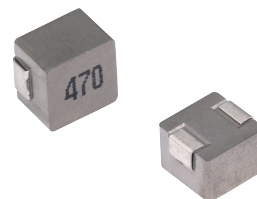


## FEATURES

- Powder iron core material
- Magnetically shielded, low EMI
- High current carrying capacity, Low core losses
- Frequency range up to 3MHz
- Operate temperature range ....  $-40^{\circ}\text{C} \sim +125^{\circ}\text{C}$  (Including self temp. rise)
- RoHS compliant



## APPLICATIONS

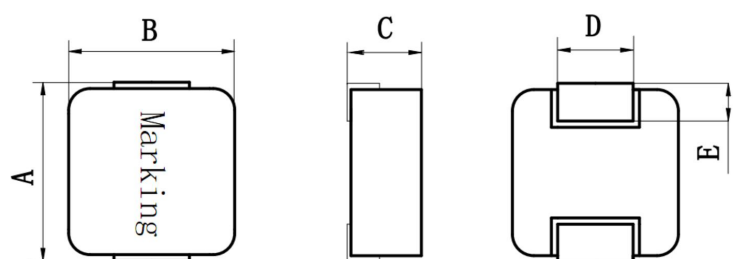
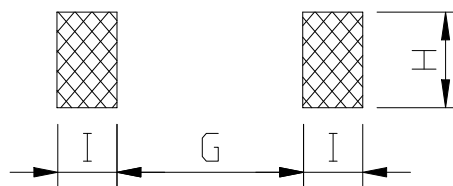
- Voltage Regulator Module (VRM)
- Multi-phase regulators
- Point-of-load modules
- Smart phone POL modules
- SSD modules
- Notebook regulators
- Battery power systems
- Graphics cards
- Data networking and storage systems

## PRODUCT IDENTIFICATION

FSA 0650 -101 M T

1    2    3    4    5

- ◆ 1:Product Series:Metal Alloy Molding Power Inductor
- ◆ 2:Dimensions:
- ◆ 3: Initial inductance value: 1R0 = 1.0uH
- ◆ 4:Tolerance of Inductance:M:±20%
- ◆ 5:Packing:Tape Carrier Package

**Dimensions: [mm]****RECOMMENDED LAND PATTERNS**

Part No.	A	B	C	D	E	G TYP	H TYP	I TYP
FSA0650	7.1±0.3	6.6±0.2	5.0 Max	3.0±0.3	1.5±0.4	3.6	3.5	2.4

**Electrical Properties:**


Part No.	Inductance	DC Resistance	Saturation Current	Heating Rating Current
	L0(μH)±20%	DCR (mΩ)	Isat (A)	Irms (A)
	100 kHz, 1.0V	MAX	TYP	TYP
FSA0650-101MT	100	420	2.0	1.2

**Notes:**

1. All test data is referenced to 20 °C ambient
2. Irms(A):DC current (A) that will cause an approximate  $\Delta T$  of 40 °C(reference ambient temperature is 20°C)
3. Isat(A):DC current (A) that will cause L0 to drop approximately 30 %
4. The part temperature (ambient + temp rise) should not exceed 125 °C under worst case operating conditions. Circuit design, component placement, PWB trace size and thickness, airflow and other cooling provisions all affect the part temperature. Part temperature should be verified in the end application.
5. Absolute maximum voltage 30V

## Reliability and Test Condition

Items	Requirements	Test Methods and Remarks
Operating Temperature Range	$-40^{\circ}\text{C} \sim +125^{\circ}\text{C}$	Including self-heating temperature rise.
Solderability	90% or more of electrode area shall be coated by new solder.	Dip pads in flux and dip in solder pot (96.5Sn/3.0Ag/0.5Cu) at $245^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for $(5 \pm 1)$ seconds.
Resistance to Soldering Heat	No visible mechanical damage. Inductance change: Within $\pm 10\%$	Dip pads in flux and dip in solder pot (96.5Sn/3.0Ag/0.5Cu) at $260^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for $(10 \pm 1)$ seconds.
Low temperature	No visible mechanical damage. Inductance change: Within $\pm 10\%$	Temperature $-40 \pm 2^{\circ}\text{C}$ for total 1000hr.
High temperature	No visible mechanical damage. Inductance change: Within $\pm 10\%$	Temperature $125 \pm 2^{\circ}\text{C}$ for total 1000hr.
Static Humidity	No visible mechanical damage. Inductance change: Within $\pm 10\%$	Inductors shall be subjected to $(93 \pm 3)\%$ RH . at $40^{\circ}\text{C} \pm 2^{\circ}\text{C}$ for $96 \text{ h} \pm 2 \text{ h}$ . Inductors are to be tested after having air dried for 2 hours.

Thermal shock	No visible mechanical damage. Inductance change: Within $\pm 10\%$	The test sample shall be placed at $-40 \pm 3^\circ\text{C}/30 \pm 3\text{min}$ and $85 \pm 2^\circ\text{C}/30 \pm 3\text{min}$ different temperature conversion time is 2~3 minutes. The temperature cycle shall be repeated 5 cycles.
Mechanical Shock	 <p>No evidence of terminal peel off and wire broken.</p>	Inductors shall be Soldering on the PCB with 1.0mm thick and fixed them in a 15cm big., 1.4Kg weight cube with brass base, let it nature fallen form 0.5m height (X,Y,Z three axes)
Adhesion of terminal electrode	Strong bond between the pad and the core, without come off PC board.	Inductors shall be subjected to $260 \pm 5^\circ\text{C}$ for $20 \pm 5\text{s}$ Soldering in the base whit 0.3mm solder. And then aplomb electrode way plus tax 10 N for $10 \pm 1\text{s}$ seconds.



## ● Recommended Soldering Technologies

### (1) Re-flowing Profile

Preheat condition: 150 ~200°C/60~180sec.

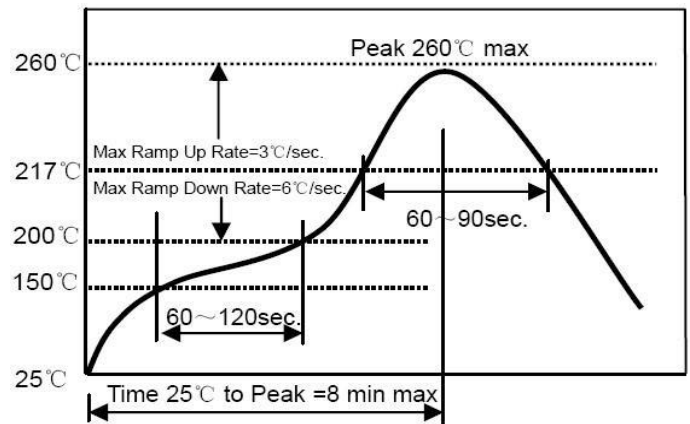
Allowed time above 217°C: 80~120sec.

Max temp: 260°C

Max time at max temp: 10 sec.

Solder paste: Sn/3.0Ag/0.5Cu

Allowed Reflow time: 2x max



### (2) Iron Soldering Profile

Iron soldering power: Max.

30W Pre-heating: 150°C/60sec.

Soldering time: 3sec. Max.

Solder paste: Sn/3.0Ag/0.5Cu

Max.1 times for iron soldering

