

Power Inductor for Critical Applications ST511PNA



- 6.1 × 6.1 mm footprint; 3.2 mm high shielded inductors
- Low DCR and excellent current handling

Core material Ferrite

Terminations Gold over nickel over phos bronze. Other terminations available at additional cost.

Weight 0.33 – 0.38 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: –55°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 500/7" reel; Plastic tape: 16 mm wide, 0.3 mm thick, 12 mm pocket spacing, 3.1 mm pocket depth

| Part number ¹ | Inductance ² ±20% (µH) | DCR max (Ohms) | SRF typ ³ (MHz) | Isat (A) ⁴ | | | Irms (A) ⁵ | |
|--------------------------|--------------------------------------|-------------------|-------------------------------|-----------------------|----------|----------|-----------------------|-----------|
| | | | | 10% drop | 20% drop | 30% drop | 20°C rise | 40°C rise |
| ST511PNA472MLZ | 4.7 | 0.056 | 65.0 | 2.18 | 2.60 | 2.84 | 2.30 | 3.10 |
| ST511PNA562MLZ | 5.6 | 0.060 | 60.0 | 2.10 | 2.50 | 2.74 | 2.20 | 2.95 |
| ST511PNA682MLZ | 6.8 | 0.065 | 47.0 | 1.80 | 2.12 | 2.30 | 2.10 | 2.80 |
| ST511PNA822MLZ | 8.2 | 0.070 | 45.0 | 1.78 | 2.06 | 2.22 | 2.00 | 2.65 |
| ST511PNA103MLZ | 10 | 0.085 | 39.0 | 1.36 | 1.64 | 1.84 | 1.90 | 2.50 |
| ST511PNA123MLZ | 12 | 0.110 | 33.0 | 1.30 | 1.54 | 1.70 | 1.75 | 2.35 |
| ST511PNA153MLZ | 15 | 0.135 | 27.0 | 1.16 | 1.42 | 1.56 | 1.65 | 2.20 |
| ST511PNA183MLZ | 18 | 0.160 | 24.0 | 1.04 | 1.22 | 1.36 | 1.55 | 2.05 |
| ST511PNA223MLZ | 22 | 0.190 | 21.0 | 0.97 | 1.12 | 1.22 | 1.45 | 1.90 |
| ST511PNA273MLZ | 27 | 0.235 | 19.0 | 0.91 | 1.08 | 1.18 | 1.30 | 1.75 |
| ST511PNA333MLZ | 33 | 0.310 | 18.0 | 0.81 | 0.96 | 1.10 | 1.20 | 1.60 |
| ST511PNA393MLZ | 39 | 0.345 | 17.0 | 0.79 | 0.92 | 0.99 | 1.10 | 1.45 |
| ST511PNA473MLZ | 47 | 0.380 | 16.0 | 0.72 | 0.86 | 0.93 | 0.95 | 1.30 |
| ST511PNA563MLZ | 56 | 0.430 | 14.0 | 0.61 | 0.72 | 0.79 | 0.85 | 1.15 |
| ST511PNA683MLZ | 68 | 0.580 | 12.0 | 0.55 | 0.63 | 0.69 | 0.73 | 1.00 |
| ST511PNA823MLZ | 82 | 0.640 | 10.0 | 0.53 | 0.62 | 0.67 | 0.60 | 0.85 |
| ST511PNA104MLZ | 100 | 0.820 | 9.0 | 0.45 | 0.54 | 0.59 | 0.50 | 0.69 |

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

ST511PNA104MLZ

Termination: L = Gold over nickel over phos bronze.

Special order:

T = Tin-silver-copper (95.5/4/0.5) or

S = Tin-lead (63/37).

Screening: Z = Unscreened

H = Group A screening per Coilcraft CP-SA-10001

G = Coilcraft CP-SA-10001 Group A (SLDC Option A)

D = Coilcraft CP-SA-10001 Group A (SLDC Option B)

All screening performed to the document's latest revision

Custom screening also available

2. Inductance tested at 100 kHz, 0.1 Vrms, 0 Adc using an Agilent/HP 4263B LCR meter or equivalent.

3. SRF measured using Agilent/HP 4191A or equivalent.

4. DC current at 25°C that causes the specified inductance drop from its value without current.

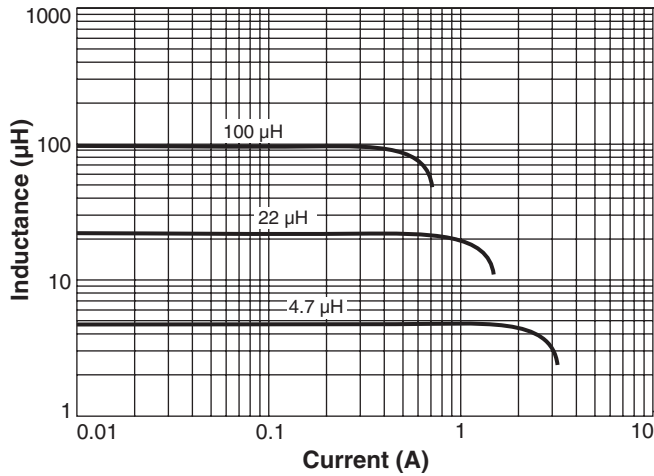
5. Current that causes the specified temperature rise from 25°C ambient. This information is for reference only and does not represent absolute maximum ratings.

6. Electrical specifications at 25°C.

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

Power Inductors – ST511PNA

Typical L vs Current



Typical L vs Frequency

