



**THE DATASHEET OF  
MSS1278-394KLD**



# SMT Power Inductors – MSS1278



- 12.3 × 12.3 mm footprint; 8 mm high shielded inductors
- Low DCR and excellent current handling

**Designer's Kit C380** contains 3 each of all values.

**Core material** Ferrite

**Core and winding loss** See [www.coilcraft.com/coreloss](http://www.coilcraft.com/coreloss)

**Terminations** RoHS compliant matte tin over nickel over phos bronze. Other terminations available at additional cost.

**Weight:** 3.8 – 4.6 g

**Ambient temperature** –40°C to +85°C with (40°C rise) Irms current.

**Maximum part temperature** +125°C (ambient + temp rise). [Derating](#).

**Storage temperature** Component: –40°C to +125°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)

**Packaging** 500/13" reel; Plastic tape: 24 mm wide, 0.5 mm thick, 16 mm pocket spacing, 8.7 mm pocket depth

**PCB washing** Tested to MIL-STD-202 Method 215 plus an additional aqueous wash. See [Doc787\\_PCB\\_Washing.pdf](#).

| Part number <sup>1</sup> | Inductance <sup>2</sup><br>(µH) | DCR <sup>3</sup><br>(mOhms) |       | SRF<br>typ <sup>4</sup><br>(MHz) | Isat (A) <sup>5</sup> |             |             | Irms (A) <sup>6</sup> |              |
|--------------------------|---------------------------------|-----------------------------|-------|----------------------------------|-----------------------|-------------|-------------|-----------------------|--------------|
|                          |                                 | typ                         | max   |                                  | 10%<br>drop           | 20%<br>drop | 30%<br>drop | 20°C<br>rise          | 40°C<br>rise |
| MSS1278-142ML_           | 1.4 ±20%                        | 8.8                         | 9.8   | 80.0                             | 25.2                  | 28.6        | 30.6        | 7.00                  | 10.00        |
| MSS1278-472ML_           | 4.7 ±20%                        | 13.9                        | 15.5  | 30.0                             | 13.7                  | 15.2        | 15.9        | 4.30                  | 6.20         |
| MSS1278-562ML_           | 5.6 ±20%                        | 15.7                        | 17.5  | 24.0                             | 12.2                  | 13.7        | 14.6        | 4.30                  | 6.20         |
| MSS1278-682ML_           | 6.8 ±20%                        | 19.1                        | 21.3  | 21.0                             | 11.3                  | 12.7        | 13.7        | 4.20                  | 6.00         |
| MSS1278-822ML_           | 8.2 ±20%                        | 20.3                        | 22.6  | 20.0                             | 10.1                  | 11.5        | 12.3        | 4.10                  | 5.90         |
| MSS1278-103ML_           | 10 ±20%                         | 21.8                        | 24.3  | 17.0                             | 9.36                  | 10.6        | 11.2        | 4.00                  | 5.70         |
| MSS1278-123ML_           | 12 ±20%                         | 23.2                        | 25.8  | 15.0                             | 8.84                  | 10.0        | 10.7        | 3.70                  | 5.20         |
| MSS1278-153ML_           | 15 ±20%                         | 27.9                        | 31.0  | 13.0                             | 7.30                  | 8.36        | 9.00        | 3.50                  | 4.90         |
| MSS1278-183ML_           | 18 ±20%                         | 30.8                        | 34.3  | 12.0                             | 6.10                  | 7.10        | 7.74        | 3.00                  | 4.50         |
| MSS1278-223ML_           | 22 ±20%                         | 35.5                        | 39.5  | 11.0                             | 6.04                  | 6.78        | 7.24        | 2.90                  | 4.00         |
| MSS1278-273ML_           | 27 ±20%                         | 45.0                        | 50.0  | 10.0                             | 5.80                  | 6.56        | 7.02        | 2.60                  | 3.60         |
| MSS1278-333ML_           | 33 ±20%                         | 61.9                        | 68.8  | 9.5                              | 5.22                  | 5.90        | 6.30        | 2.30                  | 3.10         |
| MSS1278-393ML_           | 39 ±20%                         | 69.1                        | 76.8  | 8.5                              | 4.68                  | 5.42        | 5.80        | 2.10                  | 3.00         |
| MSS1278-473ML_           | 47 ±20%                         | 72.3                        | 80.4  | 7.5                              | 4.40                  | 5.02        | 5.32        | 2.00                  | 2.90         |
| MSS1278-563ML_           | 56 ±20%                         | 80.2                        | 89.2  | 7.0                              | 4.02                  | 4.60        | 4.90        | 1.90                  | 2.70         |
| MSS1278-683ML_           | 68 ±20%                         | 91.3                        | 101.5 | 6.5                              | 3.40                  | 3.86        | 4.26        | 1.80                  | 2.60         |
| MSS1278-823ML_           | 82 ±20%                         | 125.9                       | 139.9 | 5.0                              | 3.12                  | 3.58        | 3.80        | 1.60                  | 2.30         |
| MSS1278-104ML_           | 100 ±20%                        | 135.1                       | 150.2 | 4.5                              | 2.88                  | 3.28        | 3.52        | 1.50                  | 2.20         |
| MSS1278-124KL_           | 120 ±10%                        | 182.3                       | 202.6 | 4.3                              | 2.62                  | 3.00        | 3.24        | 1.40                  | 1.90         |
| MSS1278-154KL_           | 150 ±10%                        | 216.5                       | 240.6 | 4.1                              | 2.48                  | 2.86        | 3.02        | 1.30                  | 1.80         |
| MSS1278-184KL_           | 180 ±10%                        | 229.0                       | 254.5 | 4.0                              | 2.26                  | 2.58        | 2.74        | 1.20                  | 1.70         |
| MSS1278-224KL_           | 220 ±10%                        | 323.6                       | 359.6 | 3.4                              | 1.96                  | 2.22        | 2.36        | 1.00                  | 1.60         |
| MSS1278-274KL_           | 270 ±10%                        | 415.6                       | 461.8 | 3.1                              | 1.74                  | 2.04        | 2.18        | 0.90                  | 1.20         |
| MSS1278-334KL_           | 330 ±10%                        | 487.3                       | 541.5 | 2.9                              | 1.66                  | 1.86        | 2.00        | 0.80                  | 1.00         |
| MSS1278-394KL_           | 390 ±10%                        | 533.6                       | 592.9 | 2.7                              | 1.52                  | 1.72        | 1.88        | 0.75                  | 1.00         |
| MSS1278-474KL_           | 470 ±10%                        | 707.5                       | 786.2 | 2.2                              | 1.34                  | 1.54        | 1.64        | 0.66                  | 0.90         |
| MSS1278-564KL_           | 560 ±10%                        | 777.4                       | 863.8 | 2.0                              | 1.24                  | 1.42        | 1.50        | 0.60                  | 0.80         |
| MSS1278-684KL_           | 680 ±10%                        | 1045                        | 1162  | 1.7                              | 1.16                  | 1.28        | 1.38        | 0.55                  | 0.75         |
| MSS1278-824KL_           | 820 ±10%                        | 1166                        | 1296  | 1.4                              | 1.04                  | 1.16        | 1.26        | 0.50                  | 0.70         |
| MSS1278-105KL_           | 1000 ±10%                       | 1334                        | 1483  | 1.3                              | 0.97                  | 1.10        | 1.14        | 0.48                  | 0.68         |

1. Please specify **termination** and **packaging** codes:

**MSS1278-105KLD**

**Termination:** L = RoHS compliant matte tin 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 (500 parts per full reel). Quantities less than full reel available: in tape (not machine ready) or with leader and trailer (\$25 charge).

B = Less than full reel. In an effort to simplify our part numbering system, Coilcraft is eliminating the need for multiple packaging codes. When ordering, simply change the last letter of your part number from B to D.

2. Inductance tested at 100 kHz, 0.1 Vrms, 0 Adc using an Agilent/HP 4263B LCR meter or equivalent.
3. DCR measured on a micro-ohmmeter and a Coilcraft CCF858 test fixture.
4. SRF measured using an Agilent/HP 4191A or equivalent.
5. DC current at 25°C that causes the specified inductance drop from its value without current. [Click for temperature derating information.](#)
6. Current that causes the specified temperature rise from 25°C ambient. This information is for reference only and does not represent absolute maximum ratings. [Click for temperature derating information.](#)
7. Electrical specifications at 25°C. Refer to Doc 362 "Soldering Surface Mount Components" before soldering.



[www.coilcraft.com](http://www.coilcraft.com)

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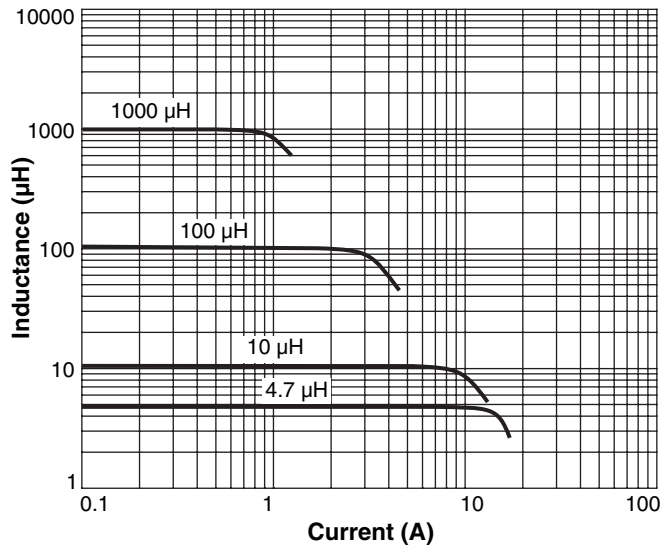
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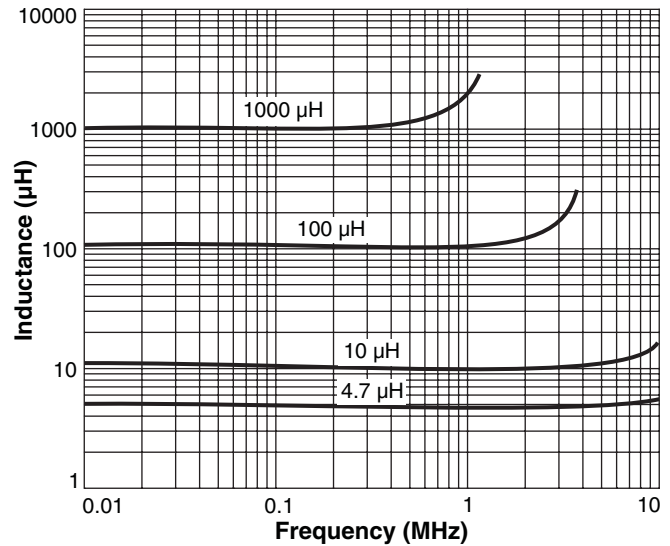


# SMT Power Inductors – MSS1278

## Typical L vs Current



## Typical L vs Frequency



Dimensions are in inches  
mm



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**SPICE models** ON OUR WEB SITE

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