NOT FOR NEW DESIGN Electronic Components

SMD Inductors

Large-Current Power Inductors MPLC



Overview

The KEMET MPLC metal composite inductors offer large inductance values for use in DC to DC switching power supplies. These inductors offer superior permeability when compared to technologies based on ferrite cores. The round wire design allows for higher inductance compared to other wire designs.

Applications

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





Part Number System

MPLC	0730	L	1R0
Series	Size Code	Inductor	Inductance Code µH
MPLC	0730 1040		R = decimal point Example: 1R0 = 1.0 μH

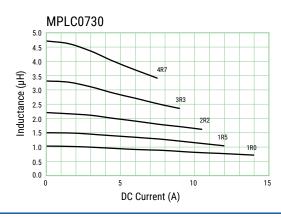


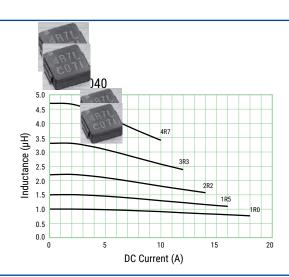
Table 1 - Ratings & Part Number Reference

Part Number	Inductance (µH)	Inductance	DC Resistance	Rated Current (A)		
Part Number	at 100 kHz	Tolerance	(mΩ) Maximum	Irms ¹ (Ref.)	Isat² (Ref.)	
MPLC0730L1R0	1.0	±20%	9.0	10.6	11.0	
MPLC0730L1R5	1.5	±20%	15.0	8.6	8.8	
MPLC0730L2R2	2.2	±20%	19.0	7.3	8.2	
MPLC0730L3R3	3.3	±20%	30.0	5.7	6.5	
MPLC0730L4R7	4.7	±20%	41.0	5.0	5.6	
MPLC1040L1R0	1.0	±20%	5.5	14.3	16.2	
MPLC1040L1R5	1.5	±20%	7.0	12.4	12.7	
MPLC1040L2R2	2.2	±20%	10.0	10.5	11.0	
MPLC1040L3R3	3.3	±20%	14.0	8.8	9.3	
MPLC1040L4R7	4.7	±20%	19.0	8.0	8.0	

¹ T = 40 K rise at rated current.

DC-Superposed Characteristics





Dimensions

Part Number	Dimensions (mm)	Land Pattern
MPLC0730	7.7 Maximum	20 + 20 + 20 +
MPLC1040	11.5 Maximum 12.5 Maximum 4.0 Maximum (2.1)	3.8

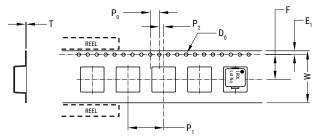
Operating temperature range: -20°C to +120°C (Include self temperature rise)

² Inductance drop 20% at rated current.



Taping Specification

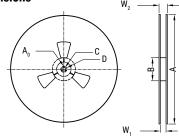
Dimensions of indented square hole plastic tape



Case Size	Reel		Dimensions (mm)							
	Quantity		W	F	E,	P ₁	P ₂	P ₀	øD ₀	Т
MPLC0730	1,000	Tolerance	±0.3	±0.1	±0.1	±0.1	±0.1	±0.1	±0.05	±0.05
		Nominal	16.0	7.5	1.75	12.0	2.0	4.0	1.55	0.4
MPLC1040	500	Tolerance	±0.3	±0.1	±0.1	±0.1	±0.1	±0.1	±0.05	±0.05
		Nominal	24.0	11.5	1.75	16.0	2.0	4.0	1.55	0.4

Reel Specifications





Case		Dimensions (mm)							
Size		A	В	C	D	A ₀	r	W ₁	W ₂
MPLC0730	Tolerance	±5.0	±5.0	±0.5	±0.8	±0.5		±1.0	±1.0
	Nominal	ø330	ø80	ø13.0	ø21.0	2.0	R1.0	17.5	21.5
MPLC1040	Tolerance	±2.0	±1.0	±0.5	±0.8	±0.5		±2.0	±3.0
	Nominal	ø330	ø80	ø13.5	ø21.0	2.0	R1.0	24.4	30.4

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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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Disclaimer

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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 indicted or that other measures may not be required.