SPECIFICATION FOR APPROVAL

PROD. NAME	TRANSFORMER	DWG. NO.	SM68009L

A. ELECTRICAL SPECIFICATIONS @25℃

OCL:500uH Min (1-3) @ 100KHz,0.1V

LL:1.2uH Max @100KHz,0.1V

Cw/w:12PF Max @100KHz,0.1V

DCR:1-3=0.56 ohm Max 6-4=0.224 ohm Max

Turn Ratio:(1-3):(6-4)=2.5CT:1CT±5%

Polarity:1-6In-Phase

Rated current(PIN4-6): 500mA TYP

Isolation Hi-Pot:2000VAC

OPERATING TEMPERATURE: -0℃ TO +70℃.

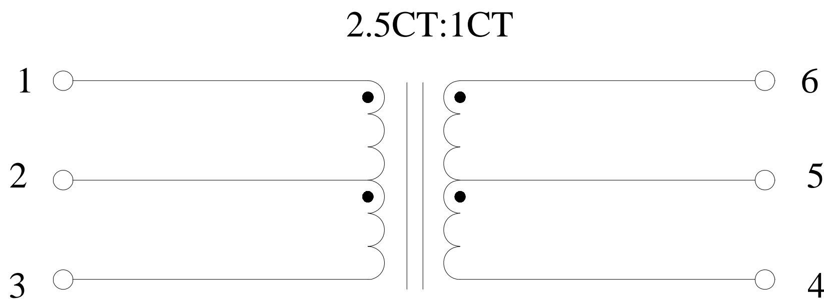
OPERATING TEMPERATURE: -40℃TO +85℃.

Internal Joint : Sn05pb95Solder

(It is exempted under the RoHS Directive--Annex,Item7)

Outer Lead: Sn99.3Cu0.7 or Sn96.5Ag3.0Cu0.5Solder

B. SCHEMATIC:



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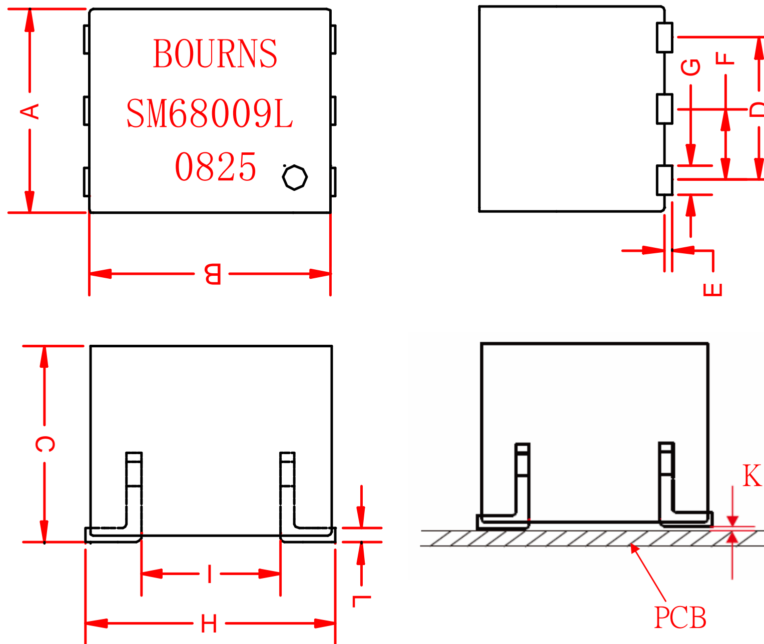
C. DIMENSIONS & MARKING:



	MILLIMETERS		INCHES	
DIM	Center	Tolerances	Center	Tolerances
A	4.30	±0.254	0.168	±0.010
B	5.20	±0.254	0.194	±0.010
C	4.20MAX		0.165MAX	
D	3.00	±0.127	0.118	±0.005
E	0.15	±0.127	0.006	±0.005
F	1.50	±0.127	0.059	±0.005
G	0.60	±0.127	0.024	±0.005
H	5.40	±0.254	0.213	±0.010
I	3.00	±0.127	0.118	±0.005
L	0.30	±0.127	0.012	±0.005
K	0.1MAX		0.0039MAX	

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D. RELIABILITY TEST CRITERIA:

-1. Temperature rise: 45℃ max.

-2. Operating temperature range (Includeing self-temperature rise): 0℃ to 70℃

-3. Terminal strength: Pull test withstand 10N 60+/-0.5S no looseness or movement.

-4. Solderbility: Dipped in 235℃+/-5℃ molten solder for 3+/-0.5 seconds95% min shall be smooth any and bright

-5. Resistance to soldering heat : Dipped in 260℃+/-5℃ molten solder for 5+/-0.5S, shall not be abnormality.

-6. Vibration: 1.5mm amplitude total excursion 10-55-10 Hz traversed in 1minute, x.y.z, axis for 2 hours. Shall not be any abnormality.

-7. Random drop (Packing condition): Height 60cm, 3 times on the wood floorboard ,shall not be any abnormality.

-8. Dry heat: 120+/-2℃ 96 hours.

-9. Cold: -25+/-2℃ 96 hours.

-10. Damp Heat: 40+/-2℃, 95+/-3% RH 96 hours.

-11. Change of temperature: exposed 5 cycle; each consisting of 30 minutes at -25+/-2℃,2-3 minutes at 20+/-2℃,30 minutes at 85+/-2℃, 2-3 minutes at 20+/-2℃.

Remarks: After reliability test per item 8,9,10,11, in prior to the test as specified, the transformer / coil would be exposed to the room temperature for 1-2 hours,the component meets all requirements according to this specification.

E. MATERIAL LIST:

Item	Part Name	Materials	Supplier	UL NO.
01	Lead frame	Phosphor Bronze	Xiang He	N/A
			Rui Yang	
02	Core	Soft Ferrite	Firstfed Technology Co., Ltd.	N/A
			Yean Shing Technology Corp.	
03	Wire	Magnet Wire Rating 180℃	Jung Shing Wire Co., Ltd.	E174837
			Prosperity Wire and Cable Co., Ltd.	E196072
04	Epoxy	EME-1200	Chang Chun Plastics Co., Ltd.	E59481
05	Silicone Rubber	KE1204A/B	Shin-Etsu Chemical Co., Ltd.	E48923
06	Solder(Internal Joint)	Sn05Pb95	Xin Stannum Industry(Hui Zhou)Co.	N/A
			High Quality Technology Co., Ltd.	
07	Solder(Outer Lead)	Sn99.3 Cu 0.7 or Sn96.5Ag3.0Cu0.5	Xin Stannum Industry(Hui Zhou)Co.	N/A
			High Quality Technology Co., Ltd.	
08	INK	ZSR-150	Chung Yu Industry Corporation.	N/A

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F. Dimensions Test Data

Sepc \ N0	1	2	3	4	5
A：4.30±0.254 (mm)	4.29	4.30	4.30	4.33	4.27
B：5.20±0.254 (mm)	5.21	5.15	5.24	5.17	5.14
C：4.20 Max (mm)	4.11	4.13	4.11	4.10	4.13
F：1.50±0.127 (mm)	1.51	1.52	1.49	1.51	1.50
G: 0.60±0.127 (mm)	0.58	0.57	0.57	0.57	0.59
H: 5.40±0.254 (mm)	5.46	5.41	5.48	5.45	5.45

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SAMPLE TEST DATA

SPEC \ NO	1	2	3	4	5	6	7	8	9	10
L:(AT 100KHz 0.1V)										
500uH Min										
1-3	754	702	729	621	857	734	679	817	827	818
LL:(AT 100KHz 0.1V)										
1.2uH Max										
1-3(6-4short)	0.55	0.41	0.58	0.35	0.51	0.55	0.65	0.47	0.53	0.45
CWW:(AT 100KHz 0.1V)										
12PF Max										
1-3 TO 6-4	5.20	4.30	4.90	5.00	4.50	4.90	5.20	4.40	4.50	5.40
DCR:(AT 25℃)										
0.56 ohm Max										
1-3	0.47	0.43	0.44	0.45	0.42	0.43	0.46	0.44	0.42	0.46
0.224ohm Max										
6-4	0.21	0.21	0.21	0.21	0.21	0.21	0.20	0.21	0.21	0.21
TURNS RATIO:										
(1-3):(6-4)=2.5CT:1CT±5%	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
HI-POT:										
AT: 2000VAC										
1- 3 TO 6-4	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

MAIN TEST EQUIPMENT

- ■ TOPWARD TPT-500 WITHSTANDING VOLTAGE TESTER
- ■ HEWLETT PACKARD 4277A LCZ METER
- ■ CHEN HWA 3250 AUTOMATIC TRANSFORMER TEST SYSTEM
- ■ CHEN HWA 502A LOW-OHM METER
- □ RF NETWORK ANALYZERS 8712ET

SPECIFICATION FOR APPROVAL

PROD. NAME	TRANSFORMER	DWG. NO	SM68009L

SURFACE MOUNT COMPONENTS REFLOW SOLDERING PROFILE

Phase 1 - Pre-Heat

During the Pre-Heat phase,the solder paste dries and its more volatile ingredients evaporate. The component body temperature should be brought at a controlled rate from room temperature (approximately 25℃) to 175±25℃. The maximum rate of change of temperature during the Pre-Heat phase should be less than +3℃/s to avoid component damage due to thermal stress.

Phase 2 - Flux Activation

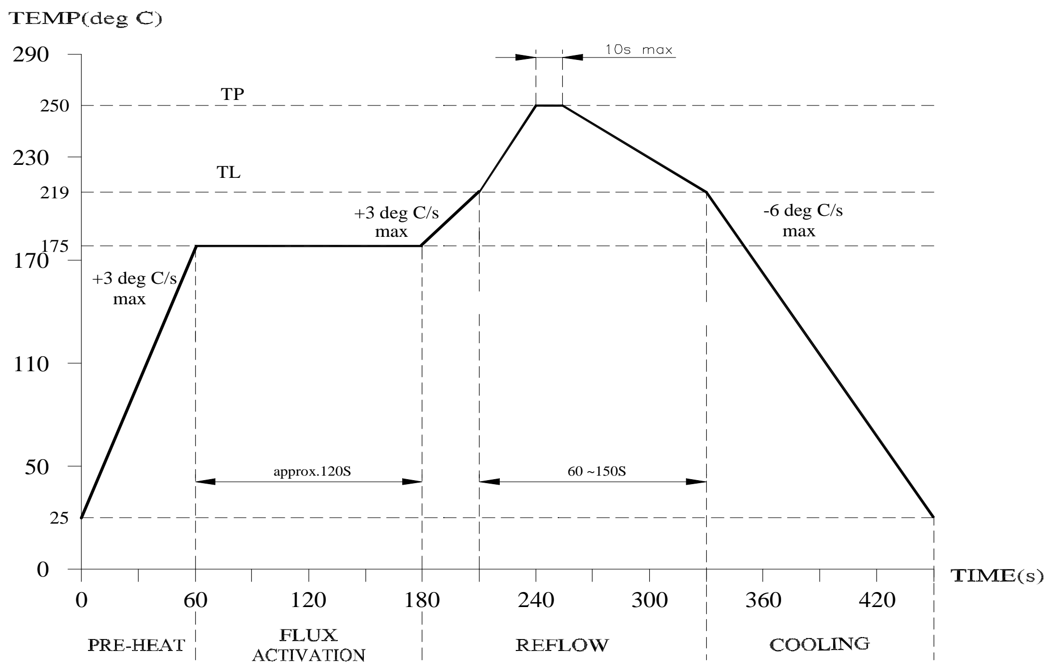
During the Flux Activation phase the flux component of the solder paste has time to micro-each and clean the metallized pads and component leads in preparation for solder reflow. The component body temperature should be maintained at 175±25℃ for approximately 120s.

Phase 3 - Reflow

During the reflow phase the component lead temperature is brought to above the melting point of the solder alloy in use and held long enough to ensure complete wetting of all surfaces. For the industry norm solder alloy Sn96.5 Ag3.0 Cu0.5 this melting temperature is 219℃. The component lead temperature should be maintained above 219℃ for 60 to 150s. The maximum rate of change of temperature during the reflow phase should be less than +3℃/s to avoid component damage due to thermal stress. The maximum component body lead temperature promised for Magtek SMT devices during the reflow phase is 250℃ for less than 10s.

Phase 4 - Cooling

During the cooling phase the molten solder connections are allowed to slowly re-solidify into strong solder fillets. A fast cooling rate reduces the grain size of the inter-metallic compounds and strengthens the solder joints. However, due to the risk of thermal shock and solder joint brittleness, the maximum rate of change of temperature during the cooling phase should be less than -6℃/s.



COMPONENT BODY REFLOW TEMPERATURE PROFILE