

# Ultra High Current EMI Ferrite Chip Beads

Laird Technologies' family of monolithic surface mount ferrites provide compact, cost effective EMI filtering for today's densely packed single and double sided surface mount PCB designs. Successful EMI filtering often depends on reducing high frequency noise at its source, our small footprint SMT ferrite enables designers to place high performance filtering very close to troublesome high frequency devices.

**Features:**

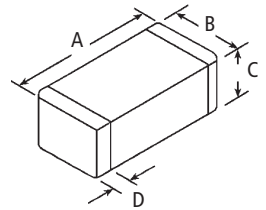
- High current performance (up to 10 amps continuous operation)
- Peak impedance at approximately 2 GHz
- Small footprint
- Economical component for high current applications requiring discrete signal filtering
- High impedance retention under DC Bias
- Superior retention under bias when compared to older wire wound components
- Vibration resistant, monolithic construction
- Lead Free

**Applications:**

- High current products
- Differential mode filtering of power input pins of oscillators and logic devices using high speed clocks
- Filtering of low frequency input/output signals entering/leaving shielded enclosures
- High frequency filtering of medium speed clocks and video signals
- Preventing oscillations in high frequency amplifiers
- Discrete component filtration in power supplies

**PART NUMBERING SYSTEM EXAMPLE**

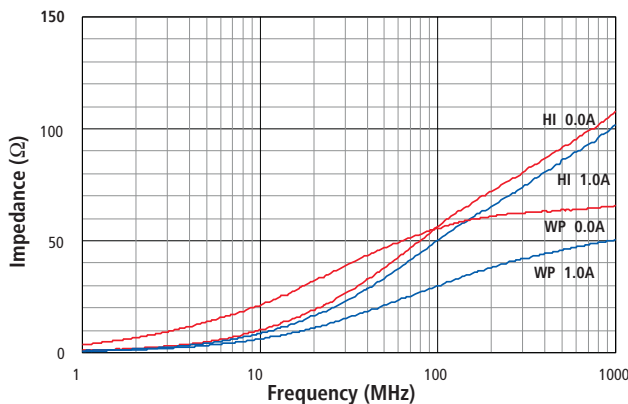
<b>HI</b>	<b>1612</b>	<b>X</b>	<b>560</b>	<b>R</b>	<b>-10</b>
Product Series Code	Part Size Code	Rated Continuous Current Code	Impedance Value Code	Packaging Code	Additional Description



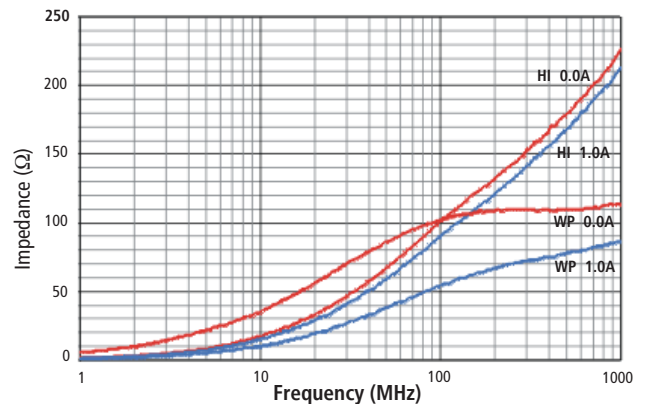
PART NUMBER	FIG # (ON BACK)	A mm (inches)	B mm (inches)	C mm (inches)	D mm (inches)	IMPEDANCE (Z) TYPICAL OHMS @				Typical Peak Impedance (Ω)	Peak Impedance Frequency (MHz)	DCR MAX (Ω)	RATED I MAX (continuous) mA
						25 MHz	100 MHz	500 MHz	1 GHz				
HI1612X560R-10	1	4.06 (0.160)	3.05 (0.120)	2.28 (0.090)	0.46 (0.018)	23	56	75	79	79	1,000	0.004	10,000
HI3312X101R-10	2	8.50 (0.335)	3.05 (0.120)	2.28 (0.090)	0.51 (0.020)	39	100	160	172	172	1,000	0.004	10,000

**Comparison of impedance (under bias) to older wire type parts**

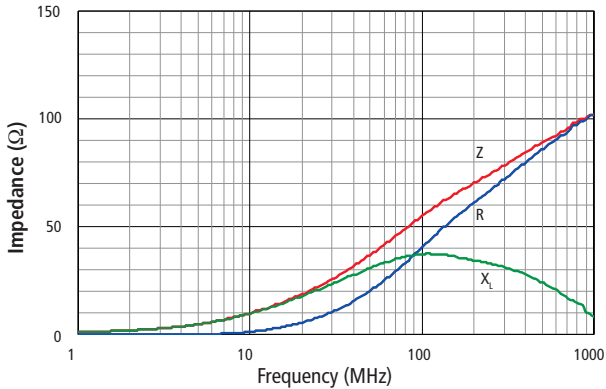
HI1612 (HI) vs. Conventional Wound Part (WP)  
Z vs. Frequency  
Impedance Under DC Bias



HI3312 (HI) vs. Conventional Wound Part (WP)  
Z vs. Frequency  
Impedance Under DC Bias

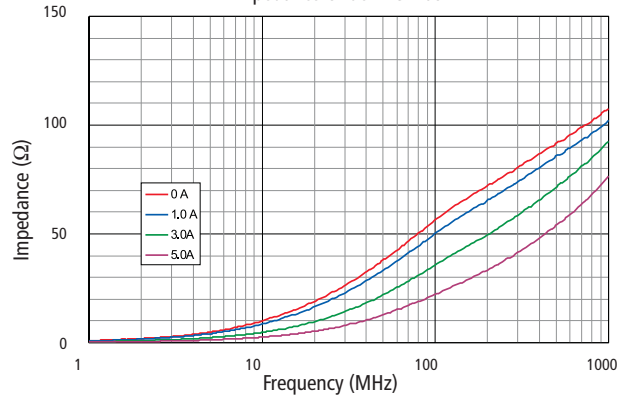


**HI1612X560R-10**  
Z, R,  $X_L$  vs Frequency  
Impedance, Resistance, Inductive Reactance

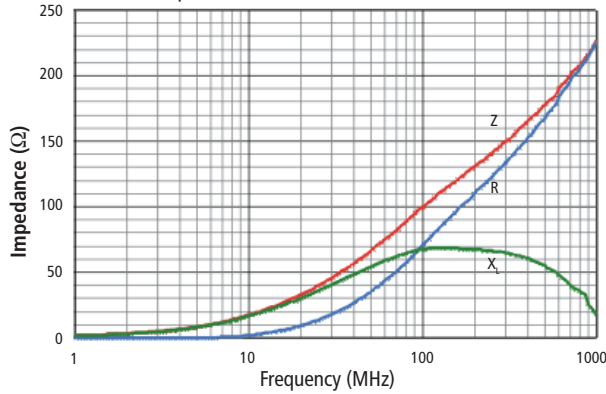


Performance Peaks about 2 GHz

**HI1612X560R-10**  
Z vs. Frequency  
Impedance Under DC Bias

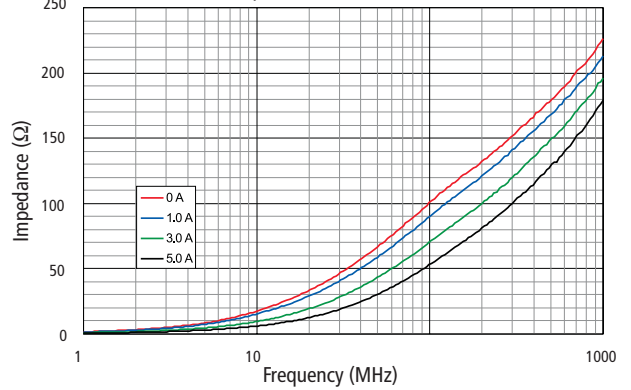


**HI3312X101R-10**  
Z, R,  $X_L$  vs Frequency  
Impedance, Resistance, Inductive Reactance

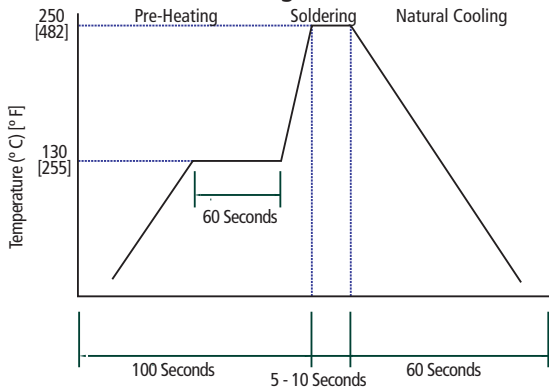


Performance Peaks about 2 GHz

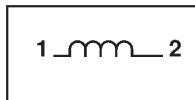
**HI3312X101R-10**  
Z vs. Frequency  
Impedance Under DC Bias



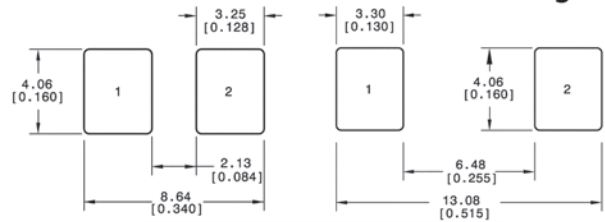
**Recommended Lead Free Soldering Conditions**



**Equivalent Circuit**



**Land Patterns for Reflow Soldering**



**Figure 1**  
**HI1612**

**Figure 2**  
**HI3312**