

# Surface Mount Power Inductor



**Steward's** DI2220V301R-10 is a surface mount, high current power inductor (in the industry's smallest package) with exceptional performance under DC Bias. Very low DCR provides superior thermal performance under DC bias. This compact, monolithic component produces flat inductance over the driven current range (from 3 to 8 amps) comparable to a larger, heavier, wire-wound toroidal inductor.

Patent Pending

## Features:

- Low Profile (height is 3.61mm / 0.142")
- EMI resistant, fully shielded printed coil
- Small footprint (one fourth the footprint of an equivalent performance, old style, wire wound inductor assembly)
- Superior performance under DC Bias
- Rugged, vibration resistant monolithic construction
- Maximum performance at 8 amps will yield > 250nH
- Distributed power multiphase DC-DC converters that use **Steward's** new power inductor can operate faster, cooler and cleaner
- New high performance, multiphase designs (with the new power inductor) require significantly less total pc board space and usually have lower system cost

## Applications:

- Power inductor for DC-DC Converter
- Specifically tuned to work with the new generation of high frequency multiphase DC-DC converters
- Mounting can be on back side of pc boards
- Applications with Voltage Regulator Modules

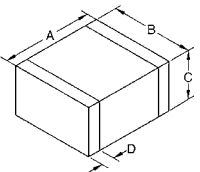
## Test Specifications:

- Maximum current ratings are determined by testing to a maximum temperature rise of 40°C with continuous operating current
- Board level components are rated up to a maximum of 75 volts

**Tested with:** • HP4396A (100KHz - 1.8 GHz) or HP8753 (to 6 GHz) Network/Spectrum Analyzer • HP43961A Impedance Test Kit • HP16192A Test Fixture or Inter-Continental Microwave custom fixtures • HP16200A DC Bias Adapter • Philips PM2811 DC Power Supply • Ambient Temperature 23.5°C ± 2° • Bandwidth 3 kHz • Sweep Time 423 ms

## Steward PART NUMBERING SYSTEM EXAMPLE

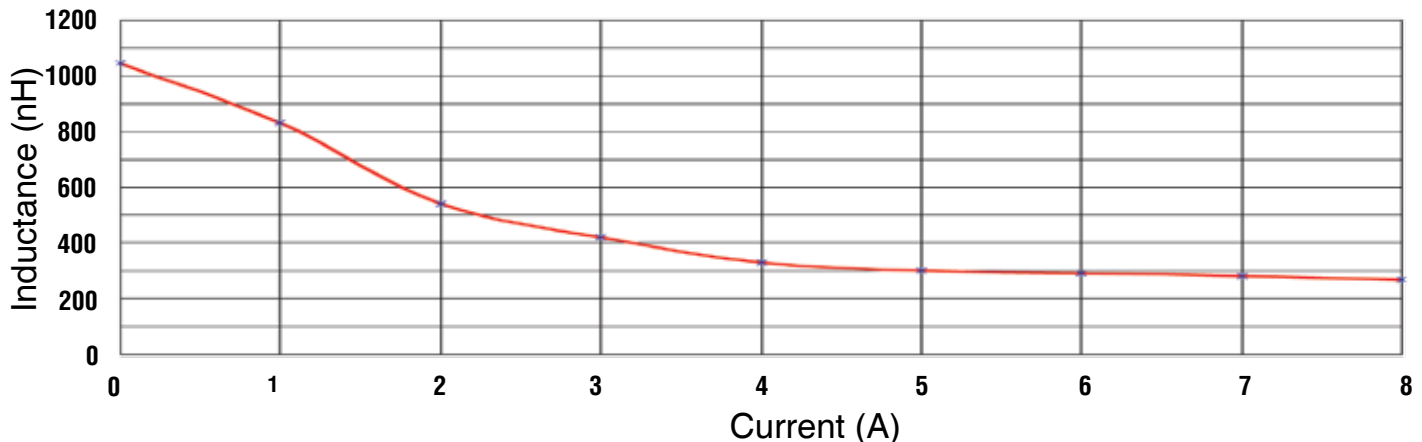
<b>DI</b>	<b>2220</b>	<b>V</b>	<b>301</b>	<b>R</b>	<b>-10</b>
Product Series Code	Part Size Code	Rated Continuous Current Code	Inductance Value Code	Packaging Code	Additional Description



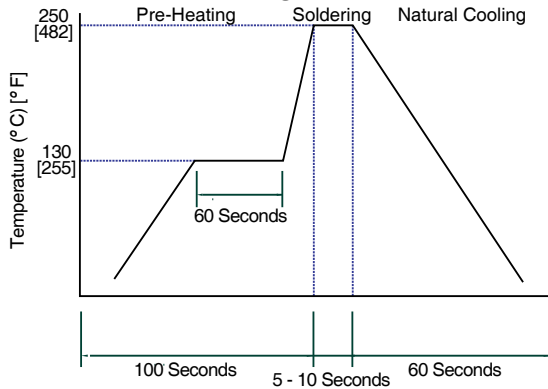
Ambient Operating Temperature Range: -55°C to +125°C

PART NUMBER	A mm (inches)	B mm (inches)	C mm (inches)	D mm (inches)	L @ 2 MHz TYPICAL nH (± 10%)		DCR MAX (Ohms)	RATED I MAX (continuous) mA
					5 AMPS	8 AMPS		
DI2220V301R-10	5.59 ± 0.51 (0.220 ± 0.020)	5.08 ± 0.25 (0.200 ± 0.010)	3.61 ± 0.25 (0.142 ± 0.010)	0.76 ± 0.25 (0.030 ± 0.010)	300	270	0.010	8000

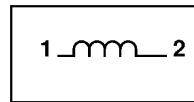
**DI2220V301R-10**  
INDUCTANCE UNDER BIAS



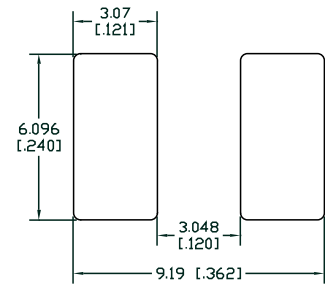
### Recommended Lead Free Soldering Conditions



### Equivalent Circuit



### Land Patterns



Surface Mount Power Inductor  
Brochure 0021A - REV 4.01 - 01/2006

Steward produces an extensive line of ferrite products for Inductive and EMI Filtering Applications. Products include ferrite EMI cable cores, connector plates, unique common mode chokes, can-bus chokes, high current thru hole and surface mount components, impedance chip beads, surface mount inductors, toroid inductor cores and ferrite powders. Please consult our web site, Steward's EMI and Inductive Components full catalog, or contact your nearest Steward office or representative for additional information.

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