



# Shielded Power Inductors – MLC75xx



- Soft saturation makes them ideal for VRD/VRM applications
- Special materials eliminate all thermal aging issues.
- AEC-Q200 Grade 3 (–40°C to +85°C)
- Saturation current up to 59 Amps

**Core material** Iron

**Weight** 0.60 – 0.80 g

**Environmental** RoHS compliant, halogen free

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

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

**Maximum part temperature** +125°C (ambient + temperature rise)

**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)

**Failures in Time (FIT) / Mean Time Between Failures (MTBF)**

38 per billion hours / 26,315,789 hours, calculated per Telcordia SR-332

**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 (mOhm) |      | SRF typ <sup>3</sup><br>(MHz) | Isat (A) <sup>4</sup> |          |          | Irms (A) <sup>5</sup> |           |
|--------------------------|---------------------------------|------------|------|-------------------------------|-----------------------|----------|----------|-----------------------|-----------|
|                          |                                 | typ        | max  |                               | 10% drop              | 20% drop | 30% drop | 20°C rise             | 40°C rise |
| MLC7532-101NE_           | 0.10±30%                        | 1.20       | 1.40 | 140                           | 21.0                  | 38.0     | 56.2     | 24.9                  | 32.5      |
| MLC7532-221ME_           | 0.22±20%                        | 2.50       | 2.80 | 128                           | 22.9                  | 41.0     | 59.2     | 20.2                  | 26.5      |
| MLC7542-311ME_           | 0.31±20%                        | 2.30       | 2.70 | 114                           | 12.2                  | 21.9     | 29.8     | 20.0                  | 23.8      |
| MLC7542-601ME_           | 0.60±20%                        | 2.95       | 3.80 | 96                            | 9.9                   | 15.7     | 20.2     | 16.7                  | 21.9      |
| MLC7540-102ME_           | 1.00±20%                        | 4.42       | 5.00 | 81                            | 7.4                   | 11.3     | 15.7     | 13.8                  | 18.2      |
| MLC7540-142ME_           | 1.40±20%                        | 7.10       | 8.00 | 76                            | 6.3                   | 11.0     | 14.3     | 10.6                  | 14.1      |
| MLC7540-222ME_           | 2.17±20%                        | 11.7       | 13.0 | 65                            | 5.3                   | 8.3      | 11.4     | 8.5                   | 11.3      |

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

**MLC7540-222MEC**

**Termination:** E = RoHS 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.

B = Less than full reel. In tape, but not machine ready. To have a leader and trailer added (\$25 charge), use code letter C instead.

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 which the inductance drops the specified amount from its value without current.

5. Current that causes the specified temperature rise from 25°C ambient.

6. Electrical specifications at 25°C.

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



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

**US** +1-847-639-6400 [sales@coilcraft.com](mailto:sales@coilcraft.com)

**UK** +44-1236-730595 [sales@coilcraft-europe.com](mailto:sales@coilcraft-europe.com)

**Taiwan** +886-2-2264 3646 [sales@coilcraft.com.tw](mailto:sales@coilcraft.com.tw)

**China** +86-21-6218 8074 [sales@coilcraft.com.cn](mailto:sales@coilcraft.com.cn)

**Singapore** + 65-6484 8412 [sales@coilcraft.com.sg](mailto:sales@coilcraft.com.sg)

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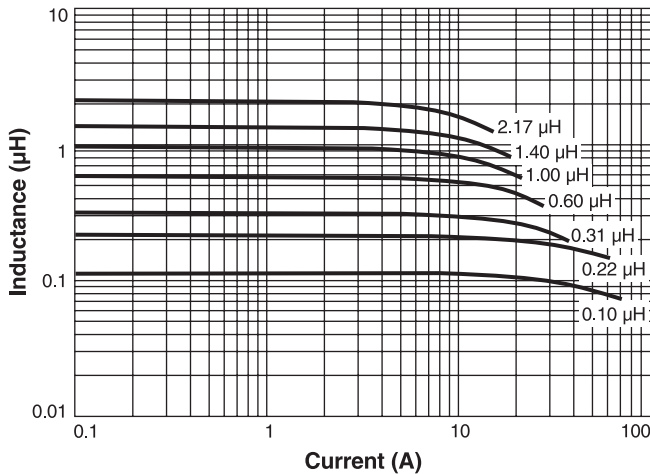
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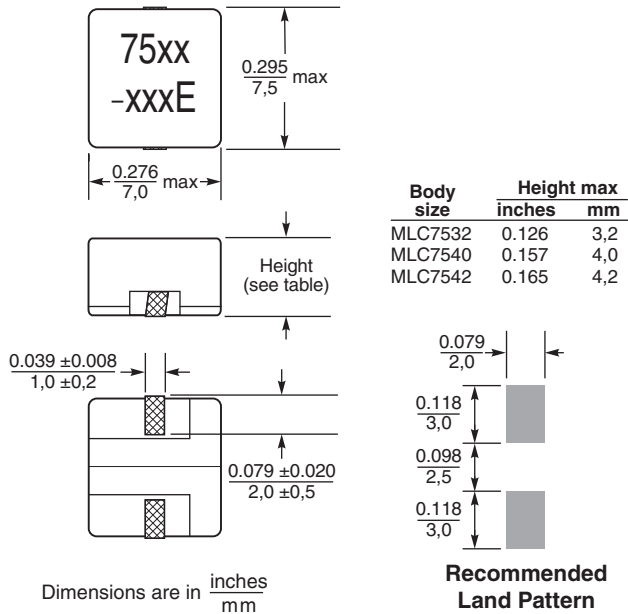
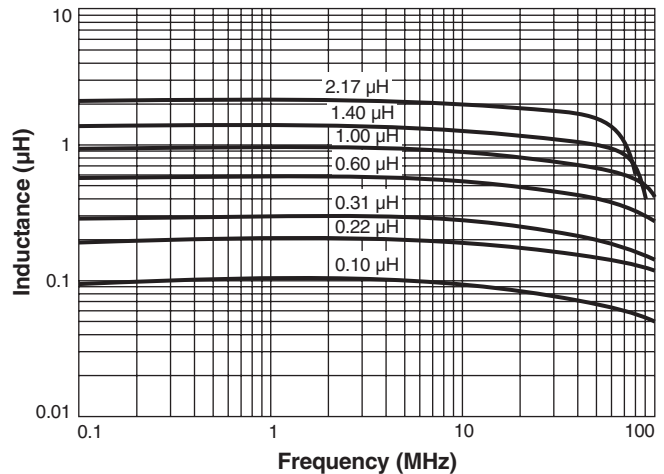


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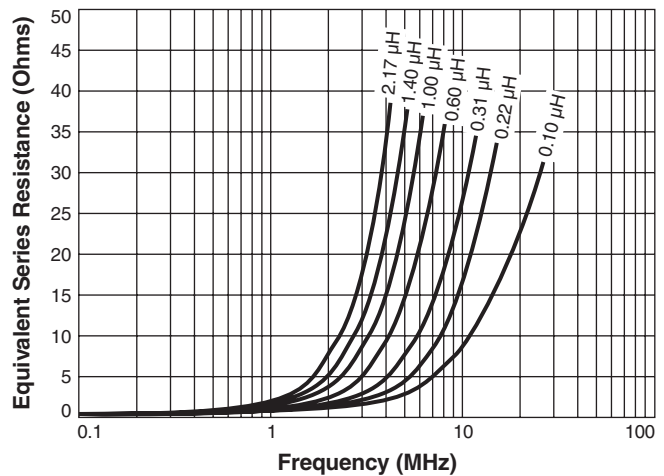
## L vs Current



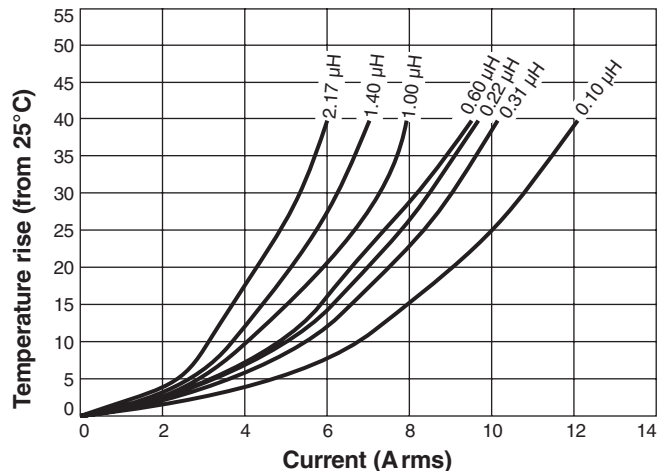
## L vs Frequency



## ESR vs Frequency



## Temperature Rise vs Current



### Packaging

**MLC7532** 350/7" reel; 1500/13" reel Plastic tape: 16 mm wide, 0.35 mm thick, 12 mm pocket spacing, 3.3 mm pocket depth

**MLC7540** 250/7" reel; 1200/13" reel Plastic tape: 16 mm wide, 0.35 mm thick, 12 mm pocket spacing, 4.2 mm pocket depth

**MLC7542** 250/7" reel; 1200/13" reel Plastic tape: 16 mm wide, 0.35 mm thick, 12 mm pocket spacing, 4.2 mm pocket depth