Form No: XXXXXX-1-0000-TBM02-180800XXX

Specification for Approval

Date: 2023/8/7

Customer : 推廣用

TAI-TECH P/N: DWC321622NF-601

CUSTOMER P/N:

DESCRIPTION:

QUANTITY: pcs

REMARK:		
Customer Approval Feedback		

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Sales Dep.

APPROVED	CHECKED

R&D Center

APPROVED	CHECKED	DRAWN

SMD Pulse Transformer

DWC321622NF-601

ECN HISTORY LIST

REV	DATE	DESCRIPTION	APPROVED	CHECKED	DRAWN
備註					

SMD Pulse Transformer

DWC321622NF-601

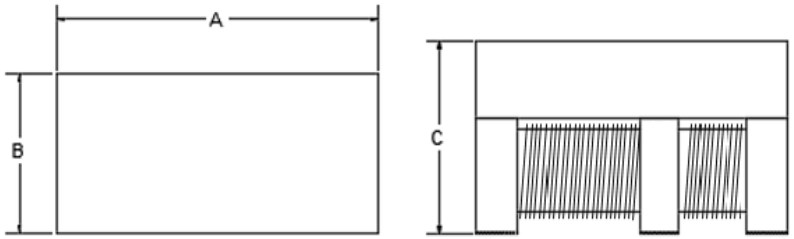
1. Features

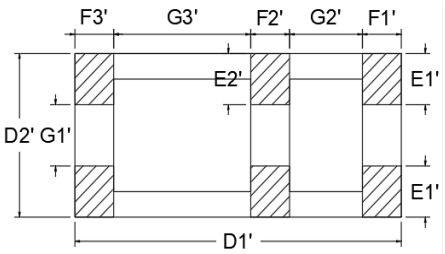
1. SMD type pulse transformers.
2. Inductance and common mode rejection components
3. DWC321622 is small size and low profile 3.20X1.60X2.20 mm.
4. 100% Lead(Pb) & Halogen-Free and RoHS compliant.

Halogen-free

Pb-free

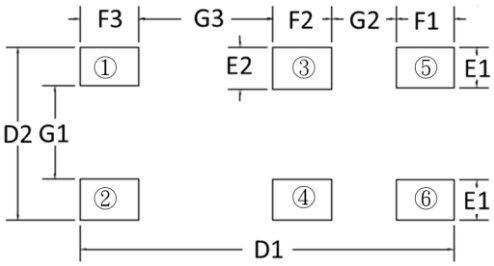
2. Dimension





Bot View

Recommended PC Board Pattern



Top View

PC board should be designed so that products can prevent damage from mechanical stress when warping the board. Products shall be positioned in the sideway direction against the mechanical stress to prevent failure.

Series	A(mm)	B(mm)	C(mm)	D1(mm)	D2(mm)	E1(mm)	E2(mm)	F1(mm)	F2(mm)	F3(mm)	G1(mm)	G2(mm)	G3(mm)
321622NF	3.36±0.2	1.6±0.2	2.2 ±0.2	3.46	1.70	0.55	0.47	0.45	0.5	0.45	0.6	0.57	1.49
	D1'(mm)	D2'(mm)	E1'(mm)	E2'(mm)	F1'(mm)	F2'(mm)	F3'(mm)	G1'(mm)	G2'(mm)	G3'(mm)			
	3.36±0.2	1.6±0.2	0.5±0.1	0.42±0.1	0.4±0.1	0.4±0.1	0.4±0.1	0.6±0.1	0.62±0.1	1.54±0.2			

Units: mm

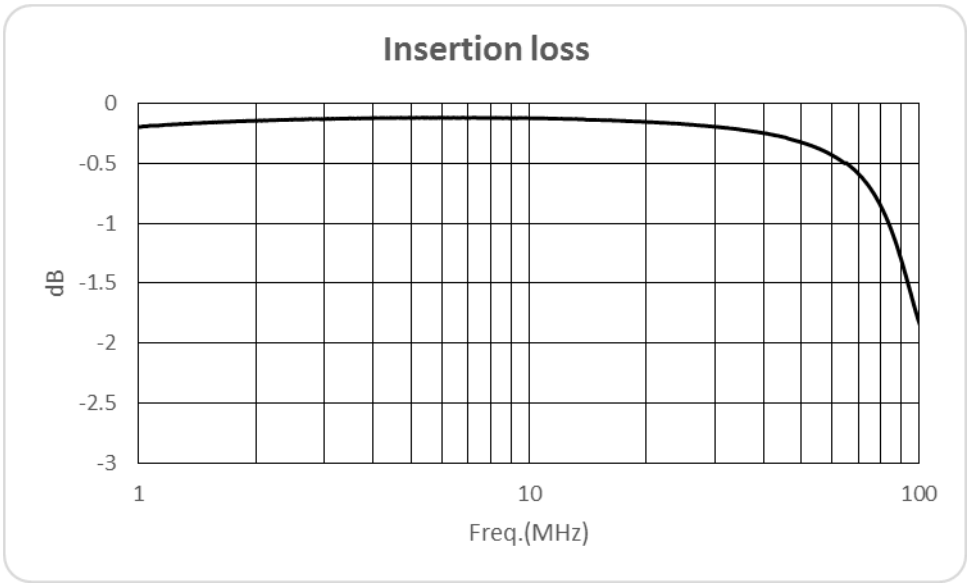
3. Part Numbering

DWC	321628	N	F	-	601
A	B	C	D		E

A: Series
B: Dimension AxBxC
C: Material Ferrite Core
D: Number of Lines F=4 lines
E: Impedance 601=600Ω
F:Control S/N

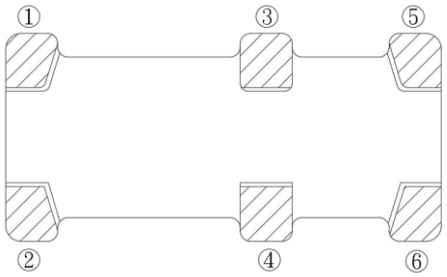
4. Specification

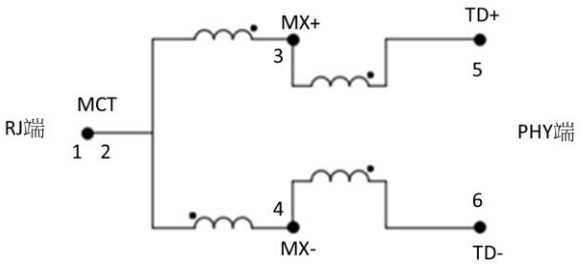
TAI-TECH Part Number	Inductance (uH min) (DC bias 0mA) ①to④ or ②to③	Inductance (uH min) (DC bias 0mA) ③to④ (①short②)	Test Frequency (Hz/V)	Insertion loss 1~100MHz (dB typ)	Return loss 100MHz (dB typ)	Rated Current (mA)	Rated Volt. (Vdc)	Common mode Impedance (Ω typ.) (100MHz) (③④to⑤⑥)	DC Resistance (Ω) typ.. ⑤to⑥ (①short②)	Turns ratio ①to⑤ : ②to⑥
DWC321622NF-601	55 uH	220 uH	100K/0.1	-2.0	-10	200	50	601	3.2	1:1


Insertion loss
0
-0.5
-1
-1.5
-2
-2.5
-3
dB
1
10
100
Freq.(MHz)


Return loss
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
dB
1
10
100
Freq.(MHz)

5.Schematic Diagram

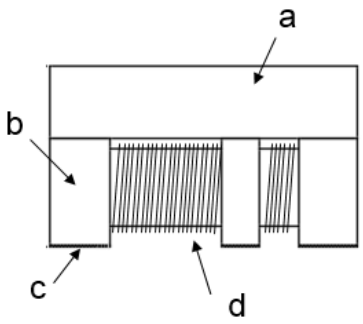




Top View

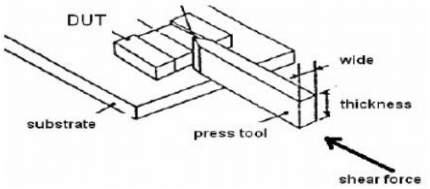
6. Materials

No.	Description	Specification
a.	Upper Plate	Ferrite
b.	Core	Ferrite Core
c	Termination	Tin Pb Free
d	Wire	Enameled Copper Wire



7. Reliability and Test Condition

Item	Performance	Test Condition
Operating temperature	-40~ +85℃ (Including self - temperature rise)	
Storage temperature	-40~ +85℃ (on board)	
Electrical Performance Test		
Ls	Refer to standard electrical characteristics list.	HP-4291A+HP-16092A
Cp		HP-4192A
Insertion Loss		Agilent E5071C
Reliability Test		
Life Test	Appearance：No damage. Inductance：within±10% of initial value Cp: within ±15% of initial value and shall not Insertion Loss：within Specification	Preconditioning: Run through IR reflow for 2 times.(IPC/JEDEC J-STD-020DClassification Reflow Profiles) Temperature：85±2℃ Applied current：rated current Duration：1000±12hrs Measured at room temperature after placing for 24±2 hrs
Load Humidity		Preconditioning: Run through IR reflow for 2 times.(IPC/JEDEC J-STD-020DClassification Reflow Profiles Humidity：85±2%R.H, Temperature：85℃±2℃ Duration：1000hrs Min. with 100% rated current Measured at room temperature after placing for 24±2 hrs
Moisture Resistance		Preconditioning: Run through IR reflow for 2 times.(IPC/JEDEC J-STD-020DClassification Reflow Profiles 1. Baked at50℃ for 25hrs, measured at room temperature after placing for 4 hrs. 2. Raise temperature to 65±2℃ 90-100%RH in 2.5hrs, and keep 3 hours, cool down to 25℃ in 2.5hrs. 3. Raise temperature to 65±2℃ 90-100%RH in 2.5hrs, and keep 3 hours, cool down to 25℃ in 2.5hrs,keep at 25℃ for 2 hrs then keep at -10℃ for 3 hrs 4. Keep at 25℃ 80-100%RH for 15min and vibrate at the frequency of 10 to 55 Hz to 10 Hz, measure at room temperature after placing for 1~2 hrs.
Thermal shock		Preconditioning: Run through IR reflow for 2 times.(IPC/JEDEC J-STD-020DClassification Reflow Profiles Condition for 1 cycle Step1：-40±2℃ 30±5min Step2：25±2℃ ≦0.5min Step3：85±2℃ 30±5min Number of cycles： 500 Measured at room temperature after placing for 24±2 hrs
Vibration		Oscillation Frequency: 10 ~ 2K ~ 10Hz for 20 minutes Equipment： Vibration checker Total Amplitude:1.52mm±10% Testing Time : 12 hours(20 minutes, 12 cycles each of 3 orientations)。

<table>
<tr><th>Item</th><th>Performance</th><th>Test Condition</th></tr>
<tr><td>Bending</td><td rowspan="2">Appearance：No damage.
Inductance：within±10% of initial value
Cp: within ±15% of initial value and shall not
Insertion Loss：within Specification</td><td>Shall be mounted on a FR4 substrate of the following dimensions: >=0805 inch(2012mm):40x100x1.2mm
<0805 inch(2012mm):40x100x0.8mm
Bending depth: >=0805 inch(2012mm):1.2mm
<0805 inch(2012mm):0.8mm
duration of 10 sec.</td></tr>
<tr><td>Shock</td><td>
<table>
<tr><th>Type</th><th>Peak value (g's)</th><th>Normal duration (D) (ms)</th><th>Wave form</th><th>Velocity change (Vi)ft/sec</th></tr>
<tr><td>SMD</td><td>50</td><td>11</td><td>Half-sine</td><td>11.3</td></tr>
<tr><td>Lead</td><td>50</td><td>11</td><td>Half-sine</td><td>11.3</td></tr>
</table>
</td></tr>
<tr><td>Solder ability</td><td>More than 95% of the terminal electrode should be covered with solder。</td><td>Preheat: 150℃,60sec.。
Solder: Sn96.5% Ag3% Cu0.5%
Temperature: 245±5℃。
Flux for lead free: Rosin. 9.5%。
Dip time: 4±1sec。
Depth: completely cover the termination</td></tr>
<tr><td>Resistance to Soldering Heat</td><td rowspan="2">Appearance：No damage.
Inductance：within±10% of initial value
Cp: within ±15% of initial value and shall not
Insertion Loss：within Specification</td><td>Depth: completely cover the termination
<table>
<tr><th>Temperature(°C)</th><th>Time(s)</th><th>Temperature ramp/immersion and emersion rate</th><th>Number of heat cycles</th></tr>
<tr><td>260 ±5 (solder temp)</td><td>10 ±1</td><td>25mm/s ±6 mm/s</td><td>1</td></tr>
</table>
</td></tr>
<tr><td>Terminal Strength</td><td>Preconditioning: Run through IR reflow for 2 times.(IPC/JEDEC J-STD-020DClassification Reflow Profiles
With the component mounted on a PCB with the device to be tested, apply a force(>0805:1kg , <=0805:0.5kg)to the side of a device being tested. This force shall be applied for 60 +1 seconds. Also the force shall be applied gradually as not to apply a shock to the component being tested.
 
</td></tr>
</table>

8. Soldering and Mounting

8-1. Soldering

Mildly activated rosin fluxes are preferred. TAI-TECH terminations are suitable for all wave and re-flow soldering systems. If hand soldering cannot be avoided, the preferred technique is the utilization of hot air soldering tools.

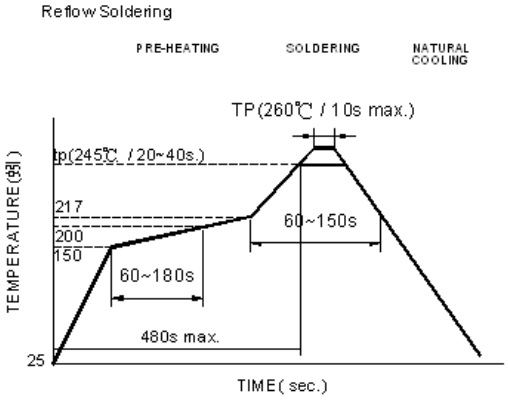
8-1.1 Solder re-flow:

Recommended temperature profiles for re-flow soldering in Figure 1.

8-1.2 Soldering Iron(Figure 2):

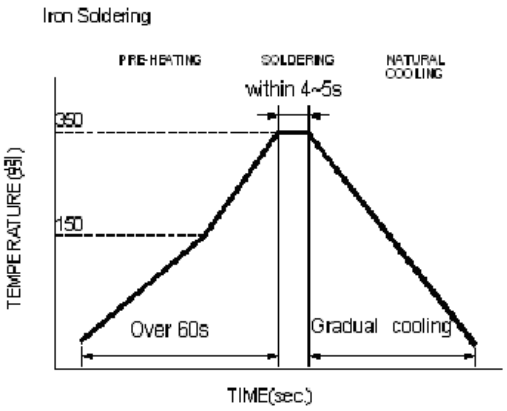
Products attachment with a soldering iron is discouraged due to the inherent process control limitations. In the event that a soldering iron must be employed the following precautions are recommended.

- Preheat circuit and products to 150℃
- Never contact the ceramic with the iron tip
- Use a 20 watt soldering iron with tip diameter of 1.0mm
- 350℃ tip temperature (max)
- 1.0mm tip diameter (max)
- Limit soldering time to 4~5 sec.



Reflow times: 3 times max.

Fig.1



Iron Soldering times: 1 times max.

Fig.2

Application Notice

- Storage Conditions

  To maintain the solderability of terminal electrodes:

  1. TAI-TECH products meet IPC/JEDEC J-STD-020D standard-MSL, level 1.
  2. Temperature and humidity conditions: Less than 40℃ and 60% RH.
  3. Recommended products should be used within 12 months form the time of delivery.
  4. The packaging material should be kept where no chlorine or sulfur exists in the air.

- Transportation

  1. Products should be handled with care to avoid damage or contamination from perspiration and skin oils.
  2. The use of tweezers or vacuum pick up is strongly recommended for individual components.
  3. Bulk handling should ensure that abrasion and mechanical shock are minimized.