鴻達電能科技股份有限公司

High Current, Power Inductors

MPC3012-XXX-M Power Choke



Description

- Halogen Free
- 125°C maximum total temperature operation
- 3.7x3.2x 1.2mm 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







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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												
MPC3012-1R5-M				1.5µH					±20 %			
Model				Inductance Value					Inductance Tolerance			
Global Part Number												
М	Р	С			3	0	1	2	1	R	5	M
Product Series				Dimensions				Ind	Inductance		Value Tol.	

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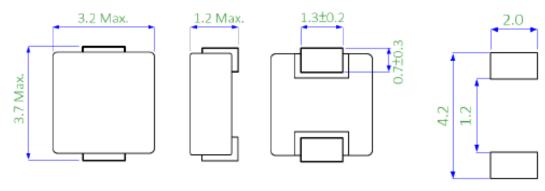
	Inductance	DC Resistance	Heating Rating Current	Saturation Current	
Part No.	L0 (µH)	DCR (mΩ)	ldc (A)	Isat (A)	
	±20 %, 1MHz, 1V	TYP. / MAX.	TYP.	TYP.	
MPC3012-R12M	0.12	4.3 / 5.5	10	17	
MPC3012-R33M	0.33	15.8 / 18.0	7.2	9.6	
MPC3012-R47M	0.47	22.0 / 25.0	6.2	8.2	
MPC3012-1R0M	1.00	39.2 / 45.0	4	5.4	
MPC3012-2R2M	2.20	88.5 / 102	2.5	4	
MPC3012-3R3M	3.30	136 / 155	1.8	2.4	
MPC3012-100M	10.00	313 / 360	1	1.5	

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 %
- 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.

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Dimensions-mm



Recommend Land Pattern Dimensions

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	Performance Graphs						
	Test Instruments	Test Condition					
	Animal Edges A Province LOD Mater	Temperature: 26 ± 3 ℃					
	Agilent E4980A Precision LCR Meter E4980A With HP42841A Current Source	Humidity: < 70% RH					
	E4900A With HP4204TA Culterit Source	Frequency: 1MHz, 1.0V					

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Performance Graphs Test Instruments Test Condition Temperature: 26 ± 3 °C Agilent E4980A Precision LCR Meter Humidity: < 70% RH E4980A With HP42841A Current Source Frequency: 1MHz, 1.0V MPC3012-R12M MPC3012-R33M 100 0.14 0.40 100 Inductance(uH) 0.11 Temperture(°C) Inductance(uH) 0.32 80 Temperture(°C) 0.08 60 0.24 60 L(uH) L(uH) 0.06 40 0.16 40 ΔT(°C) 0.03 0.08 20 20 0.00 0.00 0.0 1.5 10.5 12.0 6.0 4.0 12.0 16.0 20.0 DC Current(A) DC Current(A) MPC3012-1R0M MPC3012-R47M 1.20 100 100 0.55 Inductance(uH) 0.96 0.44 Inductance(uH) 80 Temperture(0.33 60 0.72 -L(uH) L(uH) 0.48 40 0.22 40 ΔT(°C) ΔT(°C) 0.11 20 0.24 20 0.00 0.00 0.0 1.5 4.5 6.0 7.5 9.0 10.5 0.0 2.7 3.6 DC Current(A) DC Current(A) MPC3012-2R2M MPC3012-3R3M 2.50 100 3.80 100 80 60 40 20 Temperture(°C) Inductance(uH) 2.00 Inductance(uH) 3.04 80 Temperture(°C) 1.50 2.28 L(uH) -L(uH) 1.00 1.52 ΔT(°C) 0.50 20 20 0.76 0.00 0.0 2.4 3.6 3.9 0.0 1.2 1.6 2.0 2.4 2.6 DC Current(A) DC Current(A)

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