

# ***Coupled Power Inductors–SMRN Series***



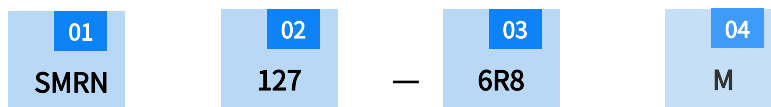
## FEATURES

- ROHS, Halogen free and REACH Compliance.
- 2 coils in 1 package for Sepic topology.
- Ferrite drum ring structure.
- Windings can be connected in series or parallel, offering a wide range of inductance and current ratings.

## APPLICATIONS

Monitors, Game consoles and LED lightings, AP Routers, STBs and LCD TVs. Notebook computer, DC - DC converters, etc

## PRODUCT IDENTIFICATION



01 Type	
SMRN	Coupled Power Inductor

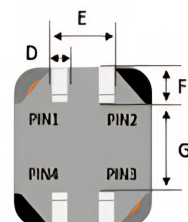
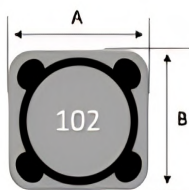
02 External Dimensions (LxH)(mm)	
74	7.3x 4.5
105	10.0x 5.0
125	12.0x 6.5
127	12.0x 8.3

03 Nominal Inductance	
Example	Nominal value
6R8	6.8uH
680	68uH
681	680uH

04 Tolerance	
J	±5%
K	±10%
M	±20%

## SHAPE AND DIMENSIONS

Dimension

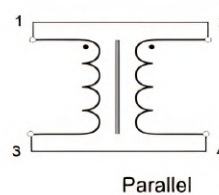
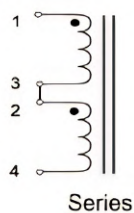
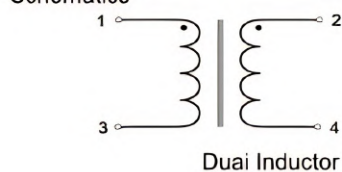


Part Number	Dimensions(mm)						
	A	B	C	D	E	F	G
SMRN74	7.3±0.3	7.3±0.3	4.8MAX	0.7 Type	2.7 Type	1.5 Type	4.5 Type
SMRN105	10.0±0.3	10.0±0.3	5.0MAX	1.0 Type	3.0 Type	2.3 Type	5.2 Type
SMRN125	12.0±0.3	12.0±0.3	6.5MAX	1.7 Type	5.0Type	2.8 Type	7.3 Type
SMRN127	12.0±0.3	12.0±0.3	8.3MAX	1.7 Type	5.0 Type	2.8 Type	7.3 Type

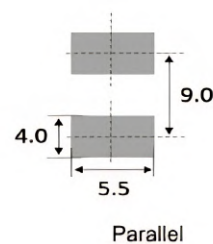
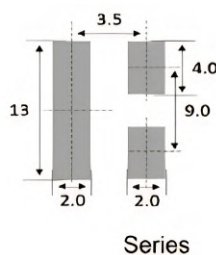
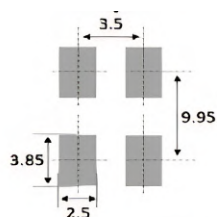
**Note: The products can be customized according to customer requirement**

## ELECTRICAL DIAGRAM

Schematics



## RECOMMENDED PC BOARD PATTERN



## SPECIFICATIONS

### ● SMRN74 TYPE

Part Number	Inductance (uH)	Tolerance	Test condition (KHz/V)	DCR Max(Ω)	I <sub>rms</sub> Current(mA)	I <sub>sat</sub> Current(mA)
SMRN74-3R3	3.3	M	1/0.25	0.033	3200	7000
SMRN74-4R7	4.7		1/0.25	0.037	3000	6000
SMRN74-100	10	K、M	1/0.25	0.10	2000	3700
SMRN74-120	12		1/0.25	0.12	1850	3300
SMRN74-150	15		1/0.25	0.13	1700	3000
SMRN74-180	18		1/0.25	0.17	1600	2800
SMRN74-220	22		1/0.25	0.22	1400	2600



Part Number	Inductance (uH)	Tolerance	Test condition (KHz/V)	DCR Max(Ω)	Irms Current(mA)	Isat Current(mA)
SMRN74-270	27	K、M	1/0.25	0.23	1350	2400
SMRN74-330	33		1/0.25	0.27	1300	2200
SMRN74-390	39		1/0.25	0.38	1100	2000
SMRN74-470	47		1/0.25	0.42	1050	1800
SMRN74-560	56		1/0.25	0.46	1000	1700
SMRN74-680	68		1/0.25	0.60	980	1600
SMRN74-820	82		1/0.25	0.68	850	1500
SMRN74-101	100		1/0.25	0.77	800	1400

**Note: When ordering, please specify tolerance code. Tolerance: K:  $\pm 10\%$ , M:  $\pm 20\%$ ;**

1. Operating temperature range -40 -125°C

2. Isat for Inductance drop 30% from its value without current

3. The products can be customized according to customer requiremen.

#### ● SMRN105 TYPE

Part Number	Inductance (uH)	Tolerance	Test condition (KHz/V)	DCR Max(Ω)	Irms Current(mA)	Isat Current(mA)
SMRN105-100	10	K、M	1/0.25	0.02	3200	9000
SMRN105-220	22		1/0.25	0.10	1800	3000
SMRN105-470	47		1/0.25	0.22	1500	2000
SMRN105-680	68		1/0.25	0.31	1300	1700
SMRN105-101	100		1/0.25	0.40	1200	1300
SMRN105-220	220		1/0.25	0.85	800	1000

#### ● SMRN125 TYPE

Part Number	Inductance (uH)	Tolerance	Test condition (KHz/V)	DCR Max(Ω)	Irms Current(mA)	Isat Current(mA)
SMRN125-4R7	4.7	K、M	1/0.25	0.028	5000	9000
SMRN125-6R8	6.8		1/0.25	0.032	4000	8000
SMRN125-100	10		1/0.25	0.044	3500	6500
SMRN125-220	22		1/0.25	0.080	2500	4200
SMRN125-330	33		1/0.25	0.13	2100	3300
SMRN125-470	47		1/0.25	0.15	1900	3000
SMRN125-101	100		1/0.25	0.32	1300	2000



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**● SMRN127 TYPE**

Part Number	Inductance (uH)	Tolerance	Test condition (KHz/V)	DCR Max(Ω)	Irms Current(mA)	Isat Current(mA)
SMRN127-3R3	3.3	K、M	1/0.25	0.021	7000	13000
SMRN127-4R7	4.7		1/0.25	0.024	5000	12000
SMRN127-6R8	6.8		1/0.25	0.030	4500	10000
SMRN127-100	10		1/0.25	0.036	4000	9000
SMRN127-150	15		1/0.25	0.055	3500	7500
SMRN127-220	22		1/0.25	0.070	2800	6500
SMRN127-330	33		1/0.25	0.105	2300	4500
SMRN127-470	47		1/0.25	0.125	2100	3800
SMRN127-680	68		1/0.25	0.190	1750	3200
SMRN127-101	100		1/0.25	0.255	1400	2500
SMRN127-151	150		1/0.25	0.40	1000	1800
SMRN127-221	220		1/0.25	0.58	1000	1500
SMRN127-471	470			1.00	800	1200

**Note: When ordering, please specify tolerance code. Tolerance: K:  $\pm 10\%$ , M:  $\pm 20\%$ ;**

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3. The products can be customized according to customer requiremen.

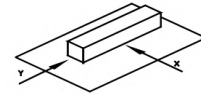


## DETAIL ELECTRICAL CHARACTERISTICS

1. Operating temperature range: -40 to + 105°C(Includes temperature when the coil is heated) .
2. External appearance: On visual inspection, the coil has no external defects.
3. Terminal strength: After soldering. Between copper plate and terminals of coil. Push in two directions of X.Y

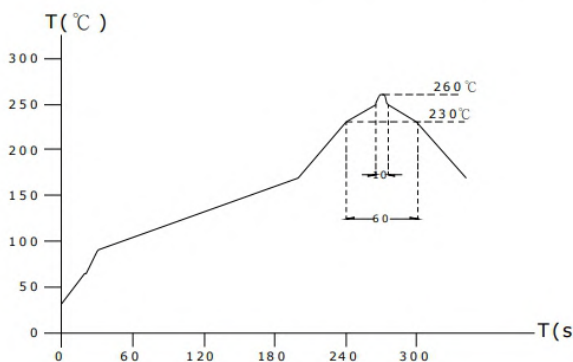
withstanding at below conditions.

Terminal should not peel off. (refer to figure at right) 5. 0N 60 sec.



4. Insulating resistance: Over 100MΩ at 100V D.C. between coil and core.
5. Dielectric strength: No dielectric breakdown at 100V D.C. for 1 minute between coil and core.
6. Temperature characteristics: Inductance coefficient  $(0\sim 2,000)\times 10^{-6}/^{\circ}\text{C}$  (-25~+80°C degree Celsius), inductance deviation within  $\pm 5.0\%$ , after 96 hours.
7. Humidity characteristics(Moisture Resistance): Inductance deviation within  $\pm 5\%$ , after 96 hours in 90~95% relative humidity at  $40 \pm 2^{\circ}\text{C}$  and 1 hour drying under normal condition.
8. Vibration resistance: Inductance deviation within  $\pm 5\%$ , after vibration for 1 hour. In each of three orientations at sweep vibration (10~55~10 Hz) with 1.5mm P-P amplitudes.
9. Shock resistance: Inductance deviation within  $\pm 5\%$ , after being dropped once with 981m/s<sup>2</sup> (100G) shock attitude upon a rubber block method shock testing machine, in three different orientations.
10. Resistance to Soldering Heat: 260°C, 10 seconds(See attached recommend reflow) .
11. Storage condition: Temperature Range: 0°C ~ 35°C; -40°C ~ 105°C (after PCB), Humidity Range: 50% ~ 70% RH.
12. Use components within 12 months. If 12 months or more have elapsed, check solderability before use.
13. Reflow profile recommend:

Lead-free heat endurance test



Lead-free the recommended reflow condition

