

### TSHT5.8-01 Transformer



RoHS



### FEATURES

- Compact SMD package
- I/O isolation test voltage 3k VDC
- Operating ambient temperature range -40°C to +125°C
- Meets EN62368 standards

TSHT5.8-01 Transformer is specially designed for applications where an isolated voltage is required in a distributed power supply system, compatible with integrated IC used as an 1W DCDC converter with 5V input, 5V output. They are suitable for: pure digital circuits, low frequency analog circuits, relay-driven circuits and data switching circuits.

### Selection Guide

Part No.	Input voltage(VDC)	Output voltage (VDC)	Input Current (Max.)		Power(W)
	Nominal (Range)		mA( AC )	mA( DC )	
TSHT5.8-01	5 (4.5-5.5)	5	177	250	1

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

### General Specifications

Item	Operating Conditions	Min.	Typ.	Max.	Unit
Inductance <sup>①</sup>	pin 2 to pin 1; pin 2 to pin 3	--	146	--	μ H
	pin 5 to pin 4; pin 5 to pin 6	--	185	--	
DCR	pin 2 to pin 1; pin 2 to pin 3	--	0.34	--	Ω
	pin 5 to pin 4; pin 5 to pin 6	--	0.41	--	
Isolation Voltage	Input-output electric strength test for 1 minute with a leakage current of 1mA max.	3000	--	--	VDC
Insulation Resistance	Input-output resistance at 500VDC	1000	--	--	MΩ
Isolation Capacitance	Input-output capacitance at 100kHz/0.1V	--	20	--	pF
Storage Humidity		--	--	95	%RH
Operating Temperature <sup>②</sup>	Including temperature rise	-40	--	+125	°C
Storage Temperature <sup>③</sup>		-55	--	+125	
Reflow Soldering Temperature <sup>④</sup>		Peak temp. ≤245°C, maximum duration time ≤60s over 217°C.			

Notes: ①Test conditions: 100kHz/0.1V;

②The temperature of the transformer(ambient plus temperature rise) should be within the operating temperature range;

③The storage temperature of the transformer only;

④We suggest that times of reflow soldering should not exceed twice, For actual application, please refer to IPC/JEDEC J-STD-020D.1.

### Mechanical Specifications

Case Material	Black plastic; flame-retardant and heat-resistant (UL94 V-0)
Dimensions	12.50 x 8.70 x 5.90mm
Weight	0.6g (Typ.)
Cooling Method	Free air convection

### Material certification

Material	UL No.
Wire	E234867
Case	E150608
Varnish	E317427

Phase Diagram

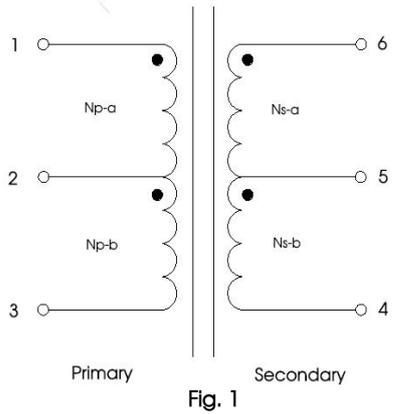


Fig. 1

Turns Ratio (Np: Ns)		
Output voltage(VDC)	Np-a: Ns-a	Np-b: Ns-b
5	1: 1.1 (Typ.)	

Application Circuit

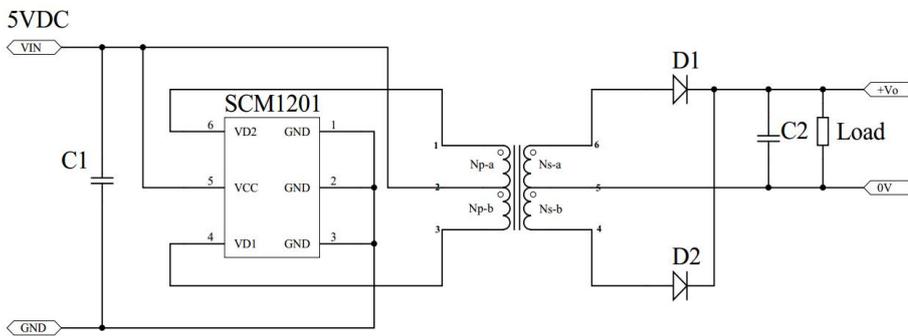


Fig. 2

Table 1: Recommended parameters

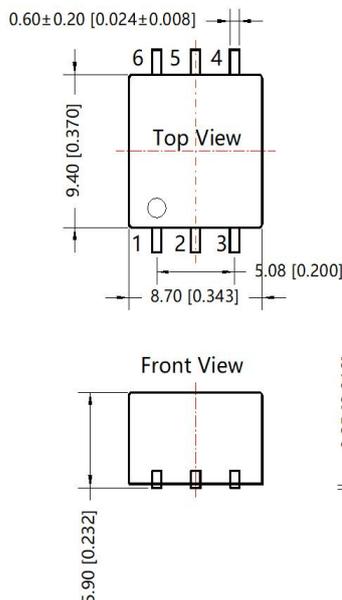
IC	MORNSUN SCM1201
C1	1μF/16V
C2	1μF/16V
D1	30V/400mA
D2	30V/400mA

Notes:

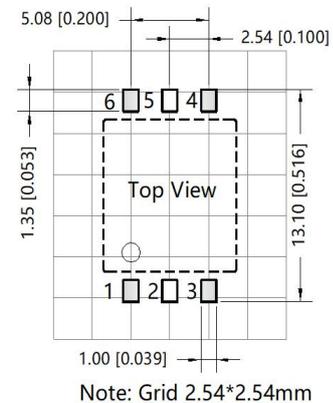
1. If it is required to further reduce input and output ripple, the capacitance of C1 and C2 can be increased properly if required, and should be connected close to the pin terminal of the module.
2. In order to ensure the converter can work reliably with high efficiency, the minimum load should not less than 1% rated load when it is used. If the needed power is indeed small, please parallel a resistor on the output side (The sum of the efficient power and resistor consumption power is not less than 1%).

Dimensions and Recommended Layout

THIRD ANGLE PROJECTION

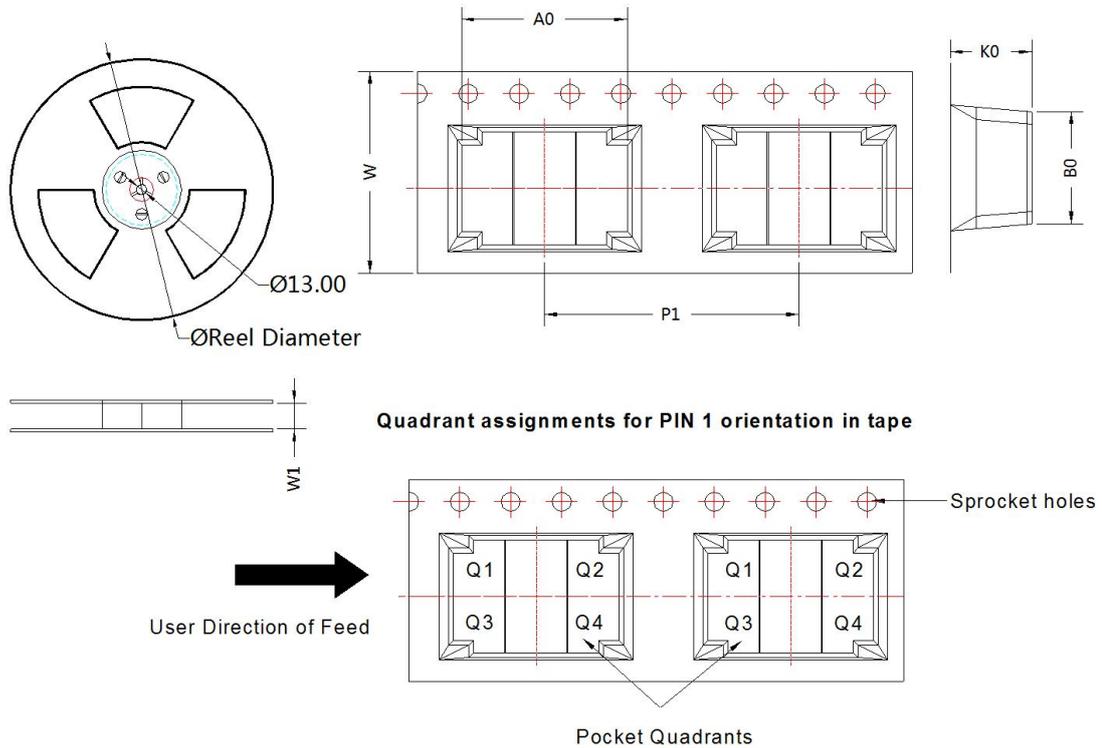


Note:  
Unit: mm[inch]  
Pin section tolerances: ±0.10[±0.004]  
General tolerances: ±0.50[±0.020]



Note: Grid 2.54\*2.54mm

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
TSHT5.8-01	SMD	6	500	330.0	16.4	13.00	8.90	6.40	20.00	16	Q1

Notes:

1. For additional information on Product Packaging please refer to [www.mornsun-power.com](http://www.mornsun-power.com). Packaging bag number : 58200091, Roll packaging bag number: 58210038;
2. If the product is not operated within the required load range, the product performance cannot be guaranteed to comply with all parameters in the datasheet;
3. Unless otherwise specified, parameters in this datasheet were measured under the conditions of  $T_a=25^{\circ}\text{C}$ , humidity<75%RH with nominal input voltage and rated output load;
4. All index testing methods in this datasheet are based on our company corporate standards;
5. We can provide other analog transformer customization service, please contact our technicians directly for specific information;
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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