SMD Inductors

NOT FOR NEW DESIGN

YAGEO

Large-Current Power Inductors MPC

Overview

The KEMET MPC metal composite inductors are designed for use in power supplies with high ripple current. These inductors offer a superior saturation current when compared to technologies based on ferrite cores. Their low height makes them ideal in applications with thin profile requirements.

Also, the flat wire used in the design of the MPC enables high ripple current carrying capabilities.

Applications

- · Switching DC-DC power supplies
- · Notebook computers
- Tablets
- · Embedded computer systems
- HDTVs
- · DVD and BluRay players



Part Number System

MPC	0740	L	R42C
Series	Size Code	Inductor	Inductance Code µH
MPC	0730 0740 0750 1040 1055 1250		R = decimal point Examples: R42C = 0.42 μH 1R0C = 1.0 μH

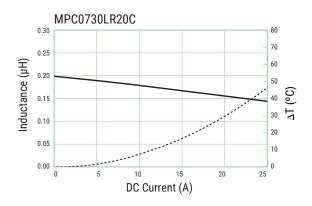


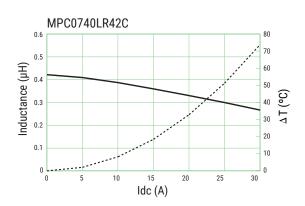
Table 1 - Ratings & Part Number Reference

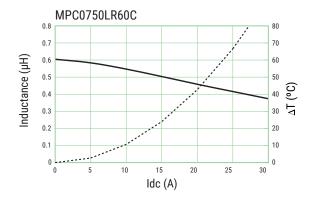
Part Number	Inductance (µH)	Inductance	DC Resistance	Rated Current (A)		
Part Number	at 100 kHz	Tolerance	(mΩ) ±10%	Irms ¹ (Ref.)	Isat² (Ref.)	
MPC0730LR20C	0.20	±25%	1.20	23.0	17.5	
MPC0740LR42C	0.42	±20%	1.55	22.0	20.0	
MPC0750LR60C	0.60	±20%	2.30	17.0	19.0	
MPC0750LR68C	0.68	±20%	2.20	18.0	16.0	
MPC1040LR36C	0.36	±20%	1.05	25.5	30.0	
MPC1040LR45C	0.45	±20%	1.10	25.0	27.0	
MPC1040LR56C	0.56	±20%	1.30	23.0	25.0	
MPC1040LR88C	0.88	±20%	2.30	17.0	24.0	
MPC1055LR36C	0.36	±20%	0.75	32.0	35.0	
MPC1055L1R0C	1.00	±20%	2.30	18.5	21.0	
MPC1250LR36C	0.36	±20%	0.65	38.0	40.0	
MPC1250LR50C	0.50	±20%	0.80	35.0	40.0	

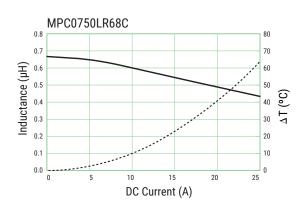
¹ T = 40 K rise at rated current.

DC-Superposed Characteristics





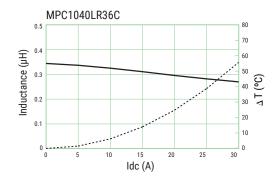


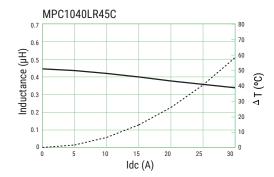


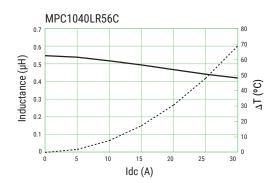
² Inductance drop 20% at rated current.

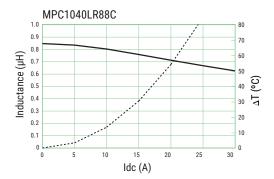


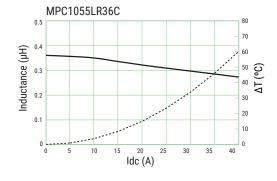
DC-Superposed Characteristics cont'd

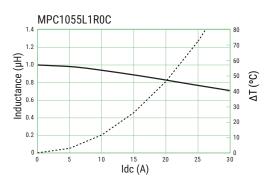


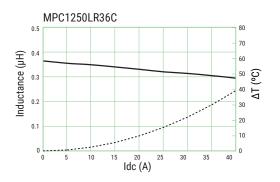


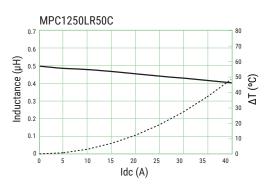






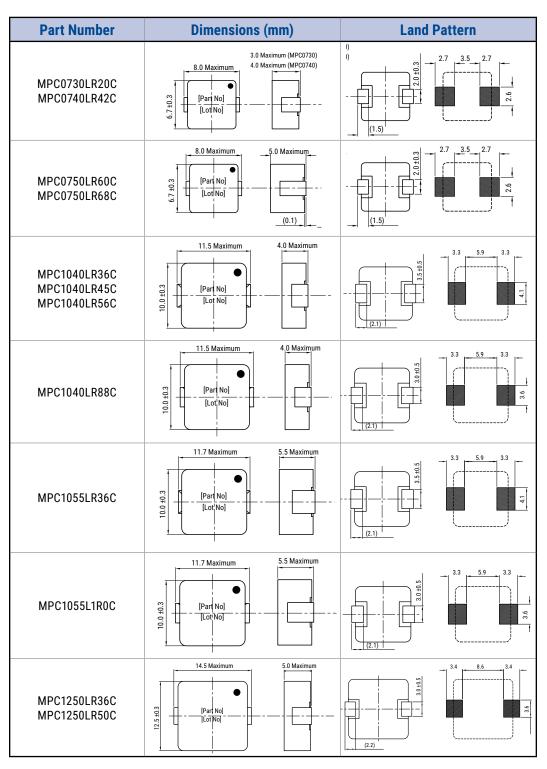








Dimensions

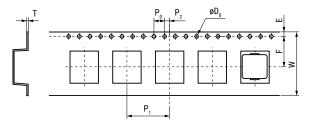


Operating temperature range: -20°C to +120°C (Include self temperature rise)



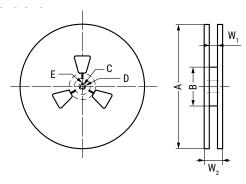
Taping Specification

Dimensions of indented square hole plastic tape



Case	Reel		Dimensions (mm)							
Size Qu	Quantity		W	F	E	P ₁	P ₂	P ₀	ØD ₀	Т
MPC0730	1,000	Tolerance	±0.2	±0.1	±0.1	±0.1	±0.1	±0.1	±0.05	±0.05
MPC0740 MPC0750		Nominal	16.0	7.5	1.75	12.0	2.0	4.0	1.55	0.4
MDC1040	11001010 500	Tolerance	±0.3	±0.1	±0.1	±0.1	±0.1	±0.1	±0.05	±0.05
MPC1040 500	Nominal	24.0	11.5	1.75	16.0	2.0	4.0	1.55	0.4	
MPC1055 500	Tolerance	±0.2	±0.1	±0.1	±0.1	±0.1	±0.1	±0.05	±0.05	
	500	Nominal	24.0	11.5	1.75	24.0	2.0	4.0	1.55	0.4
MPC1250 5	500	Tolerance	±0.4	±0.2	±0.2	±0.2	±0.2	±0.2	±0.02	±0.1
	500	Nominal	24.0	11.5	1.75	24.0	2.0	4.0	1.5	0.4

Reel Specifications



Case Size		Dimensions (mm)								
		A	В	С	D	E	r	W ₁	W ₂	
MPC0730	Tolerance	±2.0	±1.0	±0.2	±0.8	±0.5		±1.0	±1.0	
MPC0740 MPC0750	Nominal	ø330	ø80	ø13.0	ø21.0	2.0	R1.0	17.5	21.5	
I MPC1040 ⊢	Tolerance	±5.0	±5.0	±0.5	±1.0	±0.5		±2.0	±3.0	
	Nominal	ø330	ø80	ø13.5	ø21.0	2.0	R1.0	24.4	30.4	
MPC1055	Tolerance	±2.0	±1.0	±0.5	±0.8	±0.5		±2.0	±3.0	
	Nominal	ø380	ø100	ø13.0	ø21.0	2.0	R1.0	24.4	30.4	
MPC1250	Tolerance	±2.0	±5.0	±0.5	±0.8	±0.5		±2.0	±3.0	
	Nominal	ø380	ø100	ø13.0	ø21.0	2.0	R1.0	25.5	28.5	

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Handling Precautions

Inductors should be stored in normal working environments. While the inductors themselves are quite robust in other environments, solderability will be degraded by exposure to high temperatures, high humidity, corrosive atmospheres, and long term storage.

KEMET recommends that maximum storage temperature not exceed 40°C and maximum storage humidity not exceed 70% relative humidity. Atmospheres should be free of chlorine and sulfur bearing compounds. Temperature fluctuations should be minimized to avoid condensation on the parts. For optimized solderability, inductors' stock should be used promptly, preferably within six months of receipt.

Export Control

For customers in Japan

For products which are controlled items subject to the "Foreign Exchange and Foreign Trade Law" of Japan, the export license specified by the law is required for export.

For customers outside Japan

Inductors should not be used or sold for use in the development, production, stockpiling or utilization of any conventional weapons or mass-destruction weapons (nuclear, chemical, biological weapons or missiles), or any other weapons.

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Although KEMET designs and manufactures its products to the most stringent quality and safety standards, given the current state of the art, isolated component failures may still occur. Accordingly, customer applications which require a high degree of reliability or safety should employ suitable designs or other safeguards (such as installation of protective circuitry or redundancies) in order to ensure that the failure of an electrical component does not result in a risk of personal injury or property damage.

Although all product-related warnings, cautions and notes must be observed, the customer should not assume that all safety measures are indicated or that other measures may not be required.