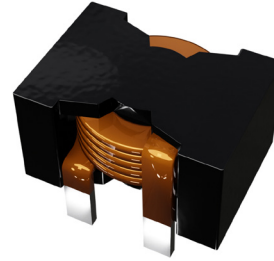


## SERIES: F2D1-2012A | DESCRIPTION: HIGH CURRENT POWER INDUCTORS

### FEATURES

- Ferrite core
- Moisture sensitivity: Level (MSL) 1
- High inductance, high current, low magnetic loss, low ESR, small parasitic capacitance
- Operating temperature -40°C to 125°C



MODEL	Inductance (Lo)	Tolerance	DC Resistance (DCR)	Saturation Current (Isat)	Temperature Rise Current (Irms)
	typ [μH]	typ [± %]	max [mΩ]	typ [A]	typ [A]
F2D1-2012A-R47MC	0.47	20	0.48	75.0	45.0
F2D1-2012A-R82MC	0.82	20	0.48	55.0	45.0
F2D1-2012A-1R0MC	1.00	20	1.38	62.0	35.0
F2D1-2012A-1R5MC	1.50	20	1.38	60.0	35.0
F2D1-2012A-2R2MC	2.20	20	2.13	50.0	28.0
F2D1-2012A-3R3MC	3.30	20	2.13	35.0	28.0
F2D1-2012A-4R7MC	4.70	20	2.13	24.0	28.0
F2D1-2012A-6R8MC	6.80	20	2.13	18.0	28.0
F2D1-2012A-8R2MC	8.20	20	2.13	13.0	28.0
F2D1-2012A-100MC	10.0	20	5.76	13.0	16.0
F2D1-2012A-150MC	15.0	20	5.76	10.0	16.0
F2D1-2012A-220MC	22.0	20	8.16	10.0	14.0
F2D1-2012A-330MC	33.0	20	8.16	7.00	14.0

- Notes:
1. Referenced ambient temperature 25°C
  2. Test Condition: 100 kHz, 0.1 Vrms
  3. Saturation Current - Isat: The actual value of DC current (A) when the Inductance decrease 30% of its initial value.  
Temperature Rise Current - Irms: The actual value of DC current (A) when the Temperature rise is  $\Delta T$  40°C ( $T_a = 25^\circ\text{C}$ )
  4. Operating temperature range includes self-temperature rise.
  5. Important Reminder: The product temperature can be influenced by various factors such as circuit design, component placement, PCB size and thickness, and the cooling system. Please ensure to verify the product temperature in its final application.

### PART NUMBER KEY

**F2D1 - 2021A - XXX XX**

Type / Product Series

F2D1-2021A = High Current Power Inductors

C = Coating

Inductance \*

1R0 = 1.0 μH

Inductance Tolerance

M = ±20%

\* Note: Inductance expressed by three figures. The unit is micro henry (μH). The first and second figures are significant digits, the third figure expresses the number of zeros which follow the two figures. If there is a decimal point, it is expressed by the capital letter "R" (3R8 = 3.8 μH). In that case, all figures are significant digits.

SAFETY AND COMPLIANCE

Parameter	Compliant
RoHS	Compliance with ROHS, Reach compliant and Halogen Free

ENVIROMENTAL

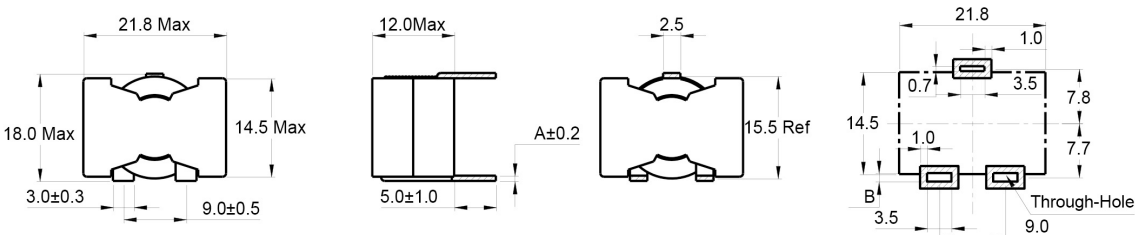
Parameter	Conditions	Min	Typ	Max	Units
Operating temperature	Including coils self-temeprature rise	-40		125	°C
Storage temperature		-40		125	°C

MECHANICAL

Parameter	Conditions	Min	Typ	Max	Units
Core material	Ferrite				
Dimensions	21.8 x 18.0 x 14.5				mm

MECHANICAL DRAWING

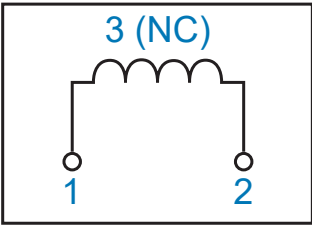
Units: mm



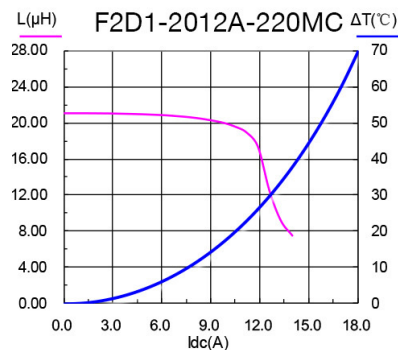
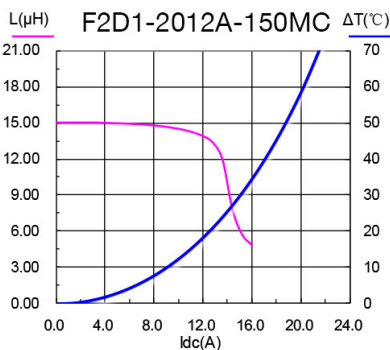
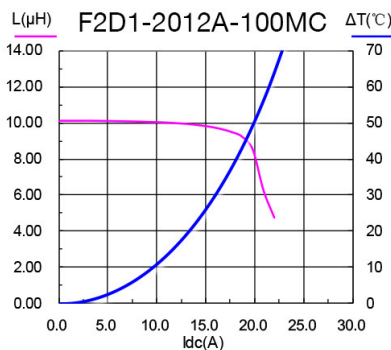
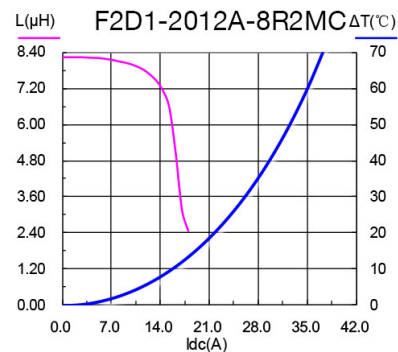
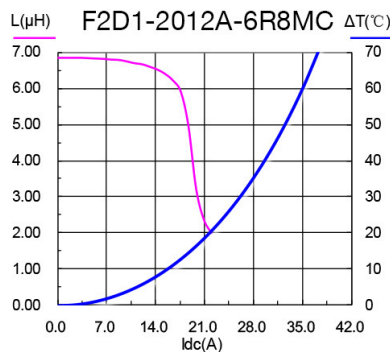
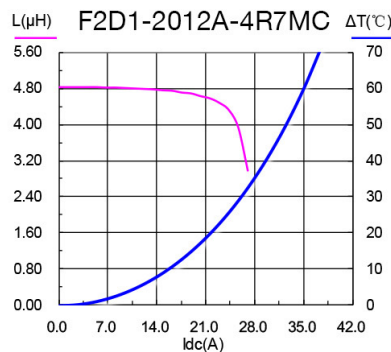
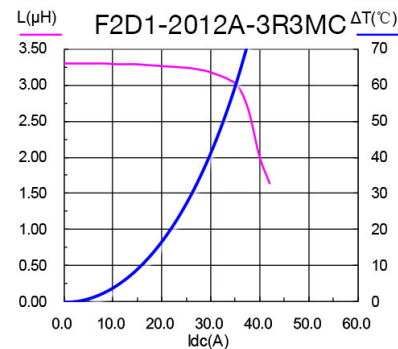
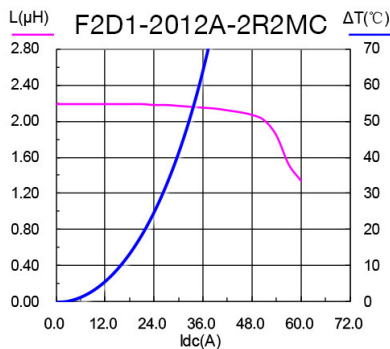
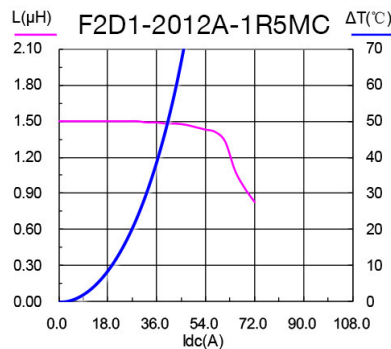
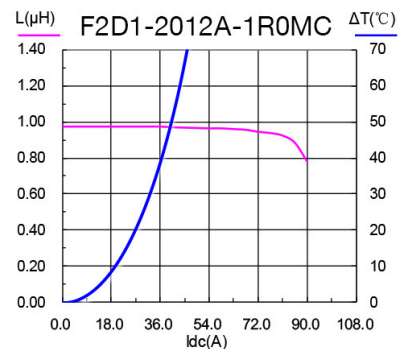
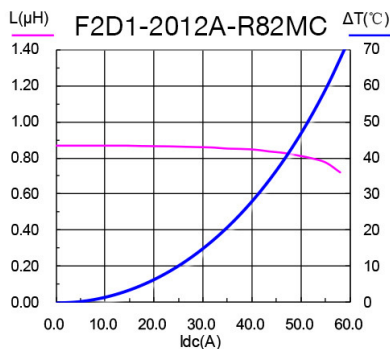
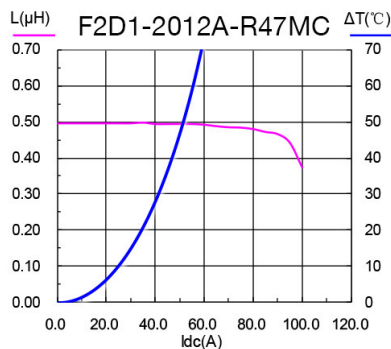
MECHANICAL DIMENSIONS (mm)

Part number	R47-R82	1R0-1R5	2R2-8R2	100-150	220-330
Dimension A	1.40	0.90	0.70	0.40	0.35
Dimension B	1.90	1.40	1.20	0.90	0.85

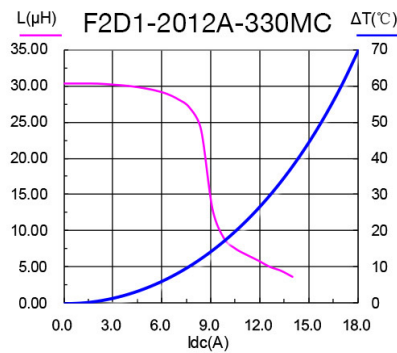
ELECTRICAL DIAGRAM



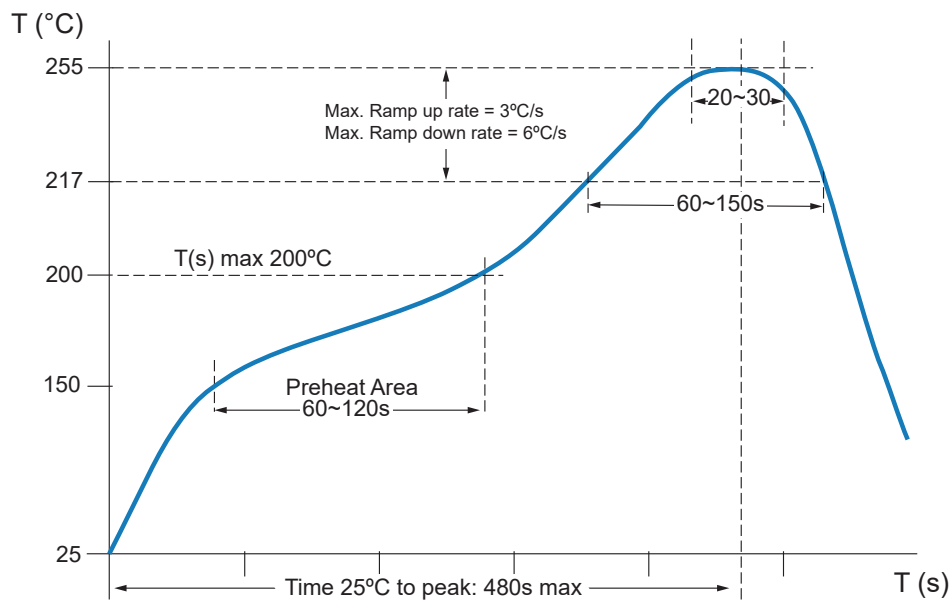
## PERFORMANCE CURVES



PERFORMANCE CURVES (CONTINUED)



REFLOW SOLDERING TEMPERATURE CURVE

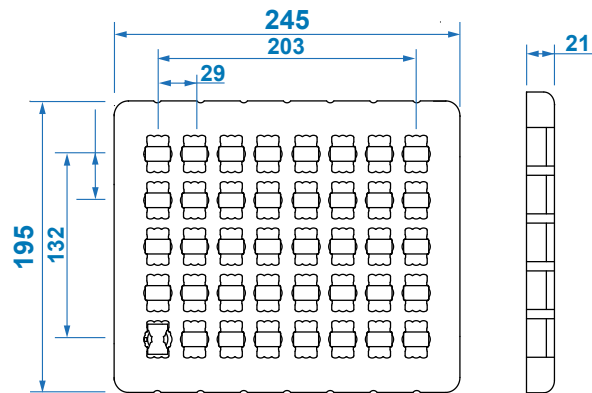


CLASSIFICATION OF PEAK PACKAGE BODY TEMPERATURE

	Package Thickness	Package Volume		
		< 350 mm <sup>3</sup>	350 ~ 2000 mm <sup>3</sup>	> 2000 mm <sup>3</sup>
PB-Free Assembly	< 1.6 mm	260 °C	260 °C	260 °C
	1.6 ~ 2.5 mm	260 °C	250 °C	245 °C
	≥ 2.5 mm	250 °C	245 °C	245 °C

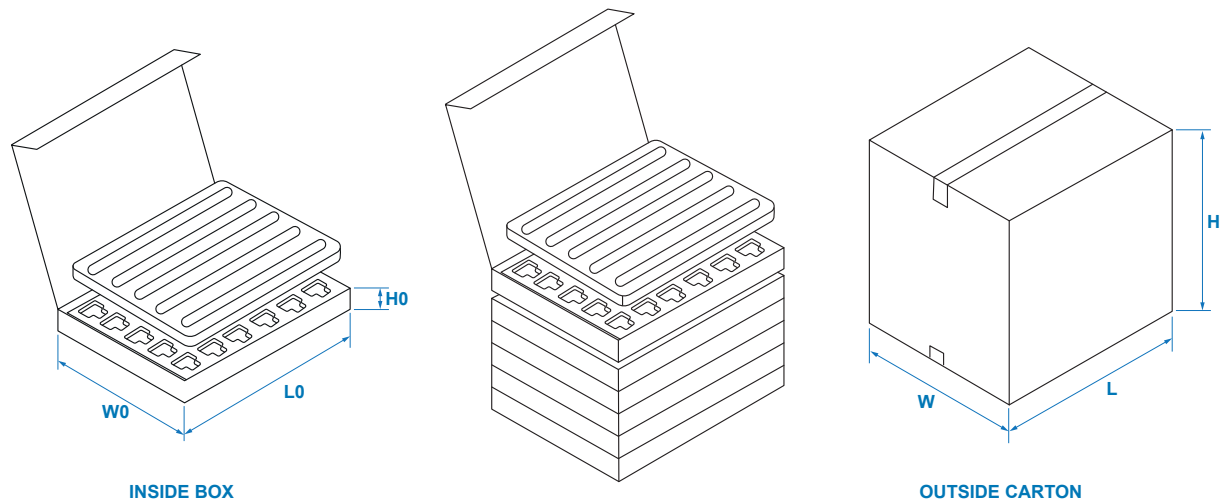
QUANTITY PER TRAY & PACKING INFORMATION

Units: mm



PACKAGING DIMENSIONS (mm)

Product Series	L0	W0	H0	L	W	H
F2D1-2012A	265	205	30	275	232	261



QUANTITY PER PACKAGE

Product Series	Pcs per Tray	Qty of Inner Carton	Pcs per Outside Carton
F2D1-2012A	40	8	320

REVISION HISTORY

Rev.	Description	Date
1	initial release	December/01/2024

**NUCLEAR AND MEDICAL APPLICATIONS** - Products are not designed or intended for use as critical components in life support systems, equipment used in hazardous environments, or nuclear control systems.

**TECHNICAL REVISIONS** - The appearance of products, including safety agency certifications pictured on labels, may change depending on the date manufactured. Specifications are subject to change without notice.



**Bel Fuse Inc.**  
300 Executive Drive, Suite 300  
West Orange, NJ 07052  
United States  
© 2024 Bel Fuse Inc.

Toll Free 866-239-5777  
Tel 516-239-5777 | Fax 516-239-7208  
sales@signaltransformer.com  
techhelp@signaltransformer.com  
[belfuse.com](http://belfuse.com)