

Power Inductors – XPL2010 Series



- Ultra-miniature, magnetically shielded power inductors
- AEC-Q200 Grade 1 qualified (–40°C to +125°C ambient)
- Very low DCR, excellent current handling, soft saturation

Designer's Kit C428 contains 5 each of all values

Core material Composite

Core and winding loss See www.coilcraft.com/coreloss

Weight 20 mg

Environmental RoHS compliant, halogen free

Terminations RoHS compliant tin-silver-copper (96.5/3/0.5) over tin over nickel over silver-platinum. Other terminations available at additional cost.

Ambient temperature –40°C to +125°C with Irms current, +125°C to +165°C with derated current

Storage temperature Component: –40°C to +165°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 2000/7" reel; 7500/13" reel Plastic tape: 8 mm wide, 0.23 mm thick, 4 mm pocket spacing, 1.19 mm pocket depth

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

| Part number ¹ | Inductance ² ±20% (µH) | DCR (Ohms) ³ | | SRF typ ⁴ (MHz) | Isat (A) ⁵ | | | Irms (A) ⁶ | |
|--------------------------|--------------------------------------|-------------------------|-------|-------------------------------|-----------------------|----------|----------|-----------------------|-----------|
| | | nom | max | | 10% drop | 20% drop | 30% drop | 20°C rise | 40°C rise |
| XPL2010-201ML | 0.20 | 0.024 | 0.027 | 408 | 2.80 | 3.45 | 3.75 | 2.2 | 2.8 |
| XPL2010-331ML | 0.33 | 0.031 | 0.035 | 309 | 1.90 | 2.75 | 3.05 | 1.9 | 2.6 |
| XPL2010-501ML | 0.50 | 0.040 | 0.045 | 218 | 1.80 | 2.35 | 2.64 | 1.7 | 2.3 |
| XPL2010-681ML | 0.68 | 0.057 | 0.063 | 152 | 1.55 | 1.95 | 2.19 | 1.5 | 2.1 |
| XPL2010-821ML | 0.82 | 0.068 | 0.075 | 132 | 1.25 | 1.65 | 1.90 | 1.3 | 1.7 |
| XPL2010-102ML | 1.0 | 0.081 | 0.089 | 117 | 1.20 | 1.60 | 1.80 | 1.1 | 1.6 |
| XPL2010-152ML | 1.5 | 0.105 | 0.116 | 80 | 0.950 | 1.30 | 1.50 | 1.0 | 1.4 |
| XPL2010-222ML | 2.2 | 0.156 | 0.173 | 75 | 0.940 | 1.20 | 1.35 | 0.96 | 1.3 |
| XPL2010-332ML | 3.3 | 0.207 | 0.228 | 55 | 0.700 | 0.925 | 1.05 | 0.79 | 1.1 |
| XPL2010-472ML | 4.7 | 0.336 | 0.370 | 40 | 0.580 | 0.750 | 0.845 | 0.74 | 1.0 |
| XPL2010-682ML | 6.8 | 0.421 | 0.463 | 33 | 0.450 | 0.620 | 0.725 | 0.64 | 0.87 |
| XPL2010-822ML | 8.2 | 0.457 | 0.503 | 30 | 0.440 | 0.600 | 0.670 | 0.55 | 0.75 |
| XPL2010-103ML | 10 | 0.555 | 0.611 | 28 | 0.390 | 0.525 | 0.610 | 0.49 | 0.66 |
| XPL2010-183ML | 18 | 1.47 | 1.60 | 31 | 0.500 | 0.560 | 0.590 | 0.32 | 0.43 |
| XPL2010-223ML | 22 | 1.89 | 2.00 | 25 | 0.410 | 0.470 | 0.510 | 0.28 | 0.39 |
| XPL2010-333ML | 33 | 2.59 | 2.85 | 20 | 0.330 | 0.380 | 0.410 | 0.23 | 0.31 |
| XPL2010-473ML | 47 | 3.96 | 4.25 | 17 | 0.270 | 0.300 | 0.320 | 0.18 | 0.25 |
| XPL2010-563ML | 56 | 4.48 | 4.82 | 15 | 0.240 | 0.280 | 0.300 | 0.17 | 0.24 |
| XPL2010-683ML | 68 | 6.14 | 6.56 | 13 | 0.210 | 0.250 | 0.280 | 0.15 | 0.20 |
| XPL2010-823ML | 82 | 6.45 | 6.90 | 12 | 0.200 | 0.240 | 0.260 | 0.15 | 0.20 |
| XPL2010-104ML | 100 | 8.48 | 9.27 | 11 | 0.180 | 0.214 | 0.232 | 0.13 | 0.17 |
| XPL2010-224ML | 220 | 19.2 | 21.1 | 7.1 | 0.122 | 0.143 | 0.161 | 0.086 | 0.116 |

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

XPL2010-103MLC

Termination: L = RoHS compliant tin-silver-copper (96.5/3/0.5) over tin over nickel over silver.

Special order: S = non-RoHS tin-lead (63/37).

Packaging: C = 7" machine-ready reel. EIA-481 embossed plastic tape (2000 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 C instead.

D = 13" machine-ready reel. EIA-481 embossed plastic tape. Factory order only, not stocked (7500 parts per full reel).

2. Inductance tested at 100 kHz, 0.1 Vrms, 0 Adc.

3. DCR measured on a micro-ohmmeter.

4. SRF measured using Agilent/HP 4395A or equivalent.

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

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

7. Electrical specifications at 25°C.

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



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Document 646-1 Revised 09/24/13

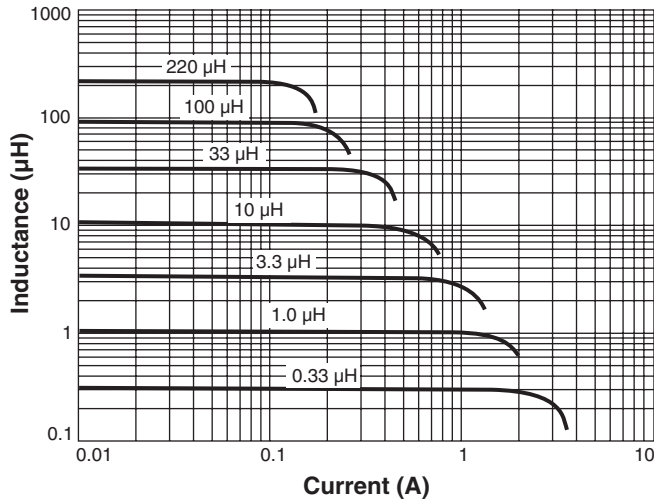
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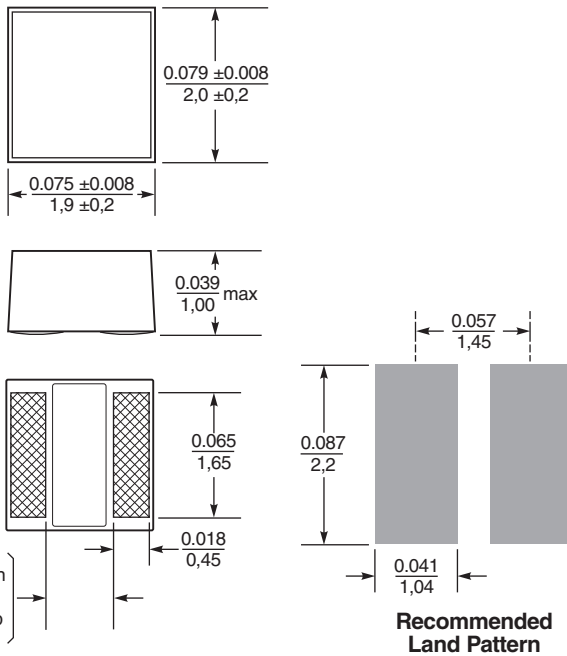
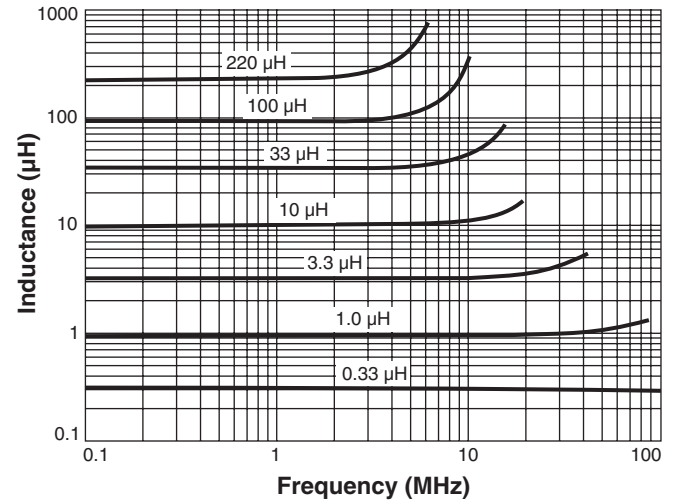


SMT Power Inductors – XPL2010 Series

Typical L vs Current

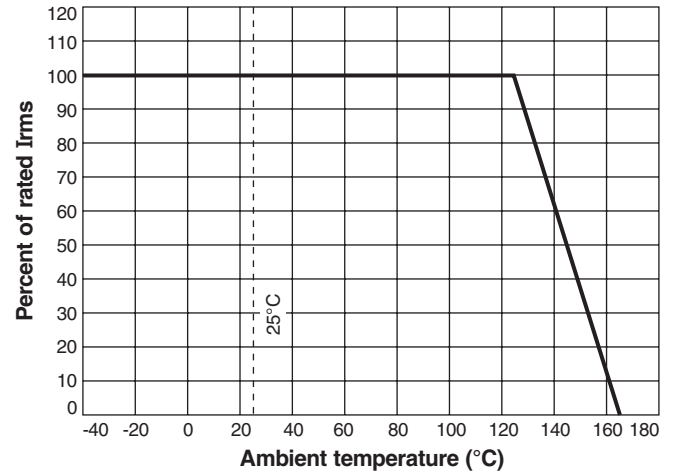


Typical L vs Frequency



Dimensions are in $\frac{\text{inches}}{\text{mm}}$

Typical Irms Derating



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