

## BOURNS (XIAMEN) LTD

# SPECIFICATION FOR APPROVAL

CUSTOMER: Various

AGENCY: -----

CUSTOMER P/N: ----- CUSTOMER REV.: -----

BOURNS P/N.: SM91081AL BOURNS REV.: X1

PRODUCT NAME: SM91081AL PROJECT No.: -----

DESCRIPTION: LAN Transformer, 10 Base-T, SGL

FILE No.: DSS-SM91081AL RELEASED DATE: 2025/03/18

POSITION	SIGNATURE	DATE
MADE	Larry Gao	2025/03/18
CHECKED	Yummy Lin	2025/03/18
APPROVED	Ian Yan	2025/03/18
BOURNS CACHET		

SIGNATURE	
NAME	
POSITION	
DATE	
CUSTOMER CACHET	

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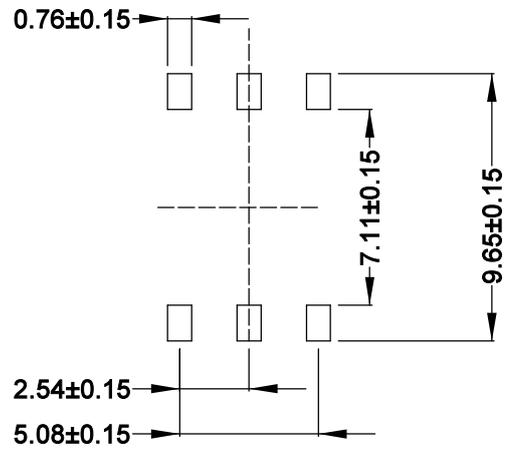
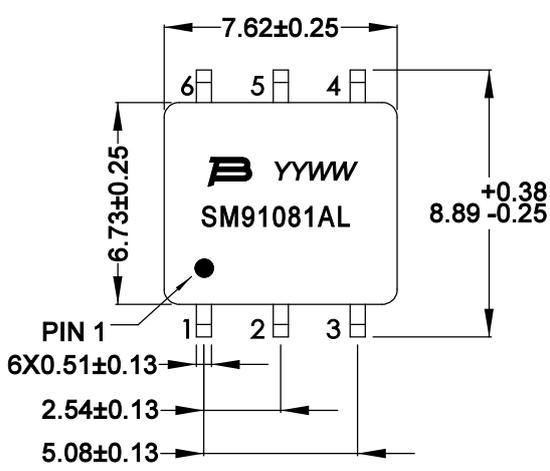
# AMENDMENT RECORD

Rev.	Reason For Change	Details	Approved by	Approved Date
X1	The First Submittal	New released	Ian Yan	2025/03/18

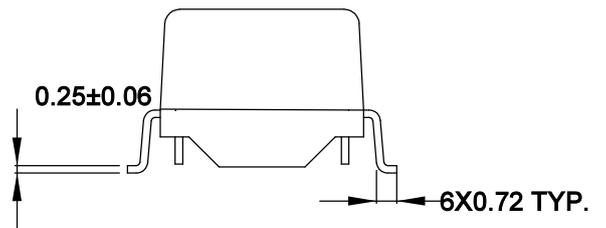
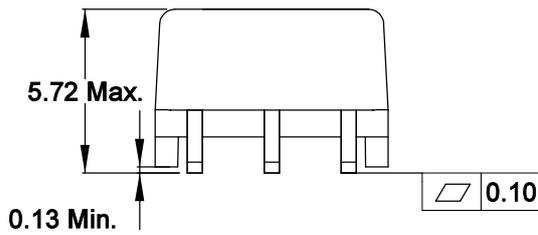
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 BOURNS (XIAMEN) LTD		PRODUCT NAME: <p style="text-align: center; font-weight: bold;">SM91081AL</p>	
TOLERANCE (UNLESS OTHERWISE SPECIFIED)	SCALE: <b>NTS.</b>	PROJECT NO.: -----	CUSTOMER: -----
0<L<5:±0.1 5<L<16:±0.3 16<L<50:±0.5	ANGLE: ±1°	PAGE NO.: <b>1 OF 6</b>	CUSTOMER P/N: ----- BOURNS P/N: <b>SM91081AL</b>
			REV.: ----- <b>REV: X1</b>

# 1. DIMENSIONS (mm):



Suggested PAD Layout

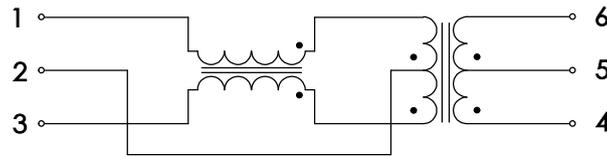


<b>REMARKS</b>
<b>MARKING</b>
<p>Bourns Logo ——— YY — Year          WW — Week          SM91081AL — Part No.          PIN 1 ———</p>

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<b>BOURNS®</b> BOURNS (XIAMEN) LTD		PRODUCT NAME: SM91081AL	<b>RoHS</b> COMPLIANT
TOLERANCE (UNLESS OTHERWISE SPECIFIED)	SCALE: NTS.	PROJECT NO.: -----	CUSTOMER: -----
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		BOURNS P/N: SM91081AL	REV.: X1

## 2. SCHEMATIC:



● Means the same polarity

## 3. ELECTRICAL CHARACTERISTIC: At 25 °C

NO.	ITEM	TERMINAL	ELECTRICAL CHARACTERISTICS	TOL	TEST METERS/ CONDITION	REMARKS
1	Inductance	1-3	350 $\mu$ H Min.	---	E4980A/100kHz,100mV, 8mA DC Bais@-40~125°C	
2	Leakage inductance	(1-3) with (6-4) shorted	0.5 $\mu$ H Max.	---	E4980A/100kHz,100mV	
3	C <sub>ww</sub>	1-6	35pF Max.	---	E4980A/100kHz,100mV	
4	DCR	1-3	1.4 $\Omega$ Max.	---	UC2869XB	
		4-6	1.0 $\Omega$ Max.			
5	Turn Ratio	(1-3):(6-4)	1:1	$\pm$ 2%	WK-3260B/100kHz,100mV	
6	HI-POT	(1-3)-(6-4)	1500VAC/2250VDC	---	CS2671B/1mA,60S	
7	Insertion Loss	(1-3)-(6-4)	1~100MHz:-1.1dB Max.	---	Network analyzer: ZNB4	
8	Return Loss	(1-3)-(6-4)	1~40MHz:-16dB Min. 40~100MHz:-10+20* log(f/80MHz)dB Min.	---	Network analyzer: ZNB4	
9	Differential to Common rejection ratio	(1-3)-(6-4)	30MHz:-35dB Min. 60MHz:-35dB Min.	---	Network analyzer: ZNB4	
10	Common mode rejection ratio	(1-3)-(6-4)	1~60MHz:-37dB Min. 60~100MHz:-30dB Min.	---	Network analyzer: ZNB4	

## 4. GENERAL INFORMATION:

- 4.1 Design to comply with AEC-Q200.
- 4.2 RoHS compliant.
- 4.3 Compliant to J-STD-020: level 1, no moisture sensitive (T<sub>p</sub>:250°C Max.).
- 4.4 Operation temperature range: - 40°C to +125°C.
- 4.5 Storage temperature range: - 25°C to +85°C.
- 4.6 Product scrap disposal based on the local laws and regulations.

**BOURNS**®

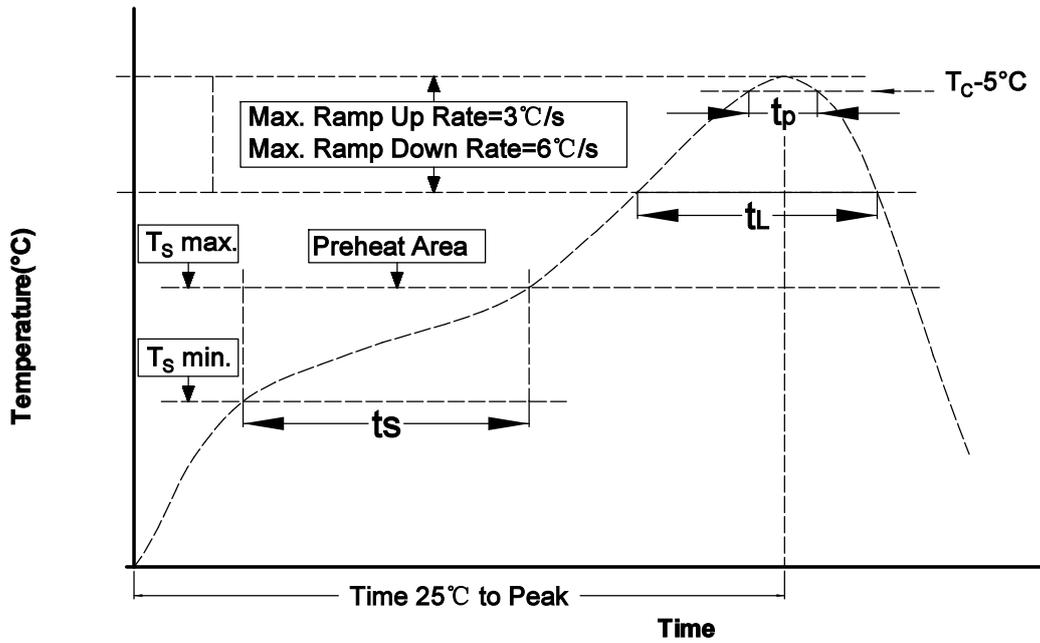
PRODUCT NAME:

SM91081AL

ROHS  
COMPLIANT

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### 5. THE REFLOW PROFILE CURVE:



Profile feature	Pb Free Assembly
Preheat -Temperature Min. (Ts Min.) -Temperature Max. (Ts Max.) -Time (ts Min. to ts Max.)	150°C 200°C 60~120 seconds
Ramp-up Rate(TL-Tp)	3°C/ second Max.
Liquidous Temperature (TL) -Time (tL) maintained above TL	217°C 60~150 seconds
Peak package body Temperature(Tp)	Tp≤Tc see table below
Time within 5°C of the specified classification temperature (Tc)	30 seconds
Ramp-Down Rate(Tp to T <sub>L</sub> )	6°C/second Max.
Time 25°C to Peak Temperature	8 minutes Max.

Table Pb-Free Process-Classification Temperatures(Tc)

Package Thickness	Volume mm <sup>3</sup> <350	Volume mm <sup>3</sup> 350~2000	Volume mm <sup>3</sup> >2000
<1.6mm	260°C	260°C	260°C
1.6mm~2.5mm	260°C	250°C	245°C
>2.5mm	250°C	245°C	245°C

NOTE: Refer to IPC/JEDEC J-STD-020

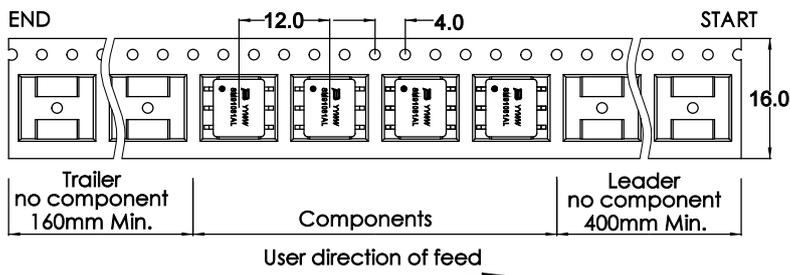
The part has been tested under this reflow condition, deviations from this especially higher temperature or longer durations, could impact performance.

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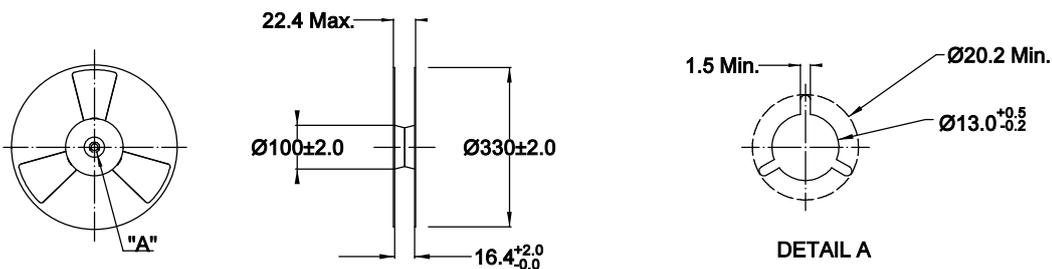
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## 6. PACKING:

### 6.1.Configuration:

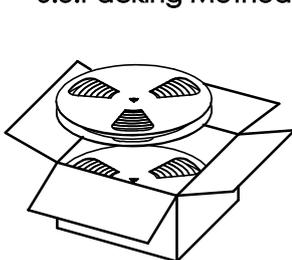


### 6.2.Reel mechanical dimension:

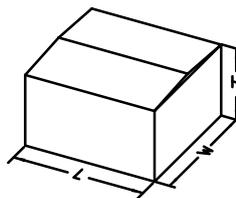


Specification and tolerances comply with EIA-481 requirement.

### 6.3.Packing Method:



Packing : Reel Packing  
 One reel : 800pcs  
 5 reels/standard box : 4000pcs

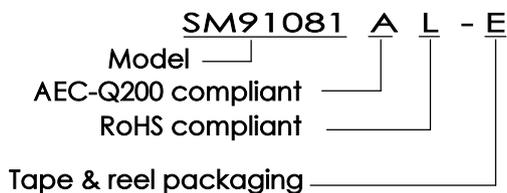


Package size:  
 355(L)X350(W)X175(H) mm

Each reel should be labeled with the BXL standard label.

### 6.4.PACKAGING SPECIFICATION AND HOW TO ORDER:

SM91081AL-E — Bourns part No. with Tape and reel packaging, 800pcs/reel. 4000pcs/standard box.



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# BOURNS®

Automotive

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Bourns® part number: SM91081AL

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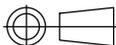
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