

High Current, Power Inductors

LPCA-1770-XXX-M Power Choke



Description

- Halogen Free
- 125°C maximum total temperature operation
- 17.45x17.15x 7.0mm maximum surface mount package
- Powder iron core material
- Magnetically shielded, low EMI
- High current carrying capacity, Low core losses
- Frequency range up to 1MHz
- RoHS compliant

Applications

- Voltage Regulator Module (VRM)
- Multi-phase regulators
- Point-of-load modules
- Smart phone POL modules
- SSD modules
- Notebook regulators
- Battery power systems
- Graphics cards
- Data networking and storage systems

Environmental Data

- Storage temperature range: -55℃ to +125 ℃
- Operating temperature range: -55℃ to +125℃ (ambient plus self-temperature rise)
- Solder reflow temperature: J-STD-020D compliant

| Description | | | | | | | | | | | | |
|--------------------|---|---|---|------------------|---|---|---|----------------------|---|---|------|--|
| LPCA-1770-1R0-M | | | | 1.0μH | | | | ±20 % | | | | |
| Model | | | | Inductance Value | | | | Inductance Tolerance | | | | |
| Global Part Number | | | | | | | | | | | | |
| L | P | C | A | 1 | 7 | 7 | 0 | 1 | R | 0 | M | |
| Product Series | | | | Dimensions | | | | Inductance Value | | | Tol. | |

| Part No. | Inductance | DC Resistance | | Heating Rating Current | Saturation Current |
|-----------------|----------------------------|---------------|-------|------------------------|--------------------|
| | L0 (μH) inductance@(0A) | DCR (mΩ) | | Idc (A) | Isat (A) |
| | ±20 %, 100 kHz, 1V | TYP. | MAX. | TYP. | TYP. |
| LPCA-1770-1R0-M | 1.0 | 1.3 | 1.5 | 42.0 | 62.0 |
| LPCA-1770-2R2-M | 2.2 | 2.15 | 2.5 | 29.0 | 34.0 |
| LPCA-1770-3R3-M | 3.3 | 2.79 | 2.93 | 24.5 | 27.0 |
| LPCA-1770-4R7-M | 4.7 | 4.12 | 4.72 | 16.0 | 24.0 |
| LPCA-1770-6R8-M | 6.8 | 6.55 | 7.55 | 14.0 | 22.0 |
| LPCA-1770-8R2-M | 8.2 | 8.1 | 8.7 | 12.5 | 20.0 |
| LPCA-1770-100-M | 10.0 | 9.3 | 10.0 | 11.0 | 18.0 |
| LPCA-1770-150-M | 15.0 | 16.5 | 17.5 | 10.0 | 14.5 |
| LPCA-1770-200-M | 20.0 | 19.5 | 21.9 | 9.5 | 12.0 |
| LPCA-1770-220-M | 22.0 | 20.5 | 23.0 | 8.0 | 11.0 |
| LPCA-1770-330-M | 33.0 | 35.1 | 37.0 | 7.0 | 10.0 |
| LPCA-1770-470-M | 47.0 | 41.0 | 47.0 | 6.0 | 7.5 |
| LPCA-1770-680-M | 68.0 | 74.0 | 85.0 | 5.5 | 6.5 |
| LPCA-1770-101-M | 100.0 | 120.0 | 130.0 | 4.0 | 4.5 |

Notes

1. All test data is referenced to 25 °C ambient
2. Operating temperature range - 55 °C to + 125 °C
3. Idc(A):DC current (A) that will cause an approximate ΔT of 40 °C (reference ambient temperature is 25 °C)
4. Isat(A):DC current (A) that will cause L0 to drop approximately 30 %
5. The part temperature (ambient + temp rise) should not exceed 125 °C under worst case operating conditions. Circuit design, component placement, PWB trace size and thickness, airflow and other cooling provisions all affect the part temperature. Part temperature should be verified in the end application.

Performance Graphs

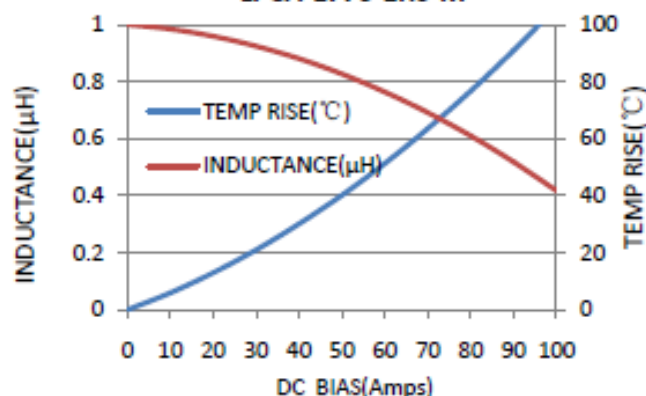
Test Instruments

Wayne kerr 3260B/G LCR Meter
Wayne kerr 3265B Bias Current Source

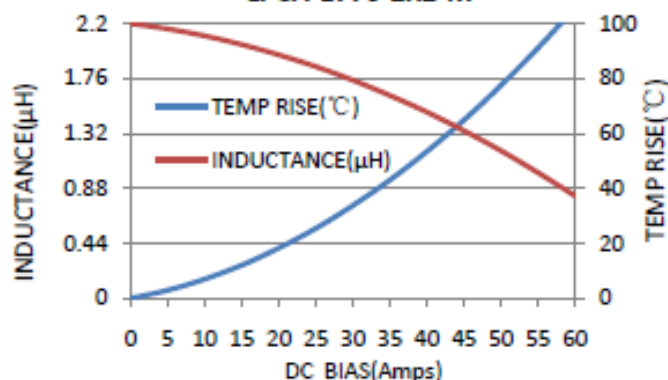
Test Condition

Temperature: $26 \pm 3^{\circ}\text{C}$
Humidity: < 70% RH
Frequency: 100 KHz, 1.0V

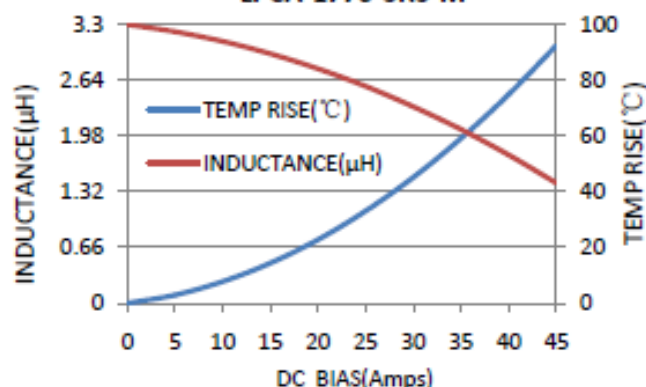
LPCA-1770-1R0-M



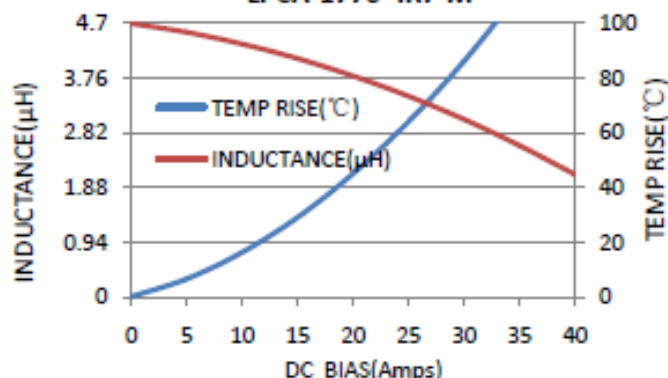
LPCA-1770-2R2-M



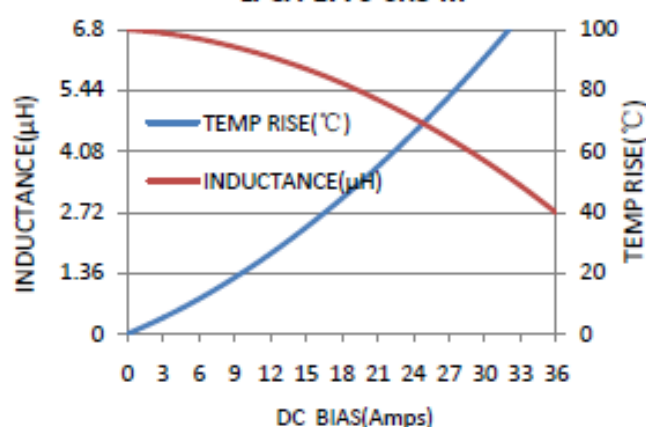
LPCA-1770-3R3-M



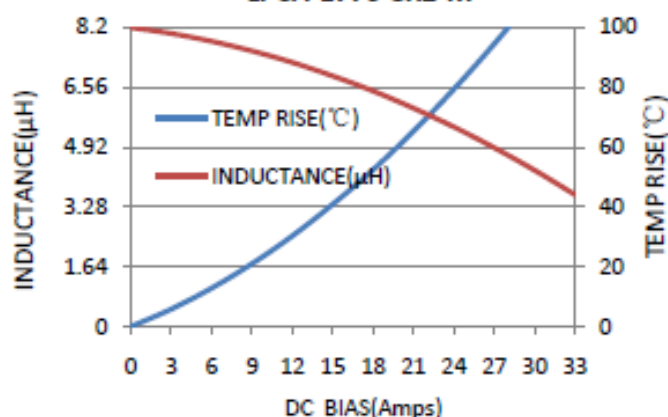
LPCA-1770-4R7-M

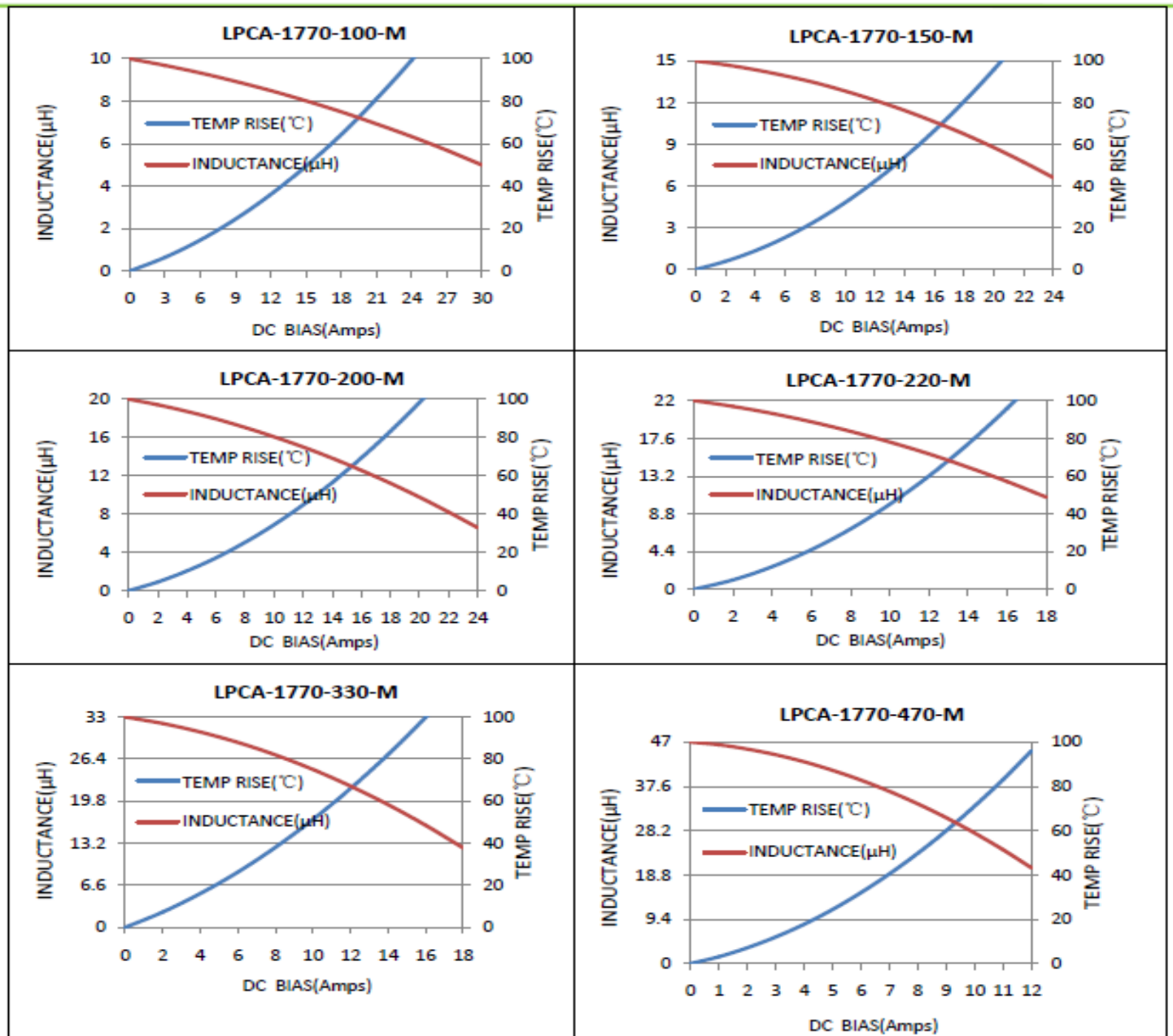


LPCA-1770-6R8-M

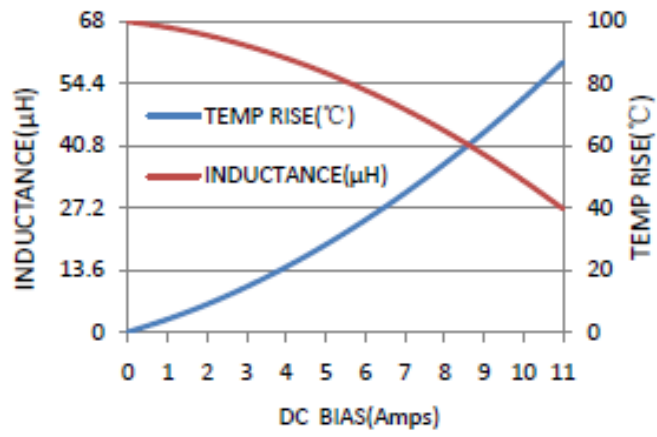


LPCA-1770-8R2-M

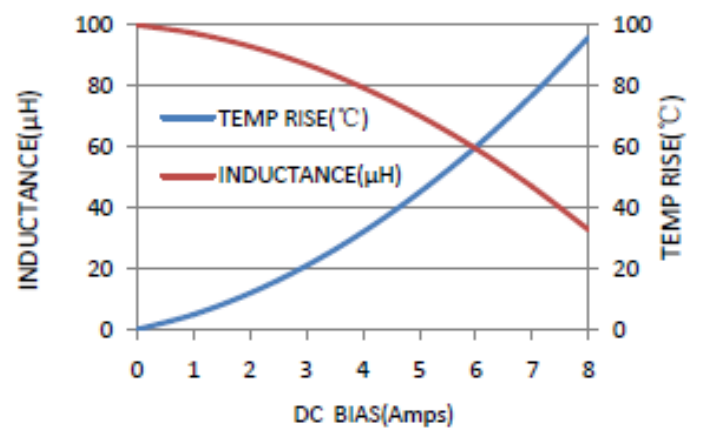




LPCA-1770-680-M



LPCA-1770-101-M



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