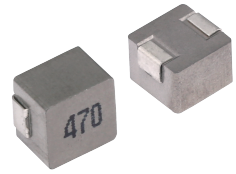


FEATURES

- 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

FSA0840 -1R0 M T

1 2 3 4 5

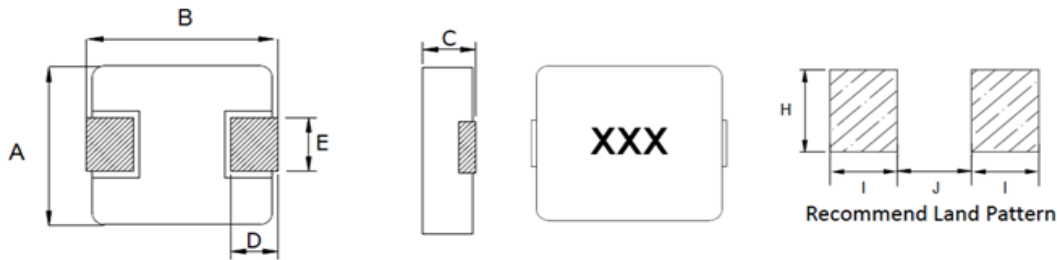
1:Product Series:Metal Alloy Molding Power Inductor

2:Dimensions:

3: Initial inductance value: 1R0 = 1.0uH

4:Tolerance of Inductance:M:±20%

5:Packing:Tape Carrier Package

Dimensions: [mm]

Series	A	B	C	D	E	I Typ.	J Typ.	H Typ.
FSA0840	8.8±0.4	8.2±0.3	3.8±0.2	1.4±0.3	5.0±0.3	2.75	4.0	5.5

Electrical Properties:

Part Number	Inductance	DC Resistance	Saturation Current		Heat Rating Current	
	@100KHz, 1V	Max.	Max.	Typ.	Max.	Typ.
Units	μH	mΩ	A		A	
Symbol	L	DCR	Isat		Irms	
FSA0840-R15MT	0.15±20%	1.65	65.0	70.0	33.0	39.0
FSA0840-R22MT	0.22±20%	1.8	55.0	60.0	30.0	36.0
FSA0840-R33MT	0.33±20%	2.4	40.0	45.0	25.0	30.0
FSA0840-R47MT	0.47±20%	2.8	36.0	42.0	25.0	28.0
FSA0840-R56MT	0.56±20%	3.2	23.0	26.0	22.0	24.0
FSA0840-R68MT	0.68±20%	3.8	22.0	24.0	21.0	23.0
FSA0840-R82MT	0.82±20%	4.4	19.0	21.0	19.0	21.0
FSA0840-1R0MT	1.0±20%	4.62	17.0	19.0	17.0	19.0
FSA0840-1R5MT	1.5±20%	7.6	15.0	17.0	15.0	17.0
FSA0840-1R8MT	1.8±20%	11	13.5	15.0	12.5	15.0
FSA0840-2R2MT	2.2±20%	11.4	12.0	14.0	12.0	14.0
FSA0840-3R3MT	3.3±20%	15	11.0	12.5	10.0	12.0
FSA0840-4R7MT	4.7±20%	26.5	10.5	11.5	8.50	9.50
FSA0840-5R6MT	5.6±20%	30	10.0	11.0	8.00	9.00
FSA0840-6R8MT	6.8±20%	36.8	8.00	9.00	7.00	8.00
FSA0840-8R2MT	8.2±20%	46	7.70	8.70	6.00	7.00
FSA0840-100MT	10±20%	59	7.00	8.00	5.50	6.50
FSA0840-150MT	15±20%	71	4.90	5.50	4.80	5.40
FSA0840-220MT	22±20%	113	4.50	5.00	4.20	4.80
FSA0840-330MT	33±20%	156	3.30	3.50	3.00	3.50
FSA0840-470MT	47±20%	225	2.90	3.10	2.50	2.90

Notes

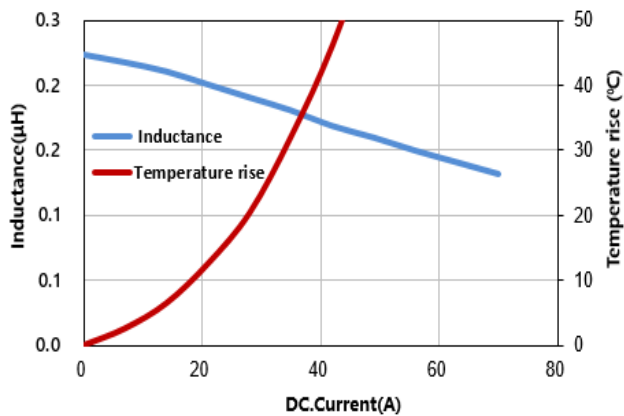
- ※1: All test data is referenced to 20°C ambient;
- ※2: Rated current: Isat or Irms, whichever is smaller;
- ※3: Isat(Typ): DC current at which the inductance drops approximate 30% from its value without current;
- ※4: Isat(Max): DC current at which the inductance drops approximate 20% from its value without current;
- ※5: Irms(Typ): DC current that causes the temperature rise ($\Delta T = 40^{\circ}\text{C}$) from 20°C ambient.
- ※6: Irms(Max): DC current that causes the temperature rise ($\Delta T = 20^{\circ}\text{C}$) from 20°C ambient.
- ※7: Absolute maximum voltage 30VDC

Reliability and Test Condition

Mechanical Reliability		
Item	Specification and Requirement	Test Method
Solderability	The surface of terminal immersed shall be minimum of 95% covered with a new coating of solder	Solder heat proof: 1. Preheating: 160 ± 10 °C 2. Retention time: 245 ± 5 °C for 2 ± 0.5 seconds
Vibration	Inductance change: Within $\pm 10\%$ Without mechanical damage such as break	1. Vibration frequency: (10 Hz to 55 Hz to 10Hz) in 60 seconds as a period 2. Vibration time: Period cycled for 2 hours in each of 3 mutual perpendicular directions. 3. Amplitude: 1.5 mm max.
Shock	Inductance change: Within $\pm 10\%$ Without mechanical damage such as break	1. Peak value: 100 G 2. Duration of pulse: 11ms 3. 3 times in each positive and negative direction of 3 mutual perpendicular directions
Endurance Reliability		
Item	Specification and Requirement	Test Method
Thermal Shock	Inductance change: Within $\pm 10\%$ Without distinct damage in appearance	1. Repeat 100 cycles as follow: (-55 ± 2 °C; 30 ± 3 min) →(Room temp., 5 min) → ($+125 \pm 2$ °C, 30 ± 3 min) → (Room temp., 5 min) 2. Recovery: $48 + 4 / -0$ hours of recovery under the standard condition after the test.
High Temperature Resistance	Inductance change: Within $\pm 10\%$ Without distinct damage in appearance	1. Environment condition: 85 ± 2 °C Applied Current: Rated current 2. Duration: $1000 + 4 / -0$ hours
Humidity Resistance	Inductance change: Within $\pm 10\%$ Without distinct damage in appearance	1. Environment condition: 60 ± 2 °C Humidity: 90–95% Applied Current: Rated current 2. Duration: $1000 + 4 / -0$ hours
Low Temperature Store	Inductance change: Within $\pm 10\%$ Without distinct damage in appearance	Store temperature: -55 ± 2 °C, $1000 + 4 / -0$ hours
High Temperature Store	Inductance change: Within $\pm 10\%$ Without distinct damage in appearance	Store temperature: $+125 \pm 2$ °C, $1000 + 4 / -0$ hours

TYPICAL ELECTRICAL CHARACTERISTICS

FSA0840-R22MT



Recommended Soldering Technologies

(1) Re-flowing Profile

Preheat condition: 150 ~200°C/60~120sec.

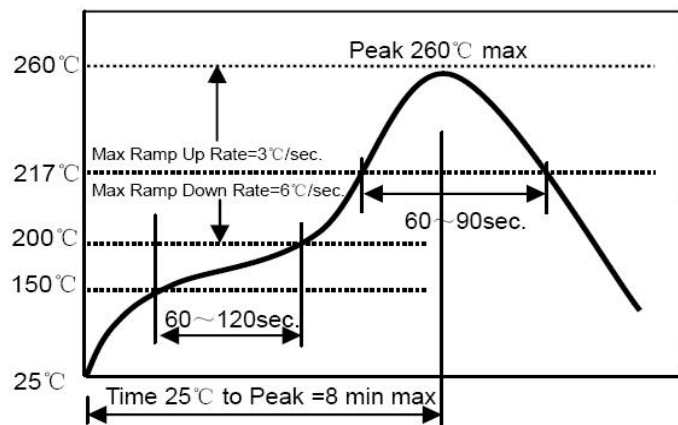
Allowed time above 217°C: 60~90sec.

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

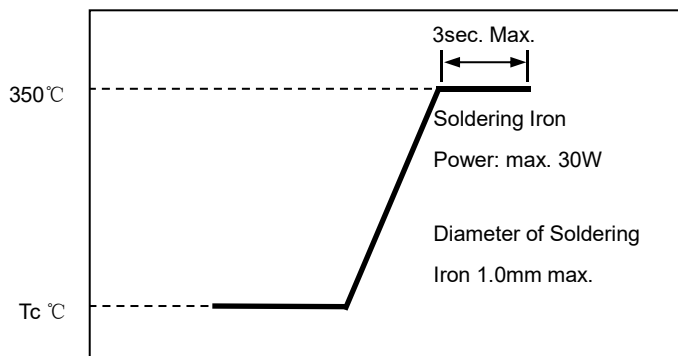
Pre-heating: 150°C/60sec.

Soldering Tip temperature: 350°C Max.

Soldering time: 3sec. Max.

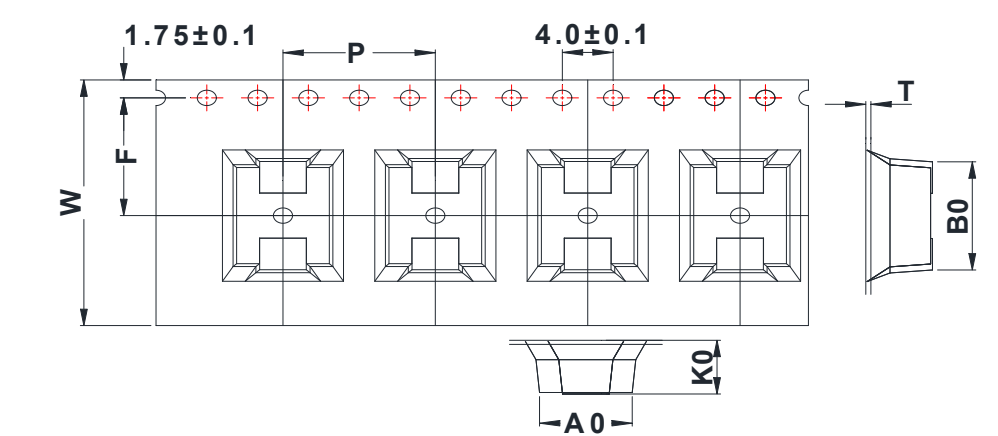
Solder paste: Sn/3.0Ag/0.5Cu

Max. 1 times for iron soldering



Packaging Information

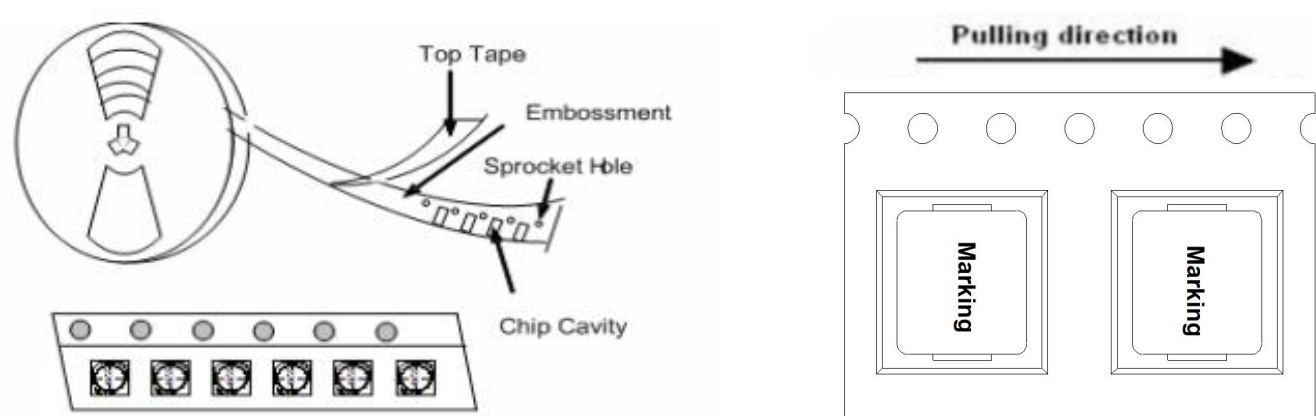
(1) Tape Packaging Dimensions (Unit: mm)

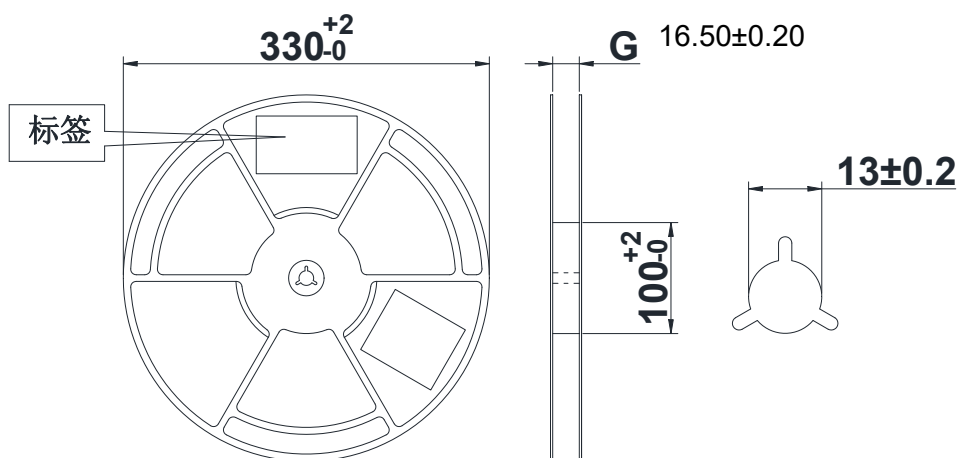


Tape dimensions (mm)

Type							
	W	P	P0	A0	B0	K0	T
FSA0840	16.00±0.30	12.0±0.10	4.0±0.10	8.3±0.1	8.5±0.1	4.20±0.1	0.35±0.05

Taping Drawings (UNIT:mm)



(2) Reel Dimensions (Unit: mm)**(3) Packaging Quantity**

Type	Standard Quantity		
	Reel	Inner box	Carton box
FSA0840	1000 pcs / reel	3Reel / box 3000 pcs	3 Middle boxes, 9000 pcs

(4) Peel force of top cover tape

The peel speed shall be about 300mm/minute

The peel force of top cover tape shall be between 0.1 to 1.3 N

