# SMT Power Inductors – DS5022P Series




The DS5022 Series of magnetically shielded power inductors is designed for the higher current requirements of portable computers, video recorders and other DC-DC conversion applications.

They feature saturation current ratings as high as 18 Amps and rms current ratings up to 6.5 Amps. Low DC resistance (as low as 0.040 Ohms) keeps power losses to a minimum.

For new designs, consider the MSS1278 as an alternative to this series. The MSS1278 series is more cost effective, features a smaller footprint, lower DCR and better current handling. We will continue to manufacture and support the DS5022P indefinitely.

**SPICE models**
ON OUR WEB SITE OR CD

| Part Number[1] | L ±20%[2] (µH) | DCR max (Ohms) | SRF typ (MHz) | Isat[3] (A) | Irms[4] (A) |
|---|---|---|---|---|---|
| DS5022P-102ML_ | 1.0 | 0.016 | 130 | 18.0 | 6.5 |
| DS5022P-222ML_ | 2.2 | 0.023 | 70 | 14.0 | 5.0 |
| DS5022P-332ML_ | 3.3 | 0.026 | 60 | 12.5 | 4.7 |
| DS5022P-472ML_ | 4.7 | 0.028 | 40 | 11.5 | 4.4 |
| DS5022P-562ML_ | 5.6 | 0.030 | 33 | 10.8 | 4.1 |
| DS5022P-103ML_ | 10 | 0.040 | 30 | 8.0 | 3.9 |
| DS5022P-153ML_ | 15 | 0.048 | 20 | 7.0 | 3.4 |
| DS5022P-223ML_ | 22 | 0.059 | 18 | 6.0 | 3.1 |
| DS5022P-333ML_ | 33 | 0.075 | 14 | 5.0 | 2.8 |
| DS5022P-473ML_ | 47 | 0.097 | 10 | 4.0 | 2.4 |
| DS5022P-683ML_ | 68 | 0.138 | 9.0 | 3.0 | 2.0 |
| DS5022P-104ML_ | 100 | 0.207 | 7.0 | 2.4 | 1.7 |
| DS5022P-154ML_ | 150 | 0.293 | 6.0 | 2.1 | 1.3 |
| DS5022P-224ML_ | 220 | 0.47 | 5.0 | 1.9 | 1.1 |
| DS5022P-274ML_ | 270 | 0.64 | 4.5 | 1.4 | 0.95 |
| DS5022P-334ML_ | 330 | 0.78 | 4.0 | 1.1 | 0.86 |
| DS5022P-474ML_ | 470 | 1.08 | 3.0 | 1.1 | 0.73 |
| DS5022P-684ML_ | 680 | 1.40 | 2.5 | 0.96 | 0.64 |
| DS5022P-824ML_ | 820 | 1.70 | 2.2 | 0.88 | 0.58 |
| DS5022P-105ML_ | 1000 | 2.01 | 2.0 | 0.80 | 0.53 |

1. When ordering, please specify **termination** and **packaging** codes:

**DS5022P-105M L D**

**Termination:** **L** = RoHS compliant gold over nickel over phos bronze. Special order: **T** = RoHS tin-silver-copper (95.5/4/0.5) or **S** = non-RoHS tin-lead (63/37).

**Packaging:** **D** = 13″ machine-ready reel. EIA-481 embossed plastic tape (250 parts per full reel).
**B** = Less than full reel. In tape, but not machine ready. To have a leader and trailer added ($25 charge), use code letter D instead.

2. Inductance tested at 0.1 Vrms, 100 kHz, 0 Adc.
3. DC current at which the inductance drops 10% (typ) from its value without current.
4. Current that causes a 40°C temperature rise from 25°C ambient.
5. **Ambient temperature range:** –40°C to +85°C with Irms current
+85°C to +125°C with derated current
6. **Storage temperature range:** Component: –40°C to +125°C
Packaging: –40°C to +80°C
7. **Resistance to soldering heat:** Three reflows at >217°C for 90 seconds (+260°C ±5°C for 20 – 40 seconds), allowing parts to cool to room temperature between.
8. Electrical specifications at 25°C.

Refer to Doc 362 “Soldering Surface Mount Components” before soldering.



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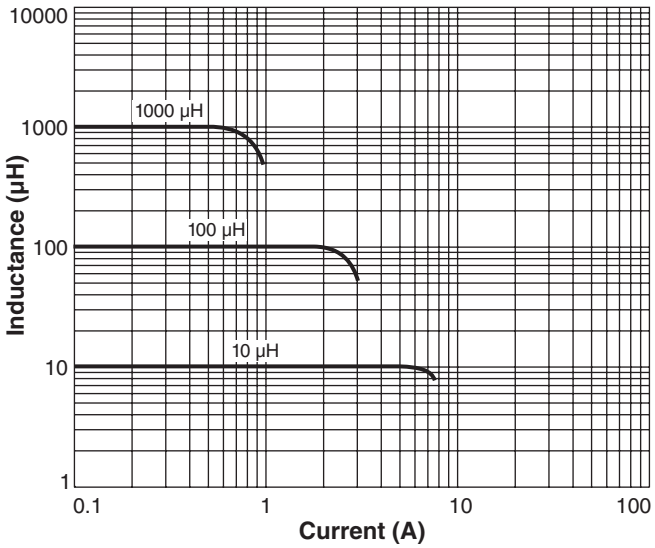
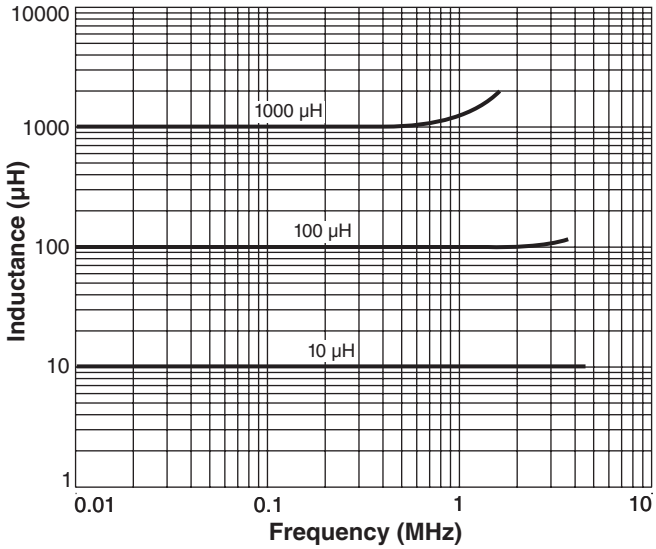
# SMT Power Inductors - DS5022P Series

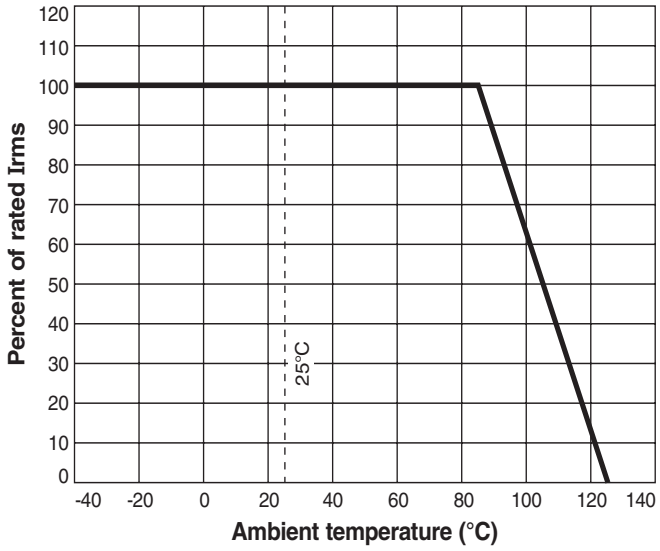
## Typical L vs Current

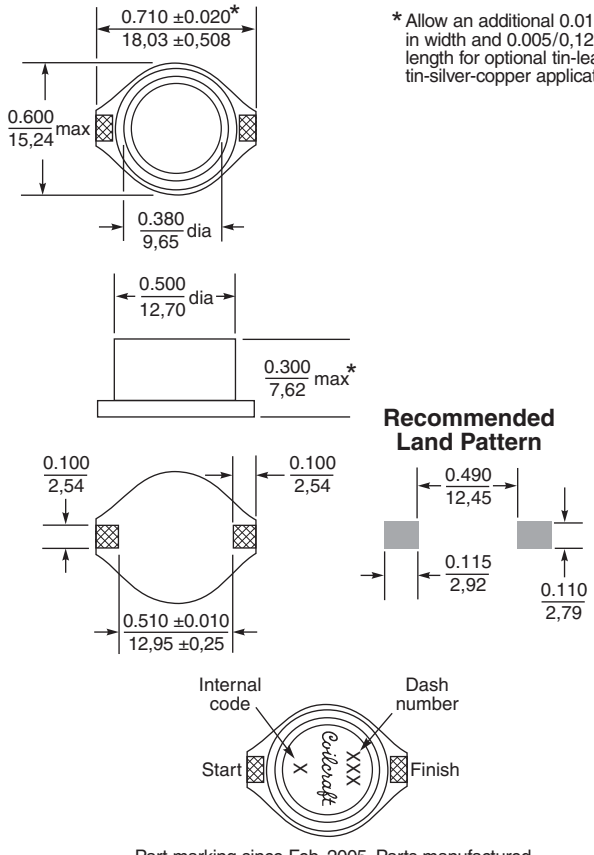



## Typical L vs Frequency




## Irms Derating




* Allow an additional 0.01/0,254 in width and 0.005/0,127 in length for optional tin-lead and tin-silver-copper application.




Part marking since Feb. 2005. Parts manufactured prior to that date may have color dots. Visit www.coilcraft.com/colrpowr.cfm for color dot marking details.

**Weight:** 2.6 – 3.0 g
**Tape and reel:** 250/13″ reel 32 mm tape width
For packaging data see Tape and Reel Specifications section.



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