

FEATURES:

- Chip Ferrite power inductor for high integration devices.
- Sizes: 0603, 0805, and 0806
- Inductance range: 0.24uH to 4.7uH
- Rated current: 600mA to 1600mA
- Ceramic structure provides high reliability/high productivity
- Low DC resistance with high current



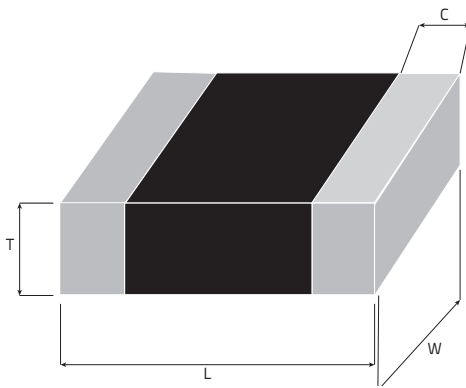
PART NUMBER STRUCTURE

Series	Size	Type	Inductance Value	Tolerance	Packaging
MFPI 160808	G	-	R24	M	T
160808	G=General Purpose		R24 = .24uH 8R2 = 8.2uH	M = ±20%	T = Tape & Reel
201209					
201205					
201609					

Example P/N: MFPI160808G-R24MT

Standard Termination is 100% matte Tin over Nickel.

DIMENSIONS



Unit: mm (inches)

SIZE	L	W	T	C
160808 (0603)	1.6 ± 0.15 (0.064 ± .006)	0.8 ± 0.15 (0.032 ± .006)	0.8 ± 0.15 (0.032 ± .006)	0.3 ± 0.2 (0.012 ± .008)
201205 (0805)	2.0 ± 0.15 (0.080 ± .006)	1.25 ± 0.15 (0.050 ± .006)	0.5 ± 0.05 (0.020 ± .002)	0.5 ± 0.2 (0.020 ± 0.008)
201209 (0805)	2.0 ± 0.15 (0.080 ± .006)	1.25 ± 0.15 (0.050 ± .006)	0.9 ± 0.10 (0.035 ± .004)	0.5 ± 0.2 (0.020 ± 0.008)
201609 (0806)	2.0 ± 0.15 (0.080 ± .006)	1.6 ± 0.15 (0.064 ± .006)	0.9 ± 0.10 (0.035 ± .004)	0.5 ± 0.2 (0.020 ± 0.008)

OPERATING / STORAGE TEMPERATURE RANGE

Operating Temperature Range	-40 to +125°C
Soldering Method	Reflow
Moisture Sensitivity Level	1

ELECTRICAL SPECIFICATION & RANGE

160808 SIZE

INDUCTANCE (uH)	TOLERANCE	L/Q FREQ. (MHz)	SELF-RESONANT FREQUENCY (MHz)	DC RESISTANCE (Ω)	RATED CURRENT (mA)	VENKEL PART NUMBER
0.24	±20%	1	90	0.10	1200	MFPI160808G-R24MT
0.47	±20%	1	70	0.10	1200	MFPI160808G-R47MT
1.0	±20%	1	60	0.20	950	MFPI160808G-1R0MT
2.2	±20%	1	50	0.30	750	MFPI160808G-2R2MT

201205 SIZE

INDUCTANCE (uH)	TOLERANCE	L/Q FREQ. (MHz)	SELF-RESONANT FREQUENCY (MHz)	DC RESISTANCE (Ω)	RATED CURRENT (mA)	VENKEL PART NUMBER
0.47	±20%	1	100	0.120	1100	MFPI201205G-R47MT
1.0	±20%	1	90	0.190	800	MFPI201205G-1R0MT
1.5	±20%	1	70	0.260	700	MFPI201205G-1R5MT
2.2	±20%	1	40	0.330	600	MFPI201205G-2R2MT

201209 SIZE

INDUCTANCE (uH)	TOLERANCE	L/Q FREQ. (MHz)	SELF-RESONANT FREQUENCY (MHz)	DC RESISTANCE (Ω)	RATED CURRENT (mA)	VENKEL PART NUMBER
0.47	±20%	1	100	0.080	1300	MFPI201209G-R47MT
1.0	±20%	1	50	0.100	900	MFPI201209G-1R0MT
2.2	±20%	1	40	0.230	800	MFPI201209G-2R2MT
4.7	±20%	1	40	0.230	800	MFPI201209G-4R7MT

201609 SIZE

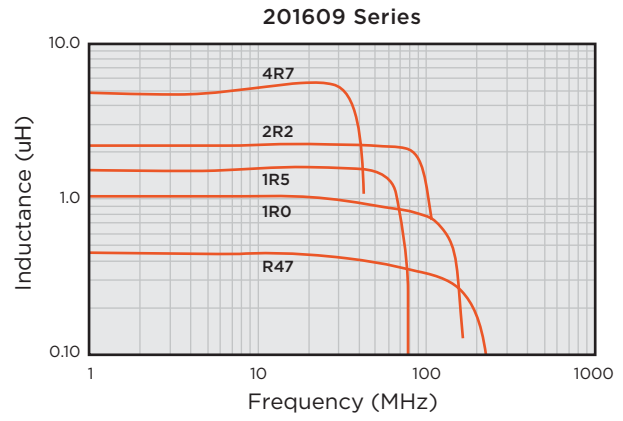
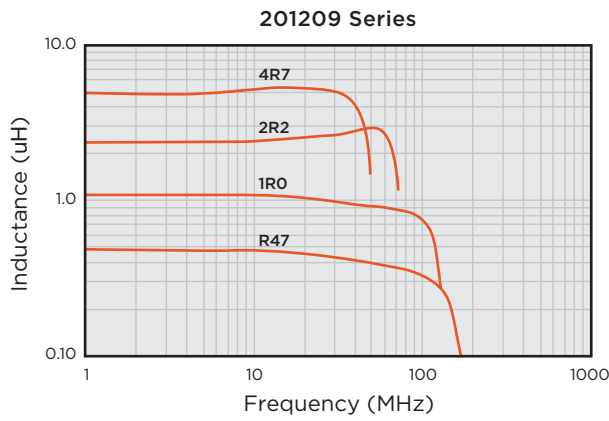
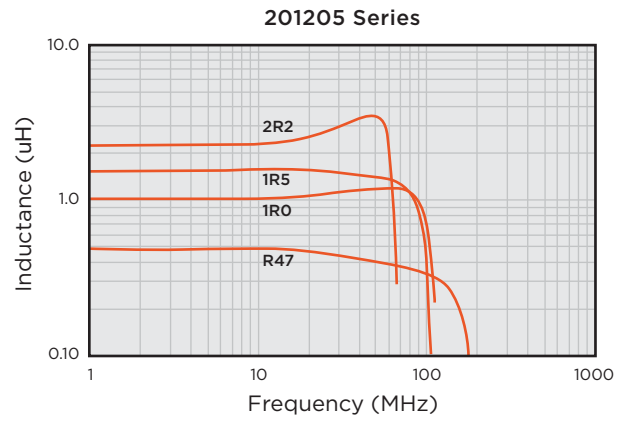
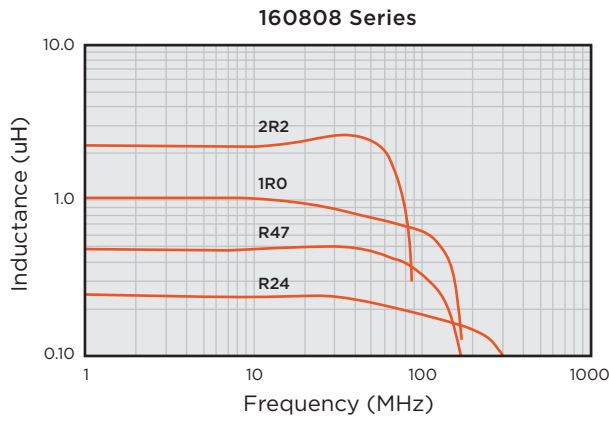
INDUCTANCE (uH)	TOLERANCE	L/Q FREQ. (MHz)	SELF-RESONANT FREQUENCY (MHz)	DC RESISTANCE (Ω)	RATED CURRENT (mA)	VENKEL PART NUMBER
0.47	±20%	1	80	0.060	1600	MFPI201609G-R47MT
1.0	±20%	1	70	0.090	1400	MFPI201609G-1R0MT
1.5	±20%	1	50	0.110	1200	MFPI201609G-1R5MT
2.2	±20%	1	50	0.110	1200	MFPI201609G-2R2MT
4.7	±20%	1	20	0.140	1100	MFPI201609G-4R7MT

TEST INSTRUMENTS:

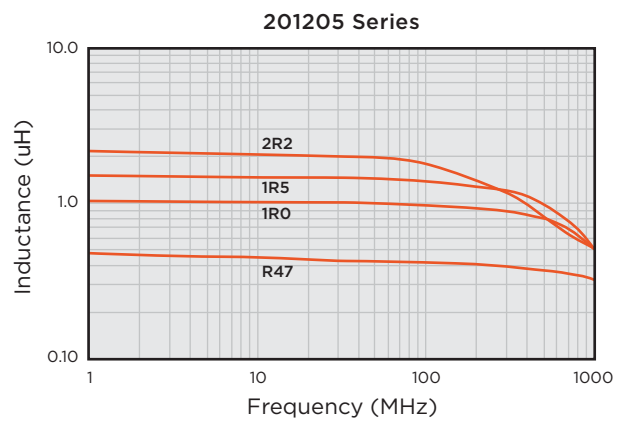
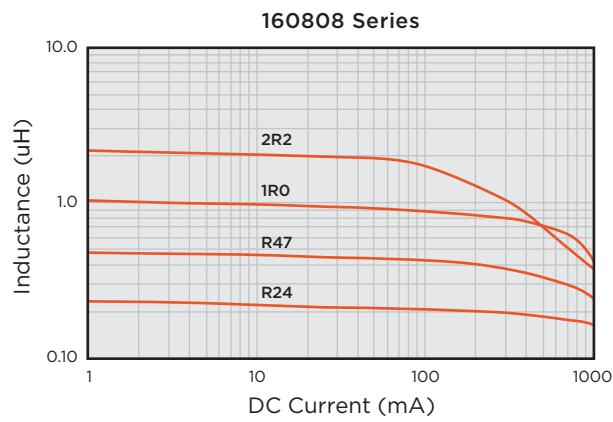
- HP4291B-RF Impedance/Material Analyzer
- HP4338A/B Milliohm meter
- Test Frequency: 1MHz/OSC Level: 100mV

CURRENT CHARACTERISTIC GRAPHS

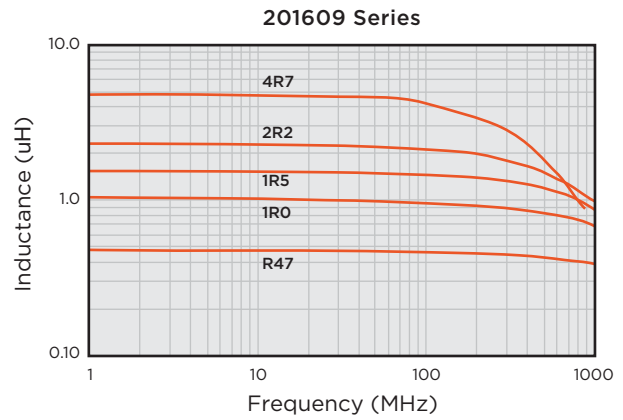
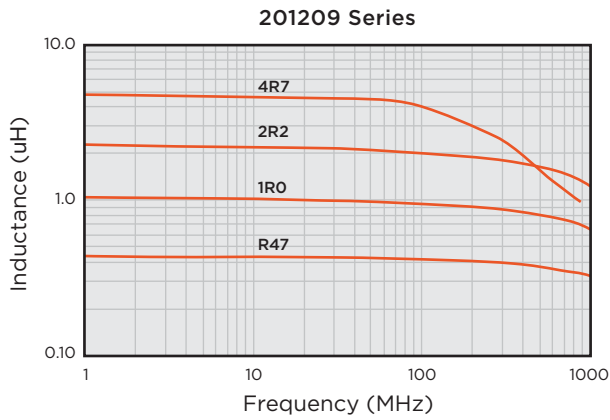
Inductance vs. Frequency



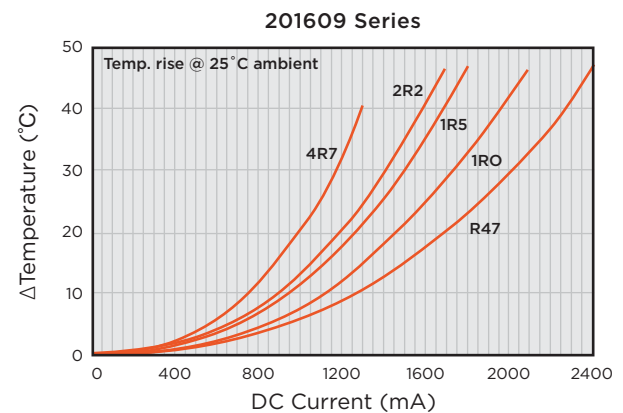
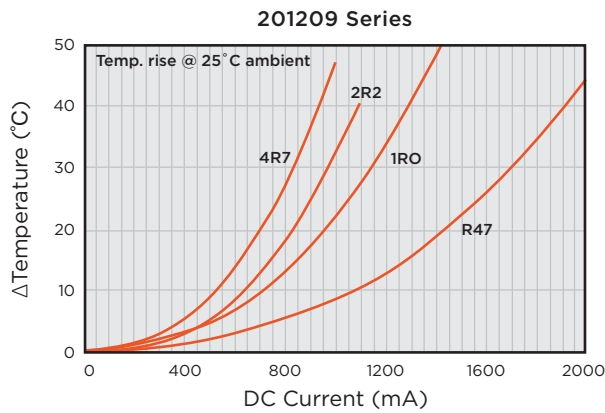
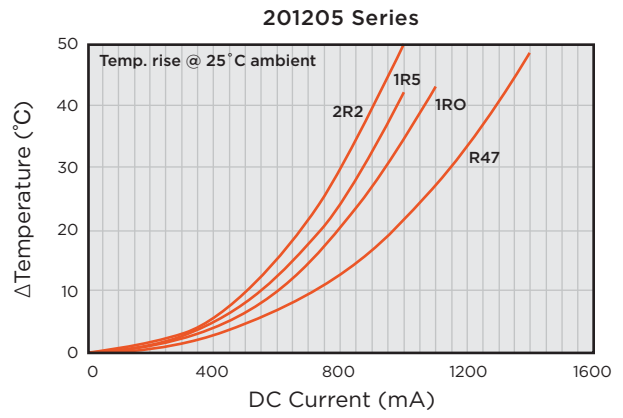
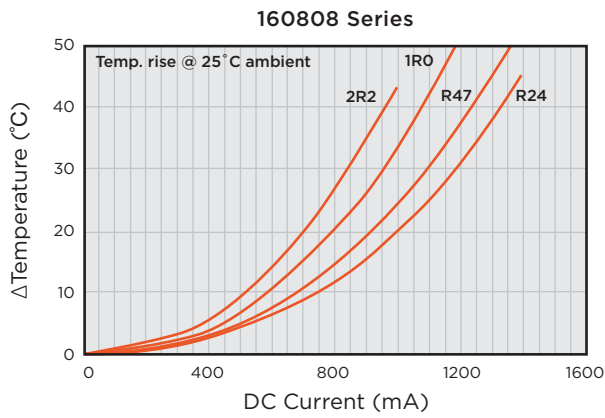
Inductance vs. DC-BIAS



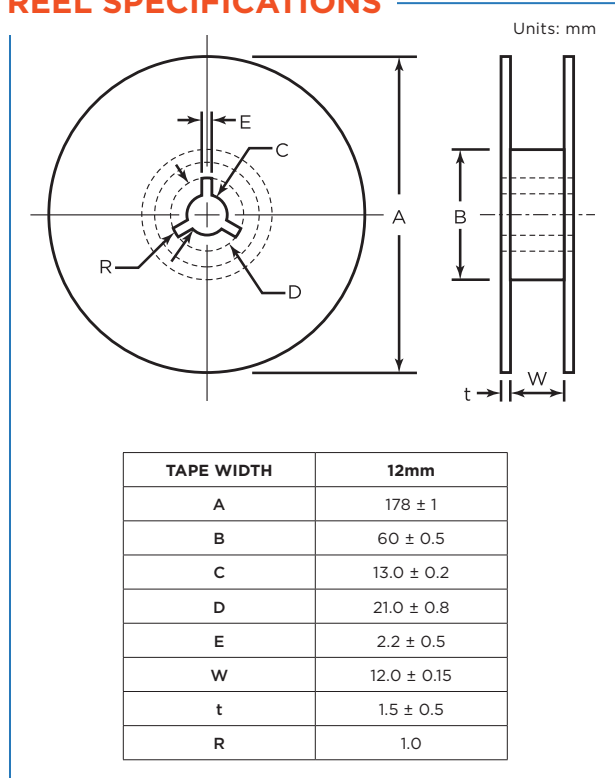
CURRENT CHARACTERISTIC GRAPHS



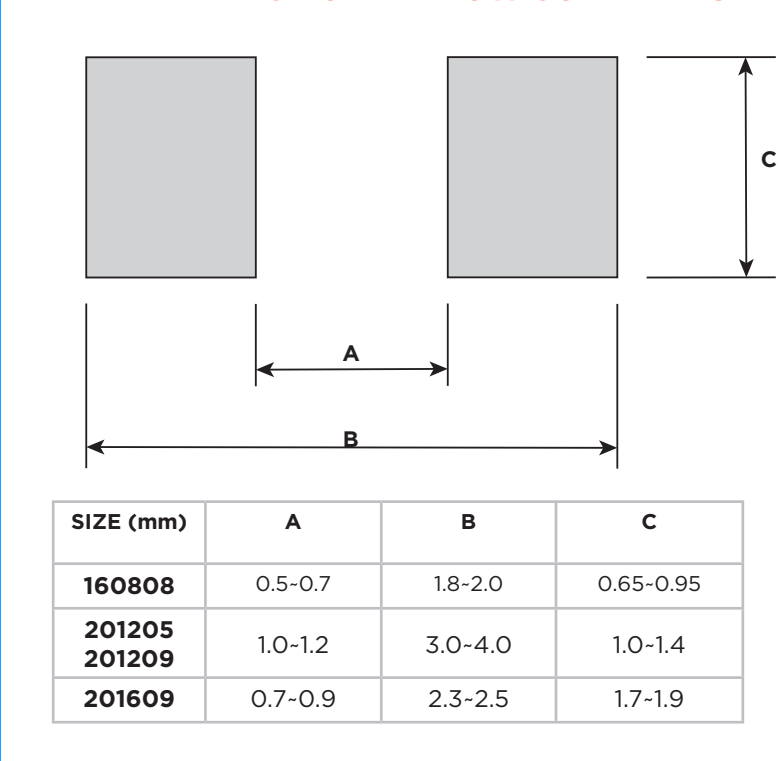
Temperature vs. DC-BIAS



REEL SPECIFICATIONS

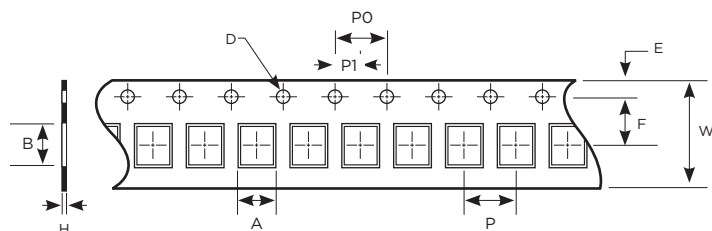


LAND PATTERNS FOR REFLOW SOLDERING



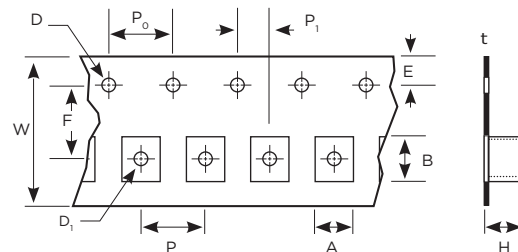
TAPE SPECIFICATIONS

Paper Carrier



Size	160808	201205
Tape	Paper Tape	Paper Tape
A	0.97±0.05	1.45±0.05
B	1.80±0.05	2.25±0.05
H	0.75±0.05	0.60±0.03
F	3.50±0.10	3.50±0.05
D	1.56±0.10	1.55±0.05
E	1.75±0.10	1.75±0.05
P	4.00±0.10	4.00±0.10
P ₀	4.00±0.10	4.00±0.10
P ₁	2.00±0.10	2.00±0.05
W	8.00±0.10	8.00±0.10
Qty/Reel	4,000	4,000

Embossed Carrier



Size	201209	201609
Tape	Embossed Tape	Embossed Tape
A	1.40±0.10	1.90±0.10
B	2.30±0.10	2.30±0.10
H	1.13±0.10	1.15±0.10
t	0.22±0.05	0.22±0.05
F	3.50±0.10	3.50±0.10
D	1.55±0.05	1.55±0.05
D ₁	1.00±0.05	1.00±0.05
E	1.75±0.10	1.75±0.10
P	4.00±0.10	4.00±0.10
P ₀	4.00±0.10	4.00±0.10
P ₁	2.00±0.10	2.00±0.10
W	8.00±0.10	8.00±0.10
Qty/Reel	3,000	3,000

RELIABILITY AND TEST CONDITIONS

TEST	TEST CRITERIA	TEST METHOD
Resistance to Solder Heat	<ol style="list-style-type: none"> 1. More than 95 % of terminal electrode should be covered with new solder 2. No mechanical damage 3. Inductance value should be within ± 20 % of the initial value 	<ol style="list-style-type: none"> 1. Solder temperature : $260 \pm 5^{\circ}\text{C}$ 2. Flux : Rosin 3. DIP time : 10 ± 1 sec
Solderability	<ol style="list-style-type: none"> 1. More than 95 % of terminal electrode should be covered with new solder 2. No mechanical damage 	<ol style="list-style-type: none"> 1. Solder temperature : $235 \pm 5^{\circ}\text{C}$ 2. Flux : Rosin 3. DIP time : 5 ± 1 sec
Adhesive Test	<ol style="list-style-type: none"> 1. No mechanical damage 2. Soldering the products on PCB after the pulling test force > 5 N 	<ol style="list-style-type: none"> 1. Reflow temperature : 245°C. It shall be soldered on the substrate applying direction parallel to the substrate. 2. Apply force(F) : 5 N 3. Test time : 10 sec
Temperature Cycle	<ol style="list-style-type: none"> 1. No mechanical damage 2. Inductance should be within ± 20% of the initial value (Inductance:$\leq 0.47\mu\text{H}$) Inductance should be within ± 30% of the initial value (Inductance:$> 0.47\mu\text{H}$) 	<ol style="list-style-type: none"> 1. Temperature: $-40 - 125^{\circ}\text{C}$ for 30 minutes each 2. Cycle: 100 cycles 3. Measurement: at ambient temperature 24 hours after test completion
High Temperature Resistance	<ol style="list-style-type: none"> 1. No mechanical damage 2. Inductance should be within ± 20% of the initial value (Inductance:$\leq 0.47\mu\text{H}$) Inductance should be within ± 30% of the initial value (Inductance:$> 0.47\mu\text{H}$) 	<ol style="list-style-type: none"> 1. Temperature: $85 \pm 5^{\circ}\text{C}$ 2. Testing time: 1000 hours 3. Measurement: at ambient temperature 24 hours after test completion
Humidity	<ol style="list-style-type: none"> 1. No mechanical damage 2. Inductance should be within ± 20% of the initial value 	<ol style="list-style-type: none"> 1. Temperature: $40^{\circ}\text{C} \pm 2^{\circ}\text{C}$ 2. Humidity: 90-95 % RH 3. Testing time: 1000 hours 4. Measurement: at ambient temperature 24 hours after test completion
Rated Current	<ol style="list-style-type: none"> 1. Product surface Temp: below room temperature plus 40°C 	<ol style="list-style-type: none"> 1. At ambient temperature & humidity Testing time: 5 minutes (under full rated current)