MORNSUN®

CTTF0515-3T Automotive Grade Transformer

RoHS

3 years Warranty

FEATURES

- Compact SMD package
- I/O isolation test voltage 3000VAC
- Operating ambient temperature range: -40℃ to +125℃
- Third party AEC-Q200 validation

CTTF0515-3T automotive grade transformer, it features primary and secondary isolation voltage up to 3000VAC, allowable operating temperature -40° C to +125° C. With Mornsun IC SCM1212-Q design, it can be used in 5VDC input, 15VDC output power demand that less than 3W electrical isolation scenarios, such as: new energy PTC, BMS, motor drive circuit.

Selection Guide

Part No.	Input Voltage(VDC) Nominal (Range)	Output Voltage(VDC)	Output Current(mA) Max.	Power (W)
CTTF0515-3T	5 (4.5-5.5)	15	200	3

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	178	356	534	μH
	pin 6 to pin 4	529	1057	1586	
DCR	pin 1 to pin 3	--	650	--	mΩ
	pin 6 to pin 4	--	865	--	
Isolation	Primary-Secondary Electric Strength Test for 1 minute with a leakage current of 1mA max.	3000	--	--	VAC
Isolation Capacitance	Primary-Secondary capacitance at 100kHz/0.1V	--	20	--	pF
Voltage-Time②		11	--	--	Vus
Storage Humidity	Non-condensing	--	--	95	%RH
Operating Temperature③		-40	--	+125	℃
Storage Temperature④		-55	--	+125	
Reflow Soldering Temperature⑤		Peak temp.≤245℃, maximum duration time≤60s over 217℃.			
Moisture Sensitivity Level (MSL)	IPC/JEDEC J-STD-020D.1	Level 1			

Notes: ①Test conditions: 100kHz/0.1V;
②Product of input voltage and excitation time;
③The temperature of the transformer(ambient plus temperature rise) should be within the operating temperature range;
④The storage temperature of the transformer only;
⑤It is suggested 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	0.8g(Typ.)
Cooling Method	Free air convection

Material certification

Material	UL No.
Wire	E234867
Bobbin	E150608

Phase Diagram

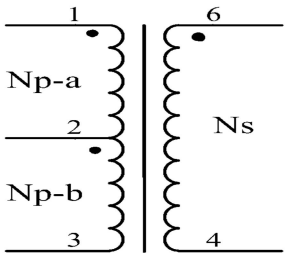


Fig. 1

Turns Ratio (Np：Ns)		
Output voltage(VDC)	Np-a：Ns	Np-b：Ns
15	1: 3.4 (Typ.)	

Application Circuit

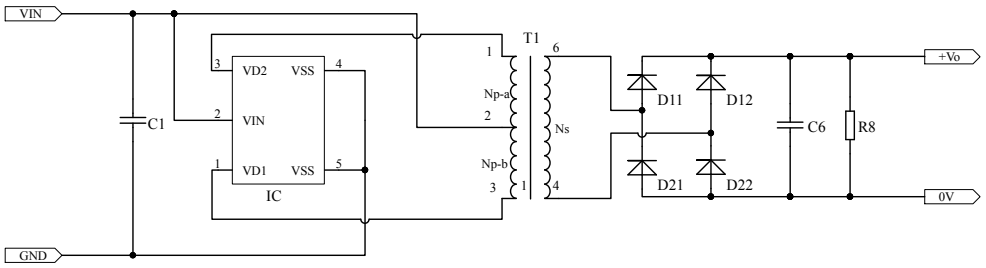


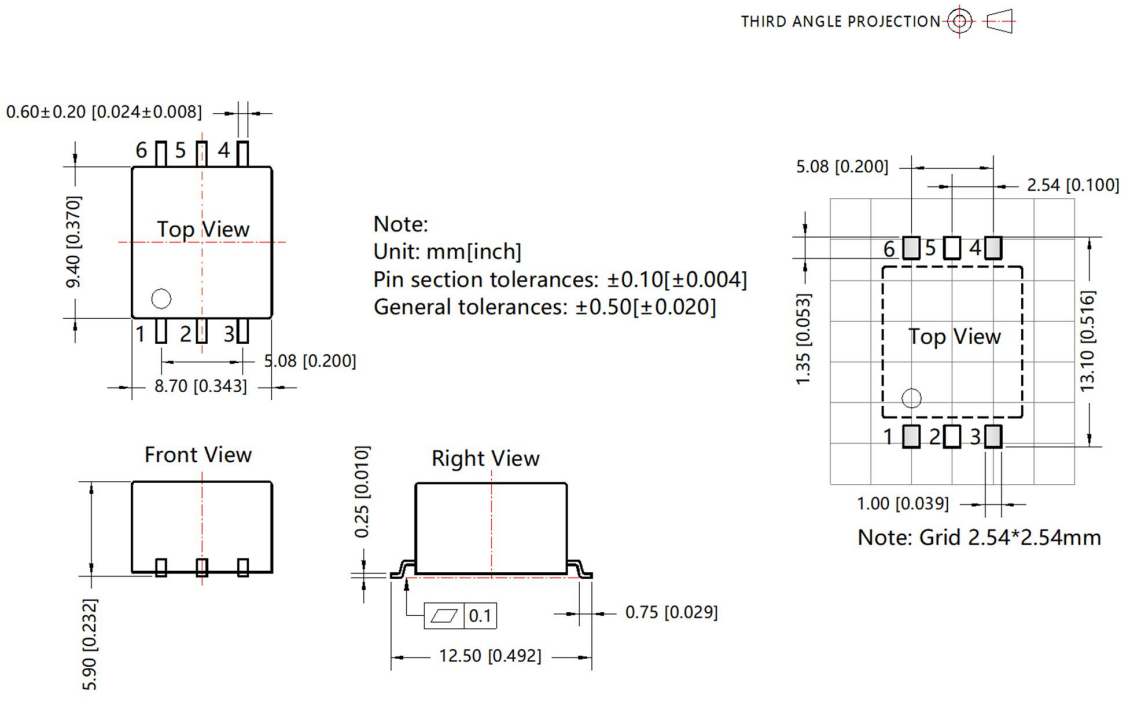
Fig. 2

Table 1: Recommended parameters

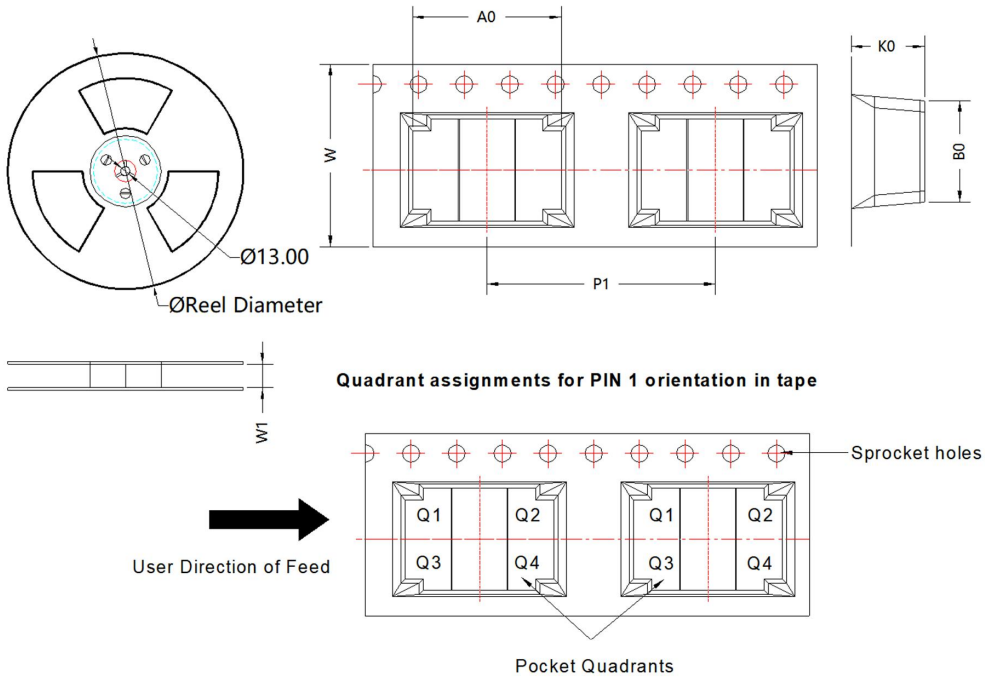
IC	SCM1212-Q
C1	1μF/25V
C6	1μF/25V
D11	40V/1A
D12	40V/1A
D21	40V/1A
D22	40V/1A
R8	51kΩ

Notes:
1. Full bridge rectifier circuit is recommended for the secondary side of transformer
2. 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.
3. 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



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
CTTF0515-3T	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. Roll packaging bag number: 58200091;
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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