



Shielded Power Inductors – DS5022P



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.

Coilcraft will continue to manufacture and support the DS5022P indefinitely, however for new designs, we recommend the MSS1278 as an alternative. The MSS1278 series is more cost effective, features a smaller footprint, lower DCR and better current handling.

SPICE models ON OUR WEB SITE

| Part Number ¹ | Inductance ² ±20% (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** code:

DS5022P-105MLD

Termination: **L** = RoHS compliant electroplated gold (<50 µin) 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 100 kHz, 0.1 Vrms, 0 Adc.
3. DC current at which the inductance drops from its value without current.
4. Current that causes a 40°C temperature rise from 25°C ambient.
5. Electrical specifications at 25°C.
Refer to Doc 362 "Soldering Surface Mount Components" before soldering.

Core material Ferrite

Weight: 2.6 – 3.0 g

Terminations RoHS compliant electroplated gold (<50 µin) over nickel over phos bronze.

Ambient temperature –40°C to +85°C with I_{rms} current, +85°C to +125°C with derated current

Storage temperature Component: –40°C to +85°C.
Tape and reel packaging: –40°C to +80°C

Resistance to soldering heat Max three 40 second reflows at +260°C, parts cooled to room temperature between cycles

Moisture Sensitivity Level (MSL) 1 (unlimited floor life at <30°C / 85% relative humidity)

Failures in Time (FIT) / Mean Time Between Failures (MTBF)
38 per billion hours / 26,315,789 hours, calculated per Telcordia SR-332

Packaging 250 per 13" reel Plastic tape: 32 mm wide, 0.38 mm thick, 24 mm pocket spacing, 7.8 mm pocket depth

PCB washing Tested to MIL-STD-202 Method 215 plus an additional aqueous wash. See [Doc787_PCB_Washing.pdf](#).



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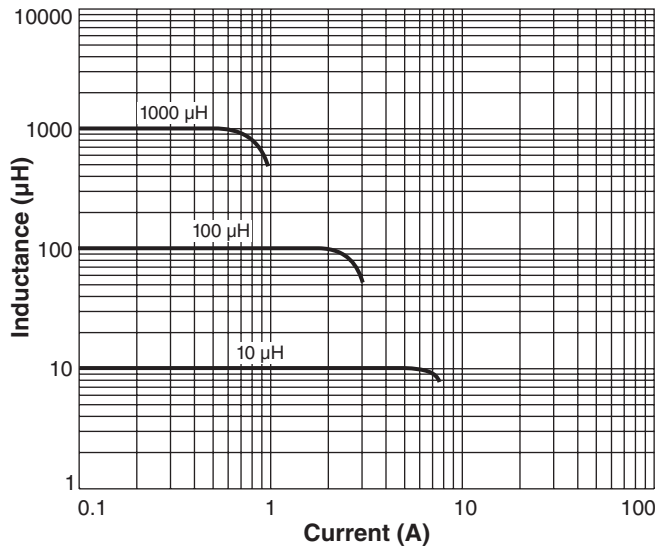
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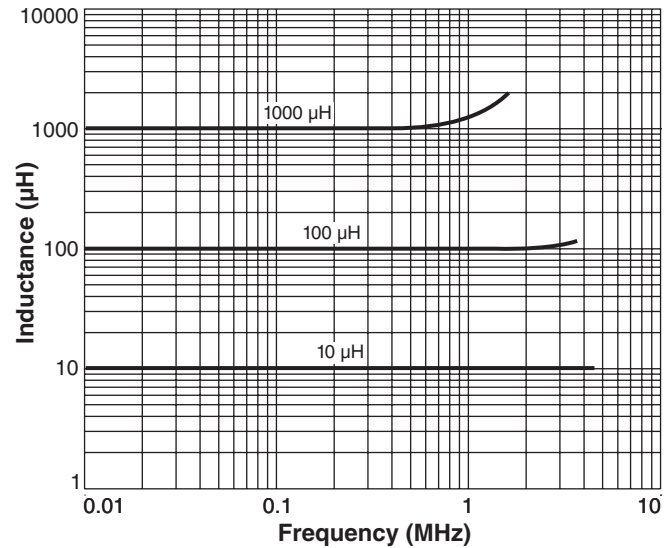


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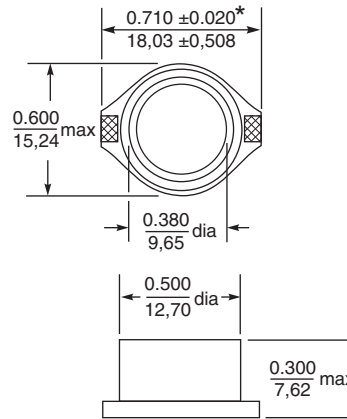
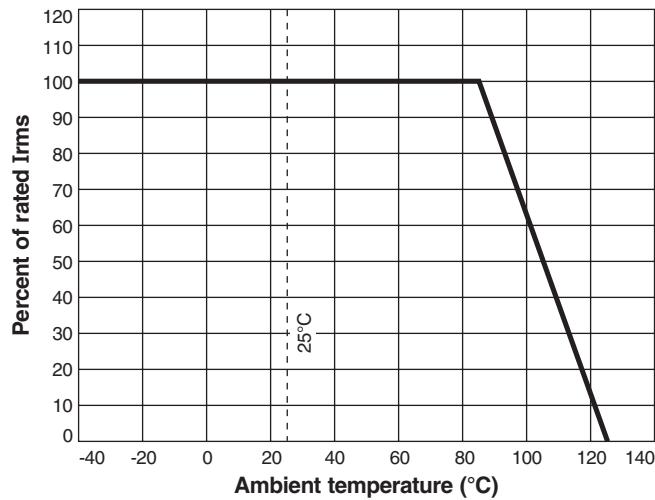
Typical L vs Current



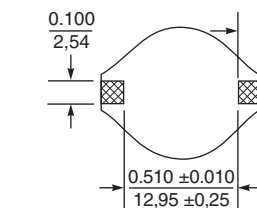
Typical L vs Frequency



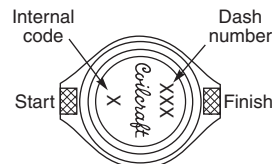
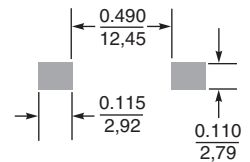
Current Derating



* 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.



Recommended Land Pattern



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

Dimensions are in inches/mm



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