### 鴻達電能科技股份有限公司

### **High Current, Power Inductors**

### MPC3020-XXX-M Power Choke



#### Description

- · Halogen Free
- 125°C maximum total temperature operation
- 3.7x3.2x 2.0mm maximum surface mount package
- · Powder iron core material
- · Magnetically shielded, low EMI
- High current carrying capacity, Low core losses
- Inductance range from 0.12µH to 10µH
- Current range from 1.5 to 17 Amps
- Frequency range up to 5MHz
- RoHS compliant







Page: 22 / 90

#### 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

#### **Environmental Data**

- Storage temperature range: -55°C to +125 °C
- Operating temperature range: -55°C to +125°C

(ambient plus self-temperature rise)

Solder reflow temperature: J-STD-020D

compliant

Description												
MPC3020-1R5-M					1.5µH				•	±20 %		
	Model					Inductance Value					Inductance Tolerance	
	Global Part Number											
M	Р	С			3	0	2	0	1	R	5	M
	Product Series				Dimensions				Inductance			Value Tol.

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	Inductance	DC Resistance	Heating Rating Current	Saturation Current	
Part No.	L0 (µH)	DCR (mΩ)	Idc (A)	Isat (A)	
	±20 %, 1MHz, 1V	MAX.	TYP.	TYP.	
MPC3020-R22M	0.22	10.0	10.0	16	
MPC3020-R33M	0.33	18.5	10.0	14	
MPC3020-R47M	0.47	21.5	8.0	11	
MPC3020-R68M	0.68	26.0	7.0	10	
MPC3020-1R0M	1.0	36.0	5.0	8	
MPC3020-1R5M	1.5	39.0	4.2	6	
MPC3020-2R2M	2.2	69.0	3.3	4.8	
MPC3020-3R3M	3.3	95.0	1.6	3	
MPC3020-4R7M	4.7	158.0	2.4	3.3	

#### Notes

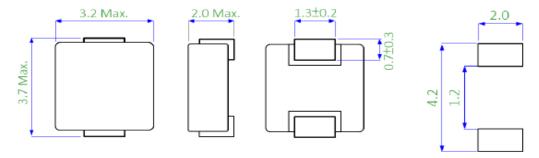
- 1. All test data is referenced to 25 °C ambient
- 2. Operating temperature range 55 °C to + 125 °C
- 3. Idc(A):DC current (A) that will cause an approximate ΔT of 40 °C(reference ambient temperature is 25 °C)
- 4. Isat(A):DC current (A) that will cause L0 to dropapproximately30 %
- 5. The part temperature (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.

Page: 23 / 90

## 鴻達電能科技股份有限公司

Page: 24 / 90

#### •Dimensions-mm



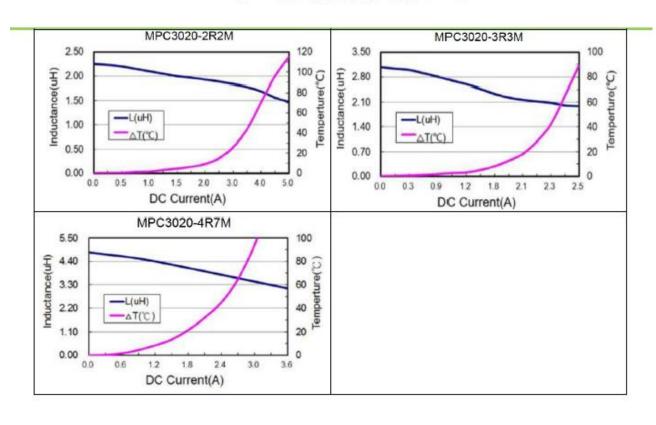
Recommend Land Pattern Dimensions

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Page: 25 / 90

Performance Graphs				
Test Instruments	Test Condition			
Agilent E4980A Precision LCR Meter E4980A With HP42841A Current Source	Temperature: 26 ± 3 °C Humidity: < 70% RH Frequency: 1MHz, 1.0V			
0.25 0.25 0.10 0.05 0.00	0.36 0.29 0.22 0.14 0.07 0.00 0.00 0.00 0.00 0.00 0.00 0.0			
0.55 0.44 0.33 0.22 0.11 0.00 0.0 20 40 60 80 10.0 12.0  DC Current(A)	MPC3020-R68M  0.80  (H) 0.64 0.48 0.32 0.16 0.00 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0			
1.20 100 80 (2) entre of the first of the fi	1.80 1.80 1.08 1.08 0.72 0.36 0.00 0.0 1.0 2.0 3.0 4.0 5.0 5.5 6.5  DC Current(A)			

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Page: 26 / 90