TTB05xx-1T transformer

RoHS

FEATURES

- Compact SMD package
- I/O isolation test voltage 1.65k VDC
- Operating ambient temperature range: -40℃ to +125℃
- Meets EN62368 standards

TTB05xx-1T transformers feature 1650VDC primary side to secondary side and operating temperature of -40℃ to +125℃. Compatible with SCM1201ATA used as an 1W DC-DC converter with 5V input. 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) Nominal (Range)	Output Voltage(VDC)	Output Current(mA) Max.	Power (W)
TTB0505-1T	5 (4.5-5.5)	5	200	1
TTB0509-1T		9	111	1

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

General Specifications

Item	Operating Conditions		Min.	Typ.	Max.	Unit
Inductance(L)①	pin 1 to pin 3	5V output	--	832	--	μH
		9V output	--	737	--	
	pin 6 to pin 4	5V output	--	1039	--	
		9V output	--	2768	--	
DCR	pin 1 to pin 3	5V output	--	0.63	--	Ω
		9V output	--	0.60	--	
	pin 6 to pin 4	5V output	--	0.77	--	
		9V output	--	1.3	--	
Isolation	Primary-Secondary Electric Strength Test for 1 minute with a leakage current of 1mA max.		1650	--	--	VDC
Isolation Capacitance	Primary-Secondary capacitance at 100kHz/0.1V		--	20	--	pF
Storage Humidity			--	--	95	%RH
Operating Temperature②			-40	--	+125	℃
Storage Temperature③			-55	--	+125	
Reflow Soldering Temperature④			Peak temp.≤245℃, maximum duration time≤60s over 217℃.			

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	6.50 x 8.80 x 3.60mm
Weight	0.3g(Typ.)
Cooling Method	Free air convection

Material certification

Material	UL No.
Wire	E234867
Bobbin	E150608
Varnish	E317427

Phase Diagram

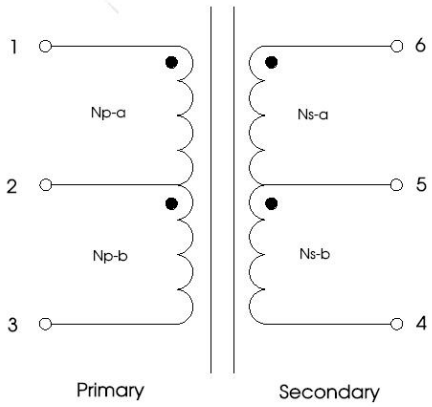


Fig. 1

Turns Ratio (Np：Ns)		
Output voltage(VDC)	Np-a：Ns-a	Np-b：Ns-b
5	1：1.1 (Typ.)	
9	1：1.94 (Typ.)	

Application Circuit

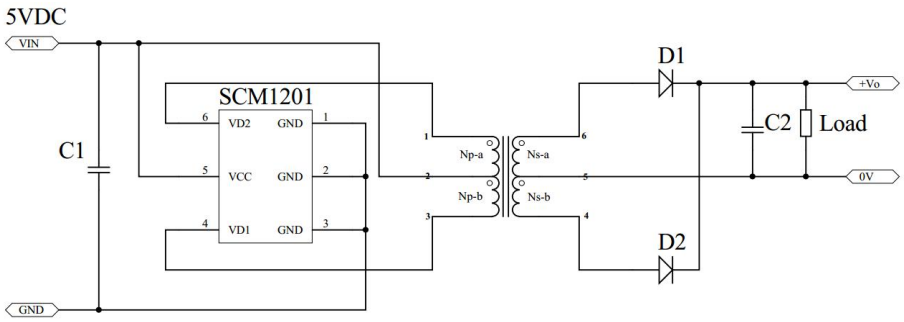


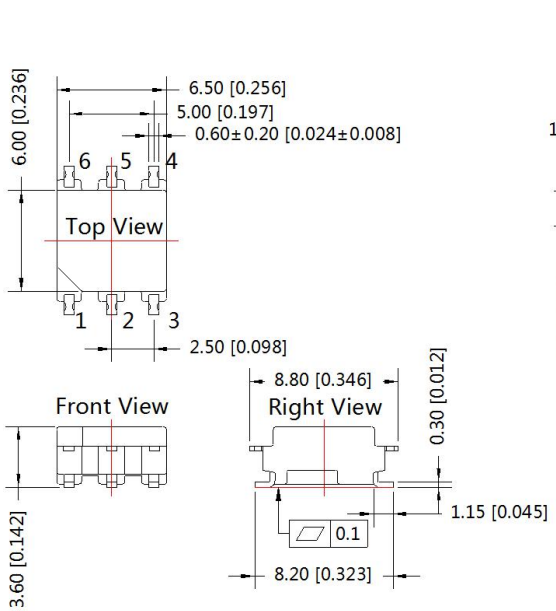
Fig. 2

Table 1: Recommended parameters

IC	SCM1201ATA
C1	1μF/16V
C2	1μF/16V
D1	40V/400mA
D2	40V/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%).

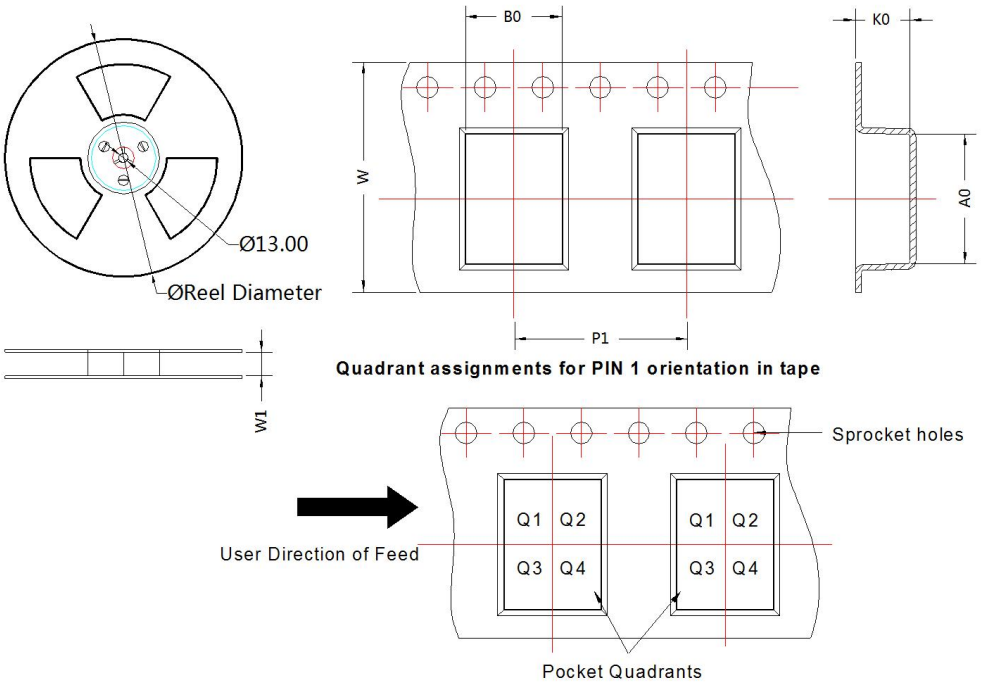
Dimensions and Recommended Layout



Note: Grid 2.54*2.54mm

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

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
TTBxxxx-1T	SMD	6	1200	330.0	16.4	9.00	6.70	3.80	12.00	16	Q3

Notes:

1. For additional information on Product Packaging please refer to www.mornsun-power.com. Packaging bag number: 58200077;
2. Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta=25℃, 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. 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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