T	16 ± 12%	0.23	89	52	52	482	1322
TTURB2424-6T	16 ± 12%	0.4	94	550	650	450	1322
TTURB4812-6T	51.8 ± 12%	4.96	360	300	185	340	2375
TTURB2405-10T	7.04 ± 8%	0.45	46	28	29	391	704
TTURB4805-10T	28.16 ± 8%	1.1	157	35	40	330	1408
TTURA2415-10T	7.04 ± 8%	0.2	64	174	177	348	704
TTURA4805-10T	31.36 ± 12%	1.6	134	24	25	330	1851

Notes: ① Approximate leakage inductance: test the inductance of N1 based on N2, N3 and N4 are shorted;

② To 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:  $B_m = K \cdot I_{pk}$ , I<sub>pk</sub> stands for the peak current of input, which unit is A;

③ Approximate transformer core loss(Pcv) can be calculated as following formula:  $P_{cv} = 3.9E-14 \cdot f^{1.82} \cdot \Delta B^{2.59}$ , the unit of Pcv is W, f stands for operating frequency, which unit is kHz, ΔB is the operating flux density, which unit is Gauss. ΔB can be calculated as:  $\Delta B = K \cdot \Delta I$ .

### General Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Isolation	Pri-Sec Electric Strength Test for 1 minute with a leakage current of 1mA max.	1650	--	--	VDC
Surface operating Temperature <sup>①</sup>		-40	--	+125	°C
Storage Humidity	Non-condensing	5	--	95	%RH
Storage Temperature <sup>②</sup>		-55	--	+125	°C

Reflow Soldering Temperature®	Peak temp. ≤245°C, maximum duration time ≤60s over 217°C.
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.	

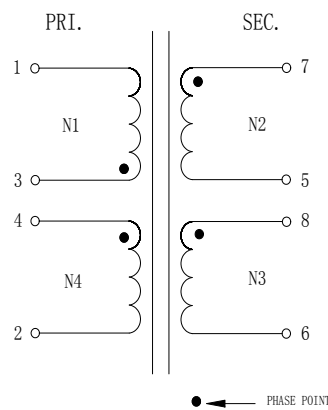
### Mechanical Specifications

Dimensions	11.00 x 12.20 x 5.90mm
Weight	1.40g (Typ.)

### Material certification

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

### Phase Diagram

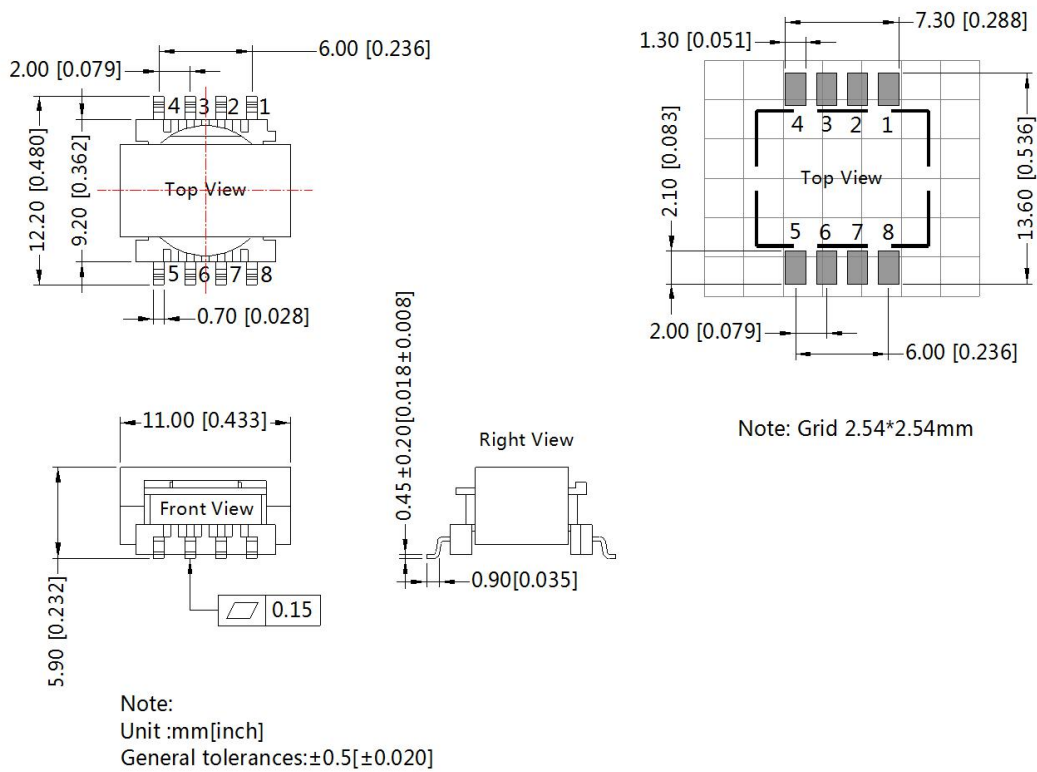


Turns Ratio	TTURB2405-6T	TTURB2424-6T	TTURB4812-6T	TTURB2405-10T	TTURB4805-10T	TTURA2415-10T	TTURA4805-10T
N1 : N4 : N2 : N3	1.67 : 2.33 : 1 : 1	0.56 : 0.5 : 1 : 1	18 : 9 : 11 : 11	1.6 : 2.2 : 1 : 1	4 : 2.25 : 1 : 1	0.67 : 0.83 : 1 : 1	3.5 : 2.25 : 1 : 1

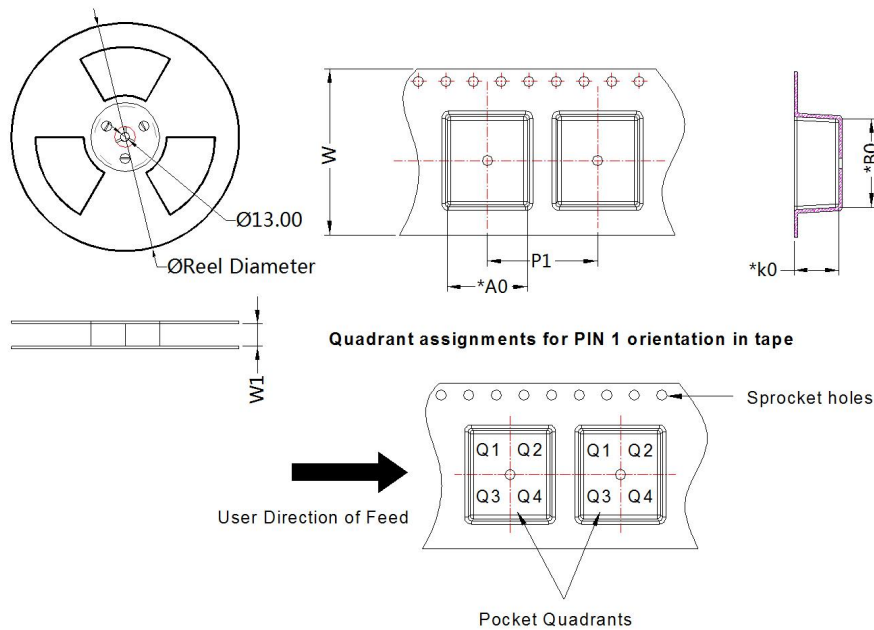
Note: Input: N1. Single output: N2/N3 in parallel. Dual output: N2/N3 in series. Auxiliary: N4.

Dimensions and Recommended Layout

THIRD ANGLE PROJECTION



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](http://www.mornsun-power.com). Packaging bag number : 58210085;
2. Unless otherwise specified, parameters in this datasheet were measured under the conditions of  $T_a=25^{\circ}\text{C}$ , 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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