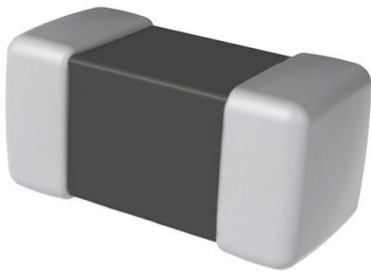


# L1007C220KDWIT Datasheet

[www.digi-electronics.com](http://www.digi-electronics.com)



<https://www.DiGi-Electronics.com>

DiGi Electronics Part Number	L1007C220KDWIT-DG
Manufacturer	<a href="#">KEMET</a>
Manufacturer Product Number	L1007C220KDWIT
Description	INDUCTOR, WW SMD
Detailed Description	22 $\mu$ H Unshielded Drum Core, Wirewound Inductor 460 mA 770mOhm 1007 (2518 Metric)



Tel: +00 852-30501935

RFQ Email: [Info@DiGi-Electronics.com](mailto:Info@DiGi-Electronics.com)

DiGi is a global authorized distributor of electronic components.

## Purchase and inquiry

Manufacturer Product Number:

L1007C220KDWIT

Series:

L-DWI

Type:

Drum Core, Wirewound

Inductance:

22  $\mu$ H

Current Rating (Amps):

460 mA

Shielding:

Unshielded

Q @ Freq:

-

Ratings:

-

Inductance Frequency - Test:

2.52 MHz

Mounting Type:

Surface Mount

Supplier Device Package:

1007

Height - Seated (Max):

0.079" (2.00mm)

Manufacturer:

KEMET

Product Status:

Obsolete

Material - Core:

Ferrite

Tolerance:

$\pm$ 10%

Current - Saturation (Isat):

320mA

DC Resistance (DCR):

770mOhm

Frequency - Self Resonant:

19MHz

Operating Temperature:

-40°C ~ 105°C

Features:

-

Package / Case:

1007 (2518 Metric)

Size / Dimension:

0.098" L x 0.071" W (2.50mm x 1.80mm)

## Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Unaffected

HTSUS:

8504.50.8000

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99

**OBSOLETE**

Chip Inductors

**High Current Wire Wound Chip Power Inductor L-DWI****KEMET**  
a YAGEO company**Overview**

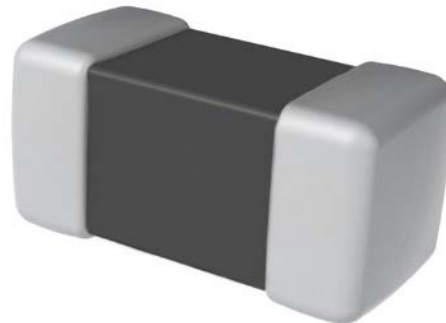
KEMET L-DWI ferrite-based Wire Wound Chip Power Inductors are ideal for use in DC to DC switching power supplies. The small size of this chip inductor and its dimension without directional influence on mountability and characteristics makes it suitable for mobile equipment that requires tight space both in dimension and in height.

**Applications**

- Switching DC-DC power supplies
- Wearables
- Smartphone
- Tablet device
- Digital still camera
- HDD

**Benefits**

- High current
- Low DCR
- Wide inductance value from 1 – 680  $\mu$ H
- Rated current  $I_{sat}$  range from 0.065 – 2 A
- Rated current  $I_{rms}$  range from 0.06 – 1.44 A
- Operating temperature range from  $-40^{\circ}\text{C}$  to  $+105^{\circ}\text{C}$
- Low profile 1.45 – 2.7 mm maximum

**Part Number System**

L	0805	C	1R0	M	DWI	T
Inductor	EIA Case Size (L" x W")	Specification	Inductance Value ( $\mu$ H)	Inductance Tolerance	Series	Packaging
	0805 (2012 in mm) 0806 (2016 in mm) 1007 (2518 in mm) 1210 (3225 in mm)	C = Commercial R = Low DCR	R = decimal point  Examples: 1R0 = 1.0 $\mu$ H  The first two digits represent the inductance value. The third digit indicates the number of zeros to be added.  Examples: 100 = 10 $\mu$ H 101 = 100 $\mu$ H	K = $\pm 10\%$ M = $\pm 20\%$	DWI = High current wire wound chip type	T = Tape & Reel

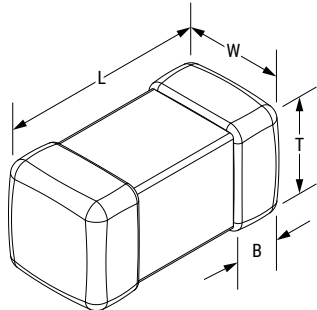
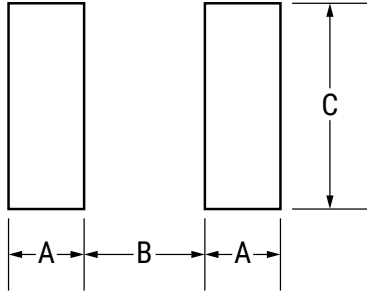
**Built Into Tomorrow**

**OBsolete**

Chip Inductors

High Current Wire Wound Chip Power Inductor L-DWI

**KEMET**  
a YAGEO company**Dimensions – Millimeters (Inches)**

Dimensions - Millimeters (Inches)						Land Pattern - Millimeters		
								
EIA Size Code	Metric Size Code	L Length	W Width	T Thickness	B Bandwidth	A	B	C
0805	2012	2.00 (0.079) ±0.20 (0.008)	1.25 (0.049) ±0.20 (0.008)	1.25 (0.049) ±0.20 (0.008)	0.50 (0.020) ±0.2 (0.008)	0.6	1.0	1.45
0806	2016	2.00 (0.079) ±0.20 (0.008)	1.60 (0.063) ±0.20 (0.008)	1.60 (0.063) ±0.20 (0.008)	0.50 (0.020) ±0.2 (0.008)	0.6	1.0	1.8
1007	2518	2.50 (0.098) ±0.20 (0.008)	1.80 (0.071) ±0.20 (0.008)	1.80 (0.071) ±0.20 (0.008)	0.50 (0.020) ±0.20 (0.008)	0.6	1.5	2.0
1210	3225	3.20 (0.126) ±0.20 (0.008)	2.50 (0.098) ±0.20 (0.008)	2.50 (0.098) ±0.20 (0.008)	0.60 (0.024) ±0.30 (0.012)	0.85	1.7	2.7

**Performance Characteristics**

Item	Performance Characteristics
Operating Temperature Range	-40°C to +105°C
Rated Inductance Range	1 – 680 µH
Inductance Tolerance	±10% and ±20%
Rated Current Isat Range	0.065 – 2 A
Rated Current Irms Range	0.06 – 1.44 A
Rated DC Resistance Range Typical	0.055 – 28 Ω
Rated DC Resistance Range Maximum	0.0715 – 36.4 Ω

**OBSOLETE**

Chip Inductors

High Current Wire Wound Chip Power Inductor L-DWI

**KEMET**  
a YAGEO company

## Environmental Compliance

All KEMET Chip Inductors are RoHS and REACH Compliant.



### Table 1 – Ratings & Part Number Reference

Part Number	Inductance (µH)	Inductance Tolerance	DC Resistance (Ω) Typical	DC Resistance (Ω) Maximum	Rated Current I <sub>rms</sub> (A) <sup>1</sup>	Rated Current I <sub>sat</sub> (A) <sup>2</sup>	Self-Resonance Frequency (MHz) Minimum	Inductance Measuring Frequency (MHz)
L0805C1R0MDWIT	1.0	±20%	0.19	0.247	0.84	0.7	100	7.96
L0805C2R2MDWIT	2.2	±20%	0.33	0.429	0.64	0.53	70	7.96
L0805C4R7MDWIT	4.7	±20%	0.5	0.65	0.52	0.36	45	7.96
L0805C100MDWIT	10	±20%	1.2	1.56	0.34	0.24	40	2.52
L0805C220KDWIT	22	±10%	3.7	4.81	0.19	0.17	16	2.52
L0805C220MDWIT	22	±20%	3.7	4.81	0.19	0.17	16	2.52
L0805C470MDWIT	47	±20%	5.8	7.54	0.15	0.12	11	2.52
L0806C1R0MDWIT	1.0	±20%	0.1	0.13	1.1	1.1	100	7.96
L0806C1R5MDWIT	1.5	±20%	0.15	0.195	1	1	80	7.96
L0806C2R2MDWIT	2.2	±20%	0.2	0.26	0.72	0.75	70	7.96
L0806C3R3MDWIT	3.3	±20%	0.27	0.351	0.61	0.6	55	7.96
L0806C4R7MDWIT	4.7	±20%	0.37	0.481	0.53	0.55	45	7.96
L0806C6R8MDWIT	6.8	±20%	0.59	0.767	0.45	0.45	38	7.96
L0806C100KDWIT	10	±10%	0.82	1.066	0.35	0.38	32	2.52
L0806C100MDWIT	10	±20%	0.82	1.066	0.35	0.38	32	2.52
L0806C150MDWIT	15	±20%	1.2	1.56	0.3	0.3	28	2.52
L0806C220KDWIT	22	±10%	1.8	2.34	0.24	0.25	16	2.52
L0806C220MDWIT	22	±20%	1.8	2.34	0.24	0.25	16	2.52
L0806C330MDWIT	33	±20%	2.8	3.64	0.22	0.22	14	2.52
L0806C470KDWIT	47	±10%	4.3	5.59	0.15	0.15	11	2.52
L0806C470MDWIT	47	±20%	4.3	5.59	0.15	0.15	11	2.52
L0806C680MDWIT	68	±20%	7	9.1	0.13	0.13	10	2.52
L0806C101KDWIT	100	±10%	8	10.4	0.11	0.11	8	0.796
L0806C101MDWIT	100	±20%	8	10.4	0.11	0.11	8	0.796
L1007C1R0MDWIT	1.0	±20%	0.08	0.104	1.2	1	100	7.96
L1007C1R5MDWIT	1.5	±20%	0.11	0.143	1.19	0.95	80	7.96
L1007C2R2MDWIT	2.2	±20%	0.13	0.169	1.1	0.89	68	7.96
L1007C3R3MDWIT	3.3	±20%	0.16	0.208	1.02	0.73	54	7.96
L1007C4R7MDWIT	4.7	±20%	0.2	0.26	0.92	0.68	41	7.96
L1007C6R8MDWIT	6.8	±20%	0.3	0.39	0.74	0.55	38	7.96
L1007C100KDWIT	10	±10%	0.36	0.468	0.68	0.48	30	2.52
L1007C100MDWIT	10	±20%	0.36	0.468	0.68	0.48	30	2.52
L1007C150KDWIT	15	±10%	0.65	0.845	0.5	0.35	23	2.52
Part Number	Inductance (µH)	Inductance Tolerance	DC Resistance (Ω) Typical	DC Resistance (Ω) Maximum	Rated Current I <sub>rms</sub> (A) <sup>1</sup>	Rated Current I <sub>sat</sub> (A) <sup>2</sup>	Self-Resonance Frequency (MHz) Minimum	Inductance Measuring Frequency (MHz)

<sup>1</sup> T = 40 K rise at rated current at 20°C<sup>2</sup> Inductance drop 30% at rated current at 20°C

**OBSOLETE**

Chip Inductors

High Current Wire Wound Chip Power Inductor L-DWI

**KEMET**  
a YAGEO company**Table 1 – Ratings & Part Number Reference**

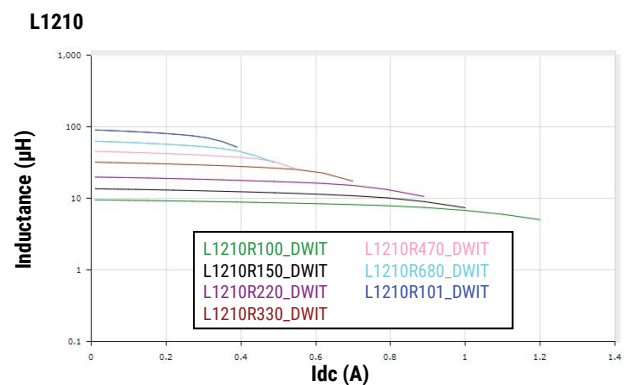
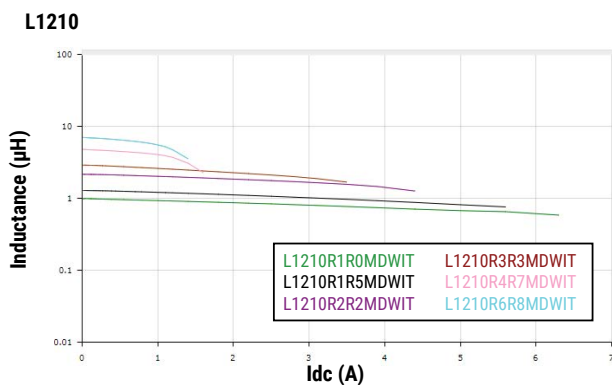
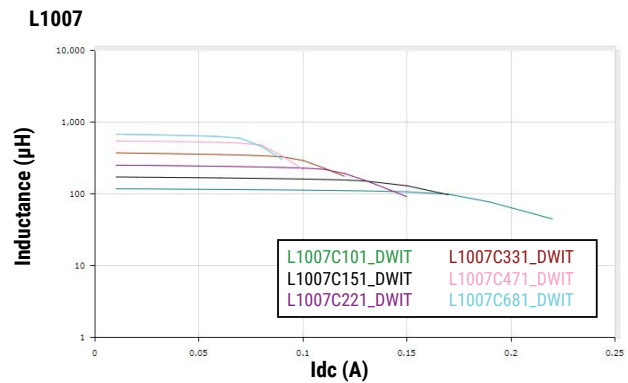
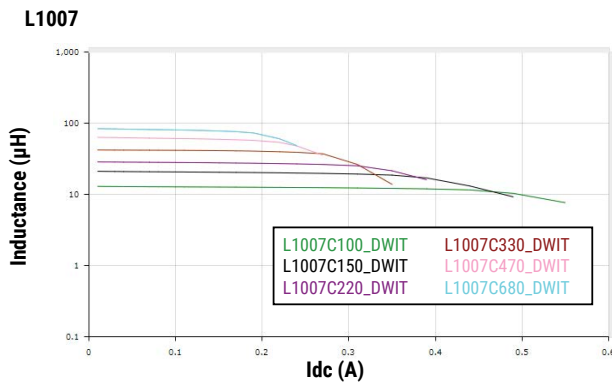
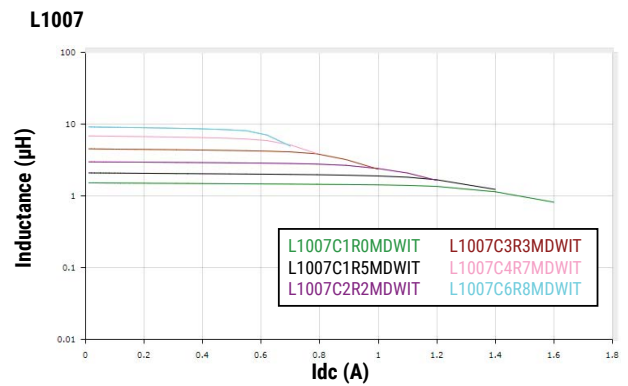
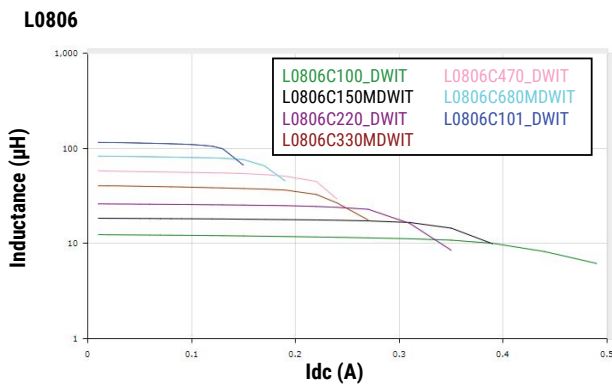
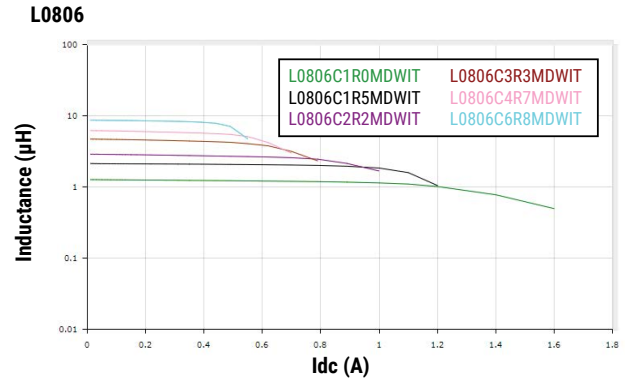
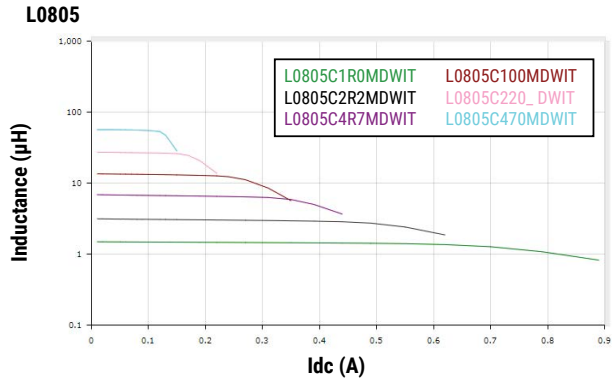
Part Number	Inductance (µH)	Inductance Tolerance	DC Resistance (Ω) Typical	DC Resistance (Ω) Maximum	Rated Current $I_{rms}$ (A) <sup>1</sup>	Rated Current $I_{sat}$ (A) <sup>2</sup>	Self-Resonance Frequency (MHz) Minimum	Inductance Measuring Frequency (MHz)
L1007C150MDWIT	15	±20%	0.65	0.845	0.5	0.35	23	2.52
L1007C220KDWIT	22	±10%	0.77	1.001	0.46	0.32	19	2.52
L1007C220MDWIT	22	±20%	0.77	1.001	0.46	0.32	19	2.52
L1007C330KDWIT	33	±10%	1.5	1.95	0.32	0.27	15	2.52
L1007C330MDWIT	33	±20%	1.5	1.95	0.32	0.27	15	2.52
L1007C470KDWIT	47	±10%	1.9	2.47	0.29	0.24	12	2.52
L1007C470MDWIT	47	±20%	1.9	2.47	0.29	0.24	12	2.52
L1007C680KDWIT	68	±10%	2.8	3.64	0.2	0.2	9.5	2.52
L1007C680MDWIT	68	±20%	2.8	3.64	0.2	0.2	9.5	2.52
L1007C101KDWIT	100	±10%	3.7	4.81	0.17	0.16	9	0.796
L1007C101MDWIT	100	±20%	3.7	4.81	0.17	0.16	9	0.796
L1007C151KDWIT	150	±10%	6.1	7.93	0.13	0.14	7	0.796
L1007C151MDWIT	150	±20%	6.1	7.93	0.13	0.14	7	0.796
L1007C221KDWIT	220	±10%	8.4	10.92	0.11	0.12	5.5	0.796
L1007C221MDWIT	220	±20%	8.4	10.92	0.11	0.12	5.5	0.796
L1007C331KDWIT	330	±10%	12.3	15.99	0.09	0.1	4.5	0.796
L1007C331MDWIT	330	±20%	12.3	15.99	0.09	0.1	4.5	0.796
L1007C471KDWIT	470	±10%	22	28.6	0.07	0.08	3.5	0.796
L1007C471MDWIT	470	±20%	22	28.6	0.07	0.08	3.5	0.796
L1007C681KDWIT	680	±10%	28	36.4	0.06	0.07	3	0.796
L1007C681MDWIT	680	±20%	28	36.4	0.06	0.07	3	0.796
L1210R1R0MDWIT	1.0	±20%	0.06	0.072	1.44	2	250	0.1
L1210R1R5MDWIT	1.5	±20%	0.06	0.078	1.31	2	250	0.1
L1210R2R2MDWIT	2.2	±20%	0.08	0.104	1.13	2	190	0.1
L1210R3R3MDWIT	3.3	±20%	0.1	0.124	1.04	2	160	0.1
L1210R4R7MDWIT	4.7	±20%	0.1	0.13	1.01	1.25	70	0.1
L1210R6R8MDWIT	6.8	±20%	0.12	0.156	0.94	0.95	50	0.1
L1210R100KDWIT	10	±10%	0.13	0.173	0.9	0.9	23	0.1
L1210R100MDWIT	10	±20%	0.13	0.173	0.9	0.9	23	0.1
L1210R150KDWIT	15	±10%	0.2	0.254	0.85	0.73	20	0.1
L1210R150MDWIT	15	±20%	0.2	0.254	0.85	0.73	20	0.1
L1210R220KDWIT	22	±10%	0.27	0.351	0.78	0.62	17	0.1
L1210R220MDWIT	22	±20%	0.27	0.351	0.78	0.62	17	0.1
L1210R330KDWIT	33	±10%	0.41	0.533	0.57	0.5	13	0.1
L1210R330MDWIT	33	±20%	0.41	0.533	0.57	0.5	13	0.1
L1210R470KDWIT	47	±10%	0.67	0.871	0.48	0.39	10	0.1
L1210R470MDWIT	47	±20%	0.67	0.871	0.48	0.39	10	0.1
L1210R680KDWIT	68	±10%	1	1.3	0.41	0.32	8	0.1
L1210R680MDWIT	68	±20%	1	1.3	0.41	0.32	8	0.1
L1210R101KDWIT	100	±10%	1.4	1.82	0.34	0.27	6	0.1
L1210R101MDWIT	100	±20%	1.4	1.82	0.34	0.27	6	0.1
Part Number	Inductance (µH)	Inductance Tolerance	DC Resistance (Ω) Typical	DC Resistance (Ω) Maximum	Rated Current $I_{rms}$ (A) <sup>1</sup>	Rated Current $I_{sat}$ (A) <sup>2</sup>	Self-Resonance Frequency (MHz) Minimum	Inductance Measuring Frequency (MHz)

<sup>1</sup> T = 40 K rise at rated current at 20°C<sup>2</sup> Inductance drop 30% at rated current at 20°C

# OBSOLETE

Chip Inductors  
High Current Wire Wound Chip Power Inductor L-DWI

## DC-Superposed Characteristics



# OBSOLETE

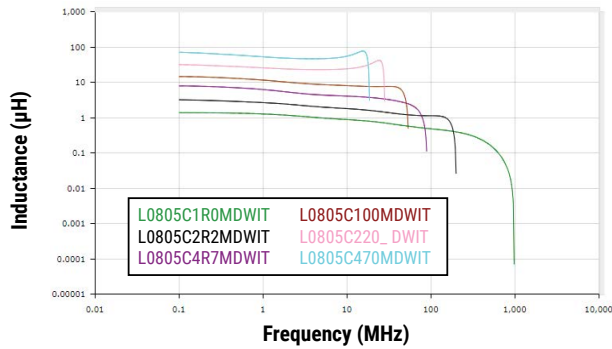
Chip Inductors

High Current Wire Wound Chip Power Inductor L-DWI

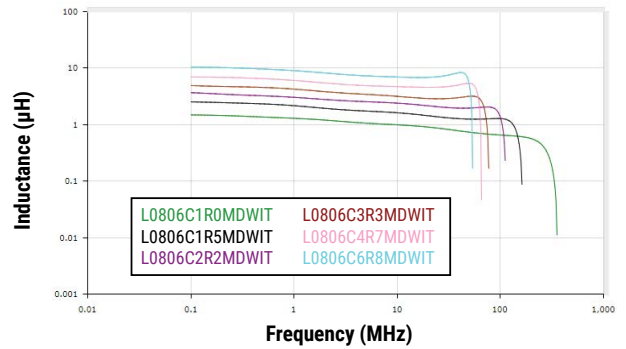


## Inductance versus Frequency Characteristics

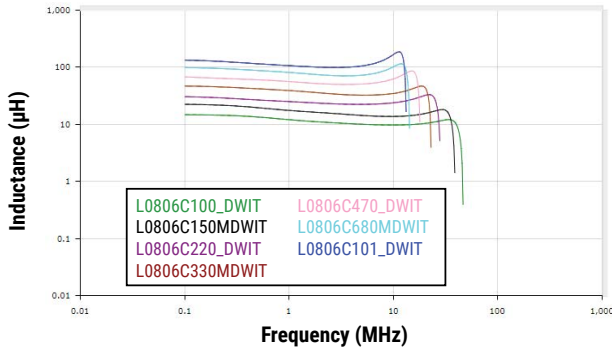
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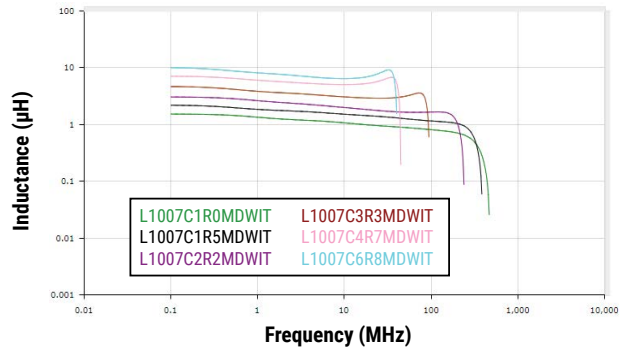
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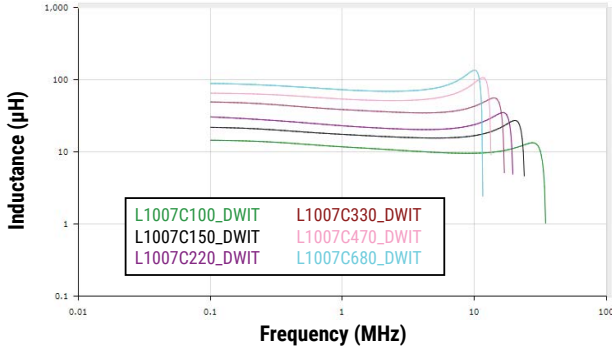
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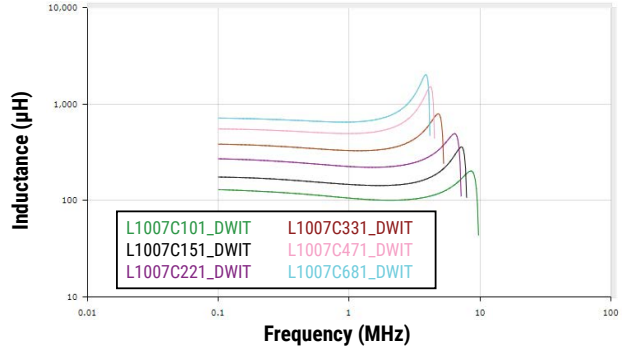
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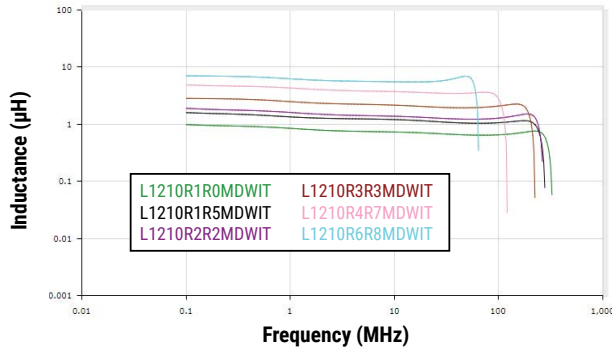
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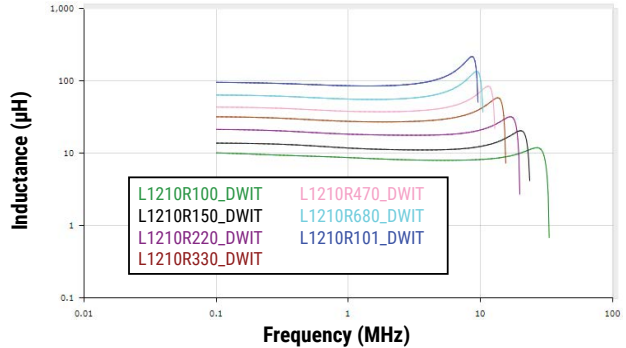
**L1007**



**L1210**



**L1210**

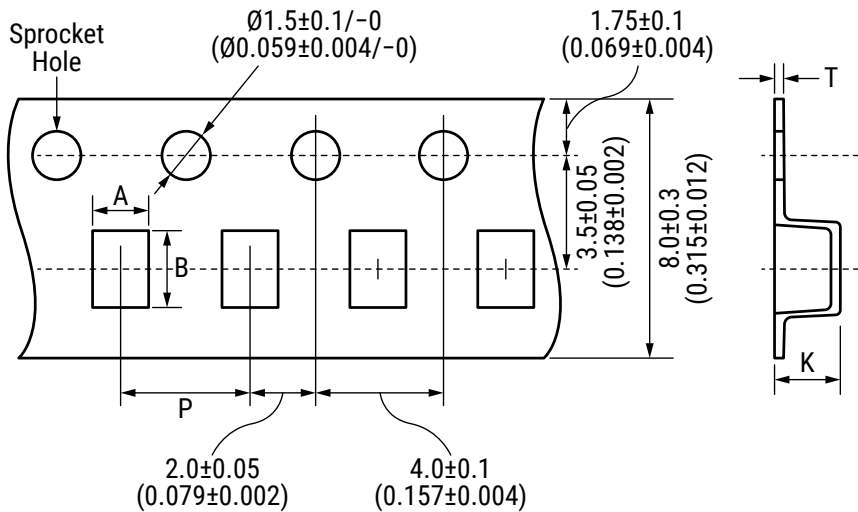




**OBsolete**

Chip Inductors

High Current Wire Wound Chip Power Inductor L-DWI

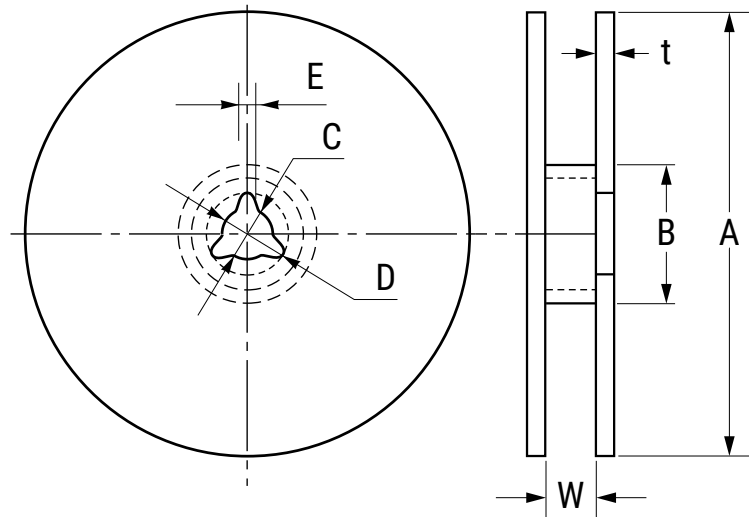
**KEMET**  
a YAGEO company**Taping Specifications - Millimeters (Inches)****0805, 0806, 1007 and 1210 Embossed (Plastic) Tape 8mm Width**

EIA Case Size	Metric Case Size	Height	Reel Quantity		Cavity		Pitch	Thickness	
					A	B	P	T	K
0805	2012	1.25	3,000	Nominal	1.45	2.25	4.00	0.25	1.45
				Tolerance	$\pm 0.1$	$\pm 0.1$	$\pm 0.1$	$\pm 0.05$	Maximum
0806	2016	1.6	2,000	Nominal	1.75	2.10	4.00	0.30	1.90
				Tolerance	$\pm 0.1$	$\pm 0.1$	$\pm 0.1$	$\pm 0.05$	Maximum
1007	2518	1.8	2,000	Nominal	2.15	2.70	4.00	0.30	2.20
				Tolerance	$\pm 0.1$	$\pm 0.1$	$\pm 0.1$	$\pm 0.05$	Maximum
1210	3225	2.5	1,000	Nominal	2.80	3.50	4.00	0.30	4.00
				Tolerance	$\pm 0.1$	$\pm 0.1$	$\pm 0.1$	$\pm 0.05$	Maximum

**OBSOLETE**

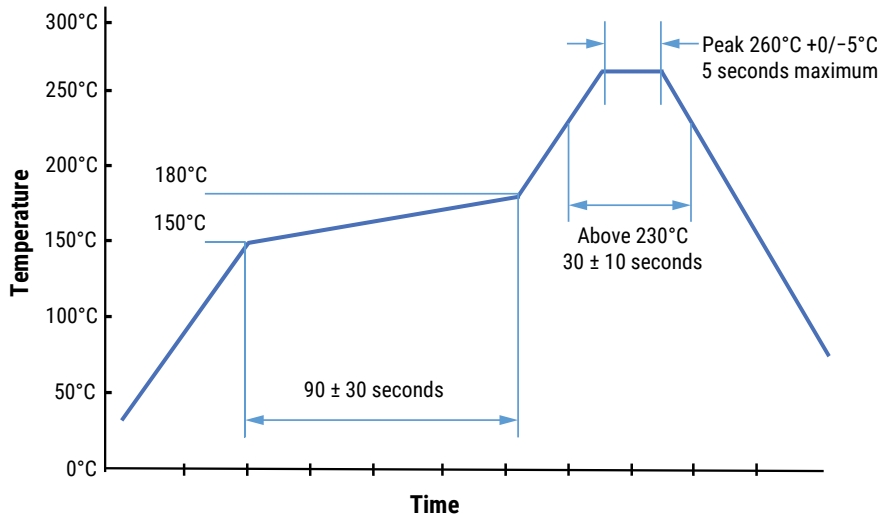
Chip Inductors

High Current Wire Wound Chip Power Inductor L-DWI

**KEMET**  
a YAGEO company**Reel Specifications - Millimeters**

Series		Dimensions - Millimeters						
		A	B	C	D	E	t	W
L-DWI	Nominal	ø180.0	ø60.0	ø13.0	ø21.0	2.0	2.5	10.0
	Tolerance	Maximum	Minimum	±0.5	±0.8	±0.5	Maximum	±1.5

## Recommended Reflow Soldering Profile



## Handling Precautions

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

KEMET recommends that maximum storage temperature not exceed  $40^\circ\text{C}$  and maximum storage humidity not exceed 70% relative humidity. Atmospheres should be free of chlorine-bearing and sulfur-bearing compounds. Temperature fluctuations should be minimized to avoid condensation on the parts.

For optimized solderability, inductor stock should be used promptly, preferably within six months of receipt.

## KEMET Electronics Corporation Sales Offices

For a complete list of our global sales offices, please visit [www.kemet.com/sales](http://www.kemet.com/sales).

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### Disclaimer

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