



# Shielded Power Inductors MLC12xx/15xx



- Soft saturation makes them ideal for VRD/VRM applications
- Special materials eliminate all thermal aging issues.

**Core material** Iron

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

**Terminations** RoHS tin-silver over copper. Other terminations available at additional cost.

**Weight** MLC12xx 1.91 – 3.04 g; MLC15xx 2.73 – 5.12 g

**Ambient temperature** –40°C to +85°C with Irms current

**Maximum part temperature:** The part may be operated without damage as long its temperature (ambient + self-heating) does not exceed +125°C.

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

**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>±20% (µH) | DCR (mOhm) |       | SRF typ <sup>3</sup><br>(MHz) | Isat (A) <sup>4</sup> |          | Irms (A) <sup>5</sup> |           | Height<br>max (mm) |
|-----------------------------------------------------------------------------|--------------------------------------|------------|-------|-------------------------------|-----------------------|----------|-----------------------|-----------|--------------------|
|                                                                             |                                      | typ        | max   |                               | 10% drop              | 20% drop | 20°C rise             | 40°C rise |                    |
| 10.5 mm × 11.x mm body size (see next page for 13.2 mm × 14.x mm body size) |                                      |            |       |                               |                       |          |                       |           |                    |
| MLC1265-361ML_                                                              | 0.36                                 | 0.93       | 1.03  | 110                           | 26.9                  | 42.6     | 16.5                  | 22.7      | 6.5                |
| MLC1260-401ML_                                                              | 0.40                                 | 0.93       | 1.03  | 110                           | 21.0                  | 35.2     | 16.3                  | 21.9      | 6.1                |
| MLC1255-421ML_                                                              | 0.42                                 | 0.93       | 1.03  | 98                            | 21.1                  | 34.5     | 16.8                  | 24.1      | 5.6                |
| MLC1240-451ML_                                                              | 0.45                                 | 1.73       | 1.91  | 100                           | 16.5                  | 24.9     | 12.8                  | 19.8      | 4.1                |
| MLC1265-701ML_                                                              | 0.70                                 | 1.24       | 1.37  | 82                            | 16.4                  | 27.5     | 15.2                  | 21.0      | 6.5                |
| MLC1250-801ML_                                                              | 0.80                                 | 2.35       | 2.59  | 89                            | 13.3                  | 21.7     | 12.4                  | 17.3      | 5.1                |
| MLC1240-901ML_                                                              | 0.90                                 | 2.57       | 2.83  | 73                            | 13.9                  | 22.8     | 11.9                  | 16.3      | 4.1                |
| MLC1260-122ML_                                                              | 1.20                                 | 2.38       | 2.62  | 72                            | 14.0                  | 23.3     | 12.3                  | 17.6      | 6.1                |
| MLC1255-122ML_                                                              | 1.20                                 | 2.38       | 2.62  | 71                            | 14.1                  | 22.4     | 12.4                  | 17.5      | 5.6                |
| MLC1250-132ML_                                                              | 1.30                                 | 2.38       | 2.62  | 61                            | 10.8                  | 17.7     | 11.7                  | 16.5      | 5.3                |
| MLC1245-152ML_                                                              | 1.50                                 | 4.08       | 4.49  | 62                            | 10.7                  | 17.3     | 10.3                  | 14.2      | 4.6                |
| MLC1260-172ML_                                                              | 1.75                                 | 2.84       | 3.13  | 70                            | 12.1                  | 19.2     | 10.9                  | 15.3      | 6.1                |
| MLC1260-222ML_                                                              | 2.20                                 | 4.30       | 4.73  | 63                            | 10.8                  | 17.2     | 12.8                  | 17.2      | 6.1                |
| MLC1260-332ML_                                                              | 3.30                                 | 5.10       | 5.60  | 52                            | 8.80                  | 14.4     | 12.6                  | 16.7      | 6.1                |
| MLC1245-402ML_                                                              | 4.00                                 | 8.18       | 9.00  | 39                            | 7.42                  | 11.8     | 6.9                   | 9.8       | 4.8                |
| MLC1260-472ML_                                                              | 4.70                                 | 8.97       | 9.67  | 38                            | 8.20                  | 13.4     | 8.8                   | 12.2      | 6.1                |
| MLC1260-682ML_                                                              | 6.80                                 | 9.76       | 10.74 | 35                            | 5.80                  | 9.8      | 8.3                   | 11.7      | 6.1                |
| MLC1260-822ML_                                                              | 8.20                                 | 10.68      | 11.75 | 28                            | 5.20                  | 9.0      | 7.9                   | 10.8      | 6.1                |

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

**MLC1245-402MLC**

**Termination:** L = RoHS compliant tin-silver over copper.

E = Halogen free component. RoHS compliant tin-silver over copper. Special order: T = RoHS tin-silver-copper (95.5/4/0.5), or S = non-RoHS tin-lead (63/37)

**Packaging:** C = 7" machine-ready reel. EIA-481 embossed plastic tape. 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 C.

D = 13" machine-ready reel. EIA-481 embossed plastic tape. Factory order only, not stocked.

2. Inductance measured at 100 kHz, 0.1 Vrms, 0 Adc using a Coilcraft SMD-A fixture in an Agilent/HP 4284A LCR meter.

3. SRF measured using an Agilent/HP4291A impedance analyzer and a Coilcraft 16193 fixture.

4. DC current at 25°C that causes the specified inductance drop from its value without current. [Click for temperature derating information.](#)

5. 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.](#)

6. Electrical specifications at 25°C.

Refer to Doc 362 "Soldering Surface Mount Components" before soldering.



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Document 327-1 Revised 06/22/21

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# Shielded Power Inductors – MLC12xx/15xx Series

| Part number <sup>1</sup>                                                        | Inductance <sup>2</sup><br>±20% (µH) | DCR (mOhm) |       | SRF typ <sup>3</sup><br>(MHz) | Isat (A) <sup>4</sup> |          | Irms (A) <sup>5</sup> |           | Height<br>max (mm) |
|---------------------------------------------------------------------------------|--------------------------------------|------------|-------|-------------------------------|-----------------------|----------|-----------------------|-----------|--------------------|
|                                                                                 |                                      | typ        | max   |                               | 10% drop              | 20% drop | 20°C rise             | 40°C rise |                    |
| 13.2 mm × 14.x mm body size (see previous page for 10.5 mm × 11.x mm body size) |                                      |            |       |                               |                       |          |                       |           |                    |
| MLC1565-451ML_                                                                  | 0.45                                 | 0.864      | 0.951 | 100                           | 32.8                  | 54.0     | 18.0                  | 25.6      | 6.5                |
| MLC1565-501ML_                                                                  | 0.50                                 | 0.864      | 0.951 | 110                           | 21.3                  | 38.1     | 18.6                  | 26.9      | 6.5                |
| MLC1555-551ML_                                                                  | 0.55                                 | 1.34       | 1.48  | 90                            | 20.8                  | 35.7     | 16.1                  | 22.3      | 5.6                |
| MLC1565-801ML_                                                                  | 0.80                                 | 1.20       | 1.32  | 89                            | 27.4                  | 47.4     | 17.4                  | 24.6      | 6.5                |
| MLC1560-901ML_                                                                  | 0.90                                 | 1.72       | 1.90  | 76                            | 17.8                  | 28.7     | 14.6                  | 20.6      | 6.0                |
| MLC1538-102ML_                                                                  | 1.0                                  | 3.46       | 3.81  | 77                            | 13.6                  | 21.2     | 11.5                  | 16.7      | 3.9                |
| MLC1550-102ML_                                                                  | 1.0                                  | 1.72       | 1.90  | 73                            | 16.1                  | 27.3     | 13.9                  | 19.7      | 5.2                |
| MLC1565-142ML_                                                                  | 1.4                                  | 2.20       | 2.42  | 65                            | 18.9                  | 30.1     | 13.7                  | 19.9      | 6.5                |
| MLC1538-152ML_                                                                  | 1.5                                  | 4.36       | 4.80  | 50                            | 13.4                  | 21.0     | 10.6                  | 14.6      | 3.9                |
| MLC1565-202ML_                                                                  | 2.0                                  | 3.47       | 3.82  | 55                            | 15.2                  | 24.2     | 11.6                  | 16.3      | 6.5                |
| MLC1538-222ML_                                                                  | 2.2                                  | 5.90       | 6.50  | 46                            | 9.0                   | 15.0     | 7.5                   | 10.6      | 3.9                |
| MLC1550-252ML_                                                                  | 2.5                                  | 3.43       | 3.74  | 45                            | 10.9                  | 17.7     | 11.5                  | 15.8      | 5.2                |
| MLC1565-282ML_                                                                  | 2.8                                  | 4.10       | 4.51  | 43                            | 13.7                  | 22.3     | 10.7                  | 15.2      | 6.5                |
| MLC1555-302ML_                                                                  | 3.0                                  | 4.06       | 4.47  | 41                            | 11.1                  | 18.1     | 10.9                  | 15.6      | 5.6                |
| MLC1538-332ML_                                                                  | 3.3                                  | 8.80       | 9.68  | 40                            | 7.40                  | 12.2     | 5.95                  | 9.86      | 3.9                |
| MLC1565-372ML_                                                                  | 3.7                                  | 3.10       | 3.40  | 40                            | 8.13                  | 13.63    | 12.17                 | 16.58     | 6.5                |
| MLC1550-452ML_                                                                  | 4.5                                  | 7.13       | 7.85  | 34                            | 7.12                  | 11.8     | 8.43                  | 11.7      | 5.2                |
| MLC1565-472ML_                                                                  | 4.7                                  | 4.00       | 4.40  | 32                            | 6.23                  | 10.57    | 10.98                 | 15.57     | 6.5                |
| MLC1565-602ML_                                                                  | 6.0                                  | 5.50       | 6.05  | 26                            | 5.60                  | 9.57     | 9.27                  | 13.62     | 6.5                |
| MLC1565-732ML_                                                                  | 7.3                                  | 7.20       | 7.92  | 29                            | 5.10                  | 8.60     | 8.60                  | 12.01     | 6.5                |
| MLC1565-922ML_                                                                  | 9.2                                  | 9.70       | 10.60 | 26                            | 4.57                  | 7.80     | 7.19                  | 10.18     | 6.5                |
| MLC1565-113ML_                                                                  | 11.3                                 | 10.60      | 11.60 | 23                            | 4.07                  | 7.03     | 6.87                  | 9.46      | 6.5                |
| MLC1565-133ML_                                                                  | 13.0                                 | 12.57      | 13.75 | 21                            | 3.93                  | 6.70     | 6.12                  | 8.65      | 6.5                |
| MLC1565-153ML_                                                                  | 15.4                                 | 16.40      | 18.00 | 21                            | 3.43                  | 5.77     | 5.63                  | 7.75      | 6.5                |

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

**MLC1565-153MLC**

**Termination:** L = RoHS compliant tin-silver over copper.

E = Halogen free component. RoHS compliant tin-silver over copper. Special order: T = RoHS tin-silver-copper (95.5/4/0.5), or S = non-RoHS tin-lead (63/37)

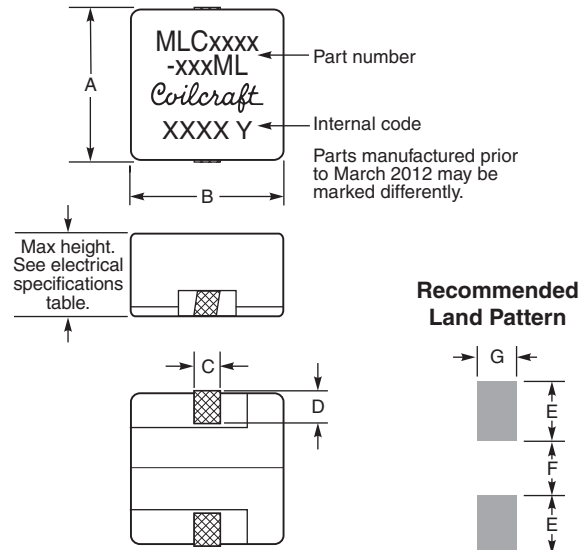
**Packaging:** C = 7" machine-ready reel. EIA-481 embossed plastic tape. Quantities less than full reel available: in tape (not machine ready) or with leader and trailer (\$25 charge).

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 C.

D = 13" machine-ready reel. EIA-481 embossed plastic tape. Factory order only, not stocked.

- Inductance measured at 100 kHz, 0.1 Vrms, 0 Adc using a Coilcraft SMD-A fixture in an Agilent/HP 4284A LCR meter.
- SRF measured using an Agilent/HP4291A impedance analyzer and a Coilcraft 16193 fixture.
- DC current at which the inductance drops the specified amount from its value without current.
- Current that causes the specified temperature rise from 25°C ambient.
- Electrical specifications at 25°C.

Refer to Doc 362 "Soldering Surface Mount Components" before soldering.



## Tape and Reel (24 mm wide plastic tape)

|         | Quantity |          | Tape thickness<br>(mm) | Pocket<br>spacing (mm) | Pocket<br>depth (mm) |
|---------|----------|----------|------------------------|------------------------|----------------------|
|         | 7" reel  | 13" reel |                        |                        |                      |
| MLC1240 | 250      | 900      | 0.35                   | 16                     | 4.45                 |
| MLC1245 | 200      | 800      | 0.35                   | 16                     | 4.95                 |
| MLC1250 | 200      | 700      | 0.40                   | 16                     | 5.45                 |
| MLC1255 | 200      | 700      | 0.40                   | 16                     | 5.95                 |
| MLC1260 | 175      | 600      | 0.40                   | 16                     | 6.50                 |
| MLC1265 | 150      | 600      | 0.40                   | 16                     | 6.70                 |
| MLC1538 | 200      | 800      | 0.35                   | 20                     | 4.00                 |
| MLC1550 | 150      | 600      | 0.40                   | 20                     | 5.45                 |
| MLC1555 | 125      | 500      | 0.40                   | 20                     | 5.95                 |
| MLC1560 | 125      | 500      | 0.40                   | 20                     | 6.20                 |
| MLC1565 | 125      | 500      | 0.40                   | 20                     | 6.50                 |

| Body Size | A max | B max | C   | D   | E   | F   | G   |
|-----------|-------|-------|-----|-----|-----|-----|-----|
| 1240      | 11.2  | 10.5  | 1.8 | 2.3 | 4.0 | 4.0 | 2.7 |
| 1245      | 11.2  | 10.5  | 1.8 | 2.3 | 4.0 | 4.0 | 2.7 |
| 1250      | 11.2  | 10.5  | 1.8 | 2.3 | 4.0 | 4.0 | 2.7 |
| 1255      | 11.4  | 10.5  | 1.8 | 2.3 | 4.0 | 4.0 | 2.7 |
| 1260      | 11.4  | 10.5  | 1.8 | 2.3 | 4.0 | 4.0 | 2.7 |
| 1265      | 11.4  | 10.5  | 1.8 | 2.3 | 4.0 | 4.0 | 2.7 |
| 1538      | 13.8  | 13.2  | 2.4 | 3.0 | 5.0 | 5.4 | 3.4 |
| 1550      | 13.8  | 13.2  | 2.4 | 3.0 | 5.0 | 5.4 | 3.4 |
| 1555      | 13.8  | 13.2  | 2.4 | 3.0 | 5.0 | 5.4 | 3.4 |
| 1560      | 13.8  | 13.2  | 2.4 | 3.0 | 5.0 | 5.4 | 3.4 |
| 1565      | 14.0  | 13.2  | 2.4 | 3.0 | 5.0 | 5.4 | 3.4 |

All dimensions are in mm.



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Document 327-2 Revised 06/22/21

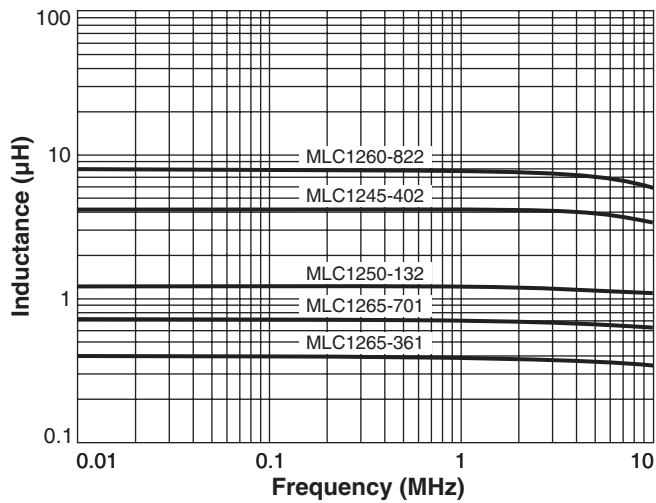
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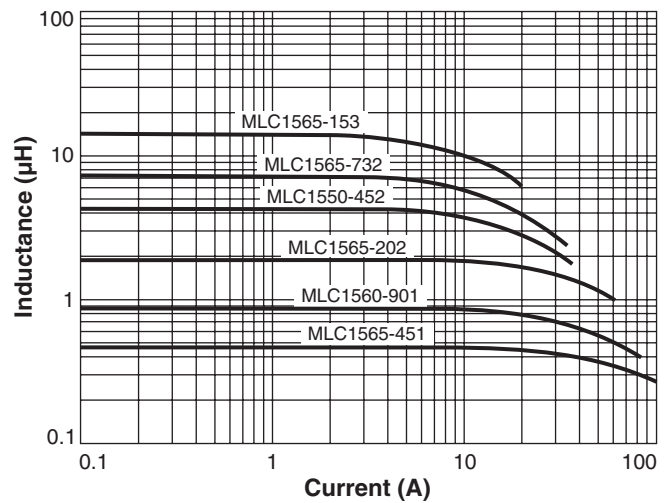
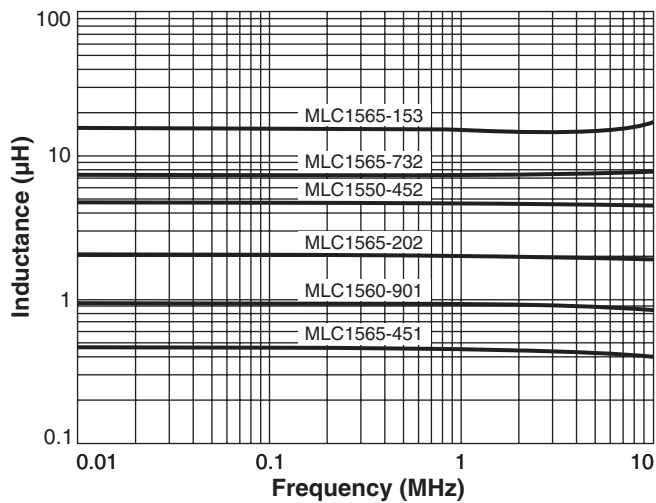
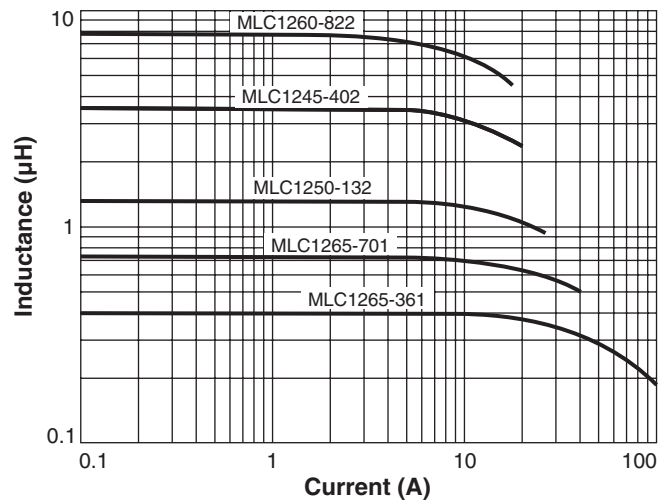


# Shielded Power Inductors – MLC12xx/15xx Series

## Typical L vs Frequency



## Typical L vs Current



Inductance vs current is unaffected by part temperature up to 125°C.