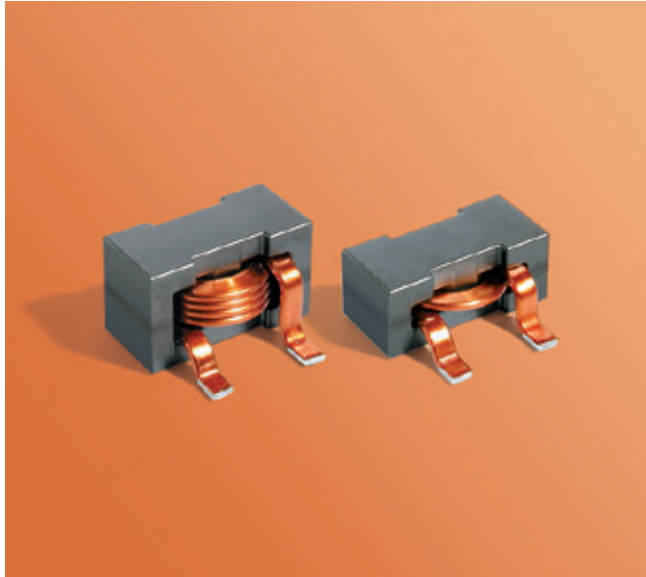


Outgassing Compliant Power Inductors AE63xPTA AE64xPTA



- High temperature materials allow operation in ambient temperatures up to 155°C
- Passes NASA low outgassing specifications
- Tin-lead (Sn-Pb) terminations for the best possible board adhesion
- Designed for high current power supply applications
- Flat wire windings provide exceptionally low DCR
- Isat ratings as high as 100 A

Core material Ferrite

Terminations Tin-lead over copper.

Ambient temperature -55°C to +105°C with Irms current

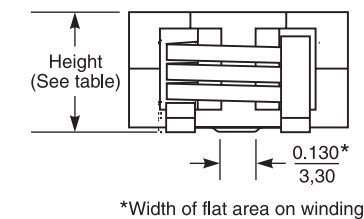
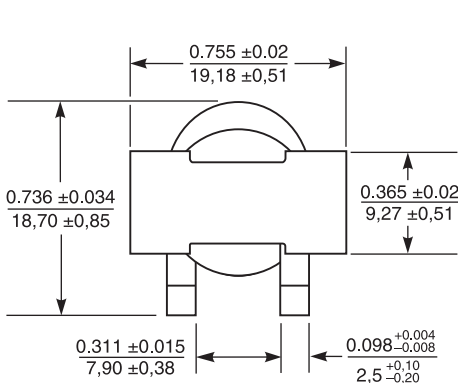
Maximum part temperature +155°C (ambient + temp rise)

Storage temperature Component: -55°C to +155°C.

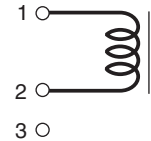
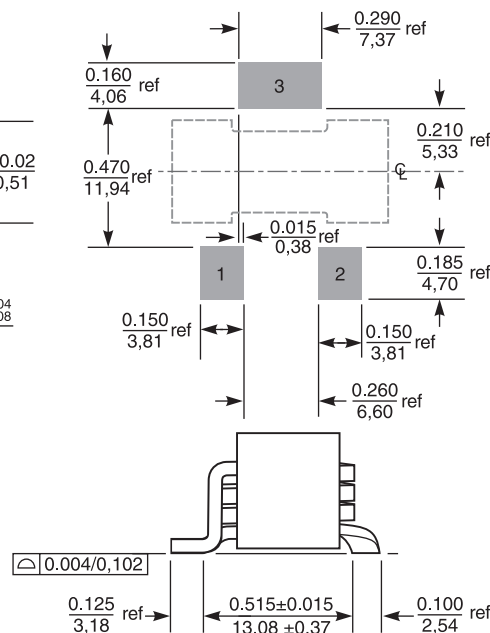
Tape and reel packaging: -55°C to +80°C

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)



Suggested Land Pattern



Caution:

Terminal 3 is provided for mounting stability only. This terminal is connected to the winding of the inductor and must not be connected to ground or any circuitry.

| | Maximum height | Weight |
|--------|----------------|----------------|
| 630PTA | 0.34 / 8,64 | 6.40 – 6.89 g |
| 632PTA | 0.37 / 9,40 | 7.10 – 8.30 g |
| 637PTA | 0.42 / 10,67 | 8.10 – 9.70 g |
| 641PTA | 0.47 / 11,94 | 9.10 – 10.8 g |
| 645PTA | 0.51 / 12,95 | 9.50 – 12.3 g |
| 648PTA | 0.55 / 13,97 | 10.00 – 13.3 g |

Dimensions are in inches/mm

Enhanced crush-resistant packaging

- AE630PTA 200 per 13" reel; Plastic tape: 44 mm wide, 0.4 mm thick, 4 mm pocket spacing, 9.25 pocket depth
- AE632PTA 200 per 13" reel; Plastic tape: 44 mm wide, 0.4 mm thick, 4 mm pocket spacing, 10.5 pocket depth
- AE637PTA 170 per 13" reel; Plastic tape: 44 mm wide, 0.4 mm thick, 4 mm pocket spacing, 11.6 pocket depth
- AE641PTA 150 per 13" reel; Plastic tape: 44 mm wide, 0.4 mm thick, 4 mm pocket spacing, 13.0 pocket depth
- AE645PTA 150 per 13" reel; Plastic tape: 44 mm wide, 0.5 mm thick, 4 mm pocket spacing, 14.0 pocket depth
- AE648PTA 125 per 13" reel; Plastic tape: 44 mm wide, 0.5 mm thick, 4 mm pocket spacing, 15.0 pocket depth



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AE63xPTA, AE64xPTA Series

| Part number ¹ | L ±20% ² (µH) | DCR (mOhms) ³ | | SRF (MHz) ⁴ | | Isat ⁵ (A) | Irms (A) ⁶ | | Height (mm) |
|--------------------------|--------------------------------|--------------------------|-------|------------------------|-----|--------------------------|-----------------------|--------------|----------------|
| | | max | typ | min | typ | | 20°C rise | 40°C rise | |
| AE630PTA301MSZ | 0.30 | 0.740 | 0.630 | 127 | 205 | 100 | 41 | 54 | 8,64 |
| AE632PTA301MSZ | 0.30 | 1.00 | 0.900 | 101 | 151 | 100 | 36 | 45 | 9,40 |
| AE630PTA501MSZ | 0.50 | 0.740 | 0.630 | 80 | 116 | 60 | 41 | 54 | 8,64 |
| AE632PTA501MSZ | 0.50 | 1.00 | 0.900 | 73 | 102 | 81 | 36 | 45 | 9,40 |
| AE637PTA501MSZ | 0.50 | 1.34 | 1.20 | 88 | 117 | 100 | 30 | 40 | 10,67 |
| AE630PTA601MSZ | 0.60 | 0.740 | 0.630 | 80 | 116 | 49 | 41 | 54 | 8,64 |
| AE632PTA601MSZ | 0.60 | 1.00 | 0.900 | 67 | 95 | 70 | 36 | 45 | 9,40 |
| AE637PTA601MSZ | 0.60 | 1.34 | 1.20 | 83 | 107 | 90 | 30 | 40 | 10,67 |
| AE641PTA601MSZ | 0.60 | 1.60 | 1.44 | 80 | 115 | 97 | 25 | 35 | 11,94 |
| AE630PTA681MSZ | 0.68 | 0.740 | 0.630 | 67 | 97 | 45 | 41 | 54 | 8,64 |
| AE632PTA681MSZ | 0.68 | 1.00 | 0.900 | 64 | 90 | 62 | 36 | 45 | 9,40 |
| AE637PTA681MSZ | 0.68 | 1.34 | 1.20 | 75 | 97 | 78 | 30 | 40 | 10,67 |
| AE641PTA681MSZ | 0.68 | 1.60 | 1.44 | 72 | 103 | 85 | 25 | 35 | 11,94 |
| AE645PTA681MSZ | 0.68 | 1.82 | 1.70 | 73 | 104 | 98 | 23 | 30 | 12,95 |
| AE630PTA801MSZ | 0.80 | 0.740 | 0.630 | 57 | 82 | 38 | 41 | 54 | 8,64 |
| AE632PTA801MSZ | 0.80 | 1.00 | 0.900 | 64 | 90 | 53 | 36 | 45 | 9,40 |
| AE637PTA801MSZ | 0.80 | 1.34 | 1.20 | 68 | 88 | 70 | 30 | 40 | 10,67 |
| AE641PTA801MSZ | 0.80 | 1.60 | 1.44 | 64 | 91 | 75 | 25 | 35 | 11,94 |
| AE645PTA801MSZ | 0.80 | 1.82 | 1.70 | 69 | 94 | 85 | 23 | 30 | 12,95 |
| AE648PTA801MSZ | 0.80 | 2.15 | 1.94 | 68 | 90 | 98 | 21 | 27 | 13,97 |
| AE630PTA901MSZ | 0.90 | 0.740 | 0.630 | 52 | 77 | 33 | 41 | 54 | 8,64 |
| AE632PTA901MSZ | 0.90 | 1.00 | 0.900 | 53 | 74 | 48 | 36 | 45 | 9,40 |
| AE637PTA901MSZ | 0.90 | 1.34 | 1.20 | 62 | 82 | 62 | 30 | 40 | 10,67 |
| AE641PTA901MSZ | 0.90 | 1.60 | 1.44 | 60 | 85 | 69 | 25 | 35 | 11,94 |
| AE645PTA901MSZ | 0.90 | 1.82 | 1.70 | 67 | 87 | 73 | 23 | 30 | 12,95 |
| AE648PTA901MSZ | 0.90 | 2.15 | 1.94 | 64 | 86 | 87 | 21 | 27 | 13,97 |
| AE630PTA102MSZ | 1.0 | 0.740 | 0.630 | 44 | 64 | 29 | 41 | 54 | 8,64 |
| AE632PTA102MSZ | 1.0 | 1.00 | 0.900 | 52 | 72 | 42 | 36 | 45 | 9,40 |
| AE637PTA102MSZ | 1.0 | 1.34 | 1.20 | 54 | 69 | 56 | 30 | 40 | 10,67 |
| AE641PTA102MSZ | 1.0 | 1.60 | 1.44 | 53 | 75 | 64 | 25 | 35 | 11,94 |
| AE645PTA102MSZ | 1.0 | 1.82 | 1.70 | 62 | 82 | 68 | 23 | 30 | 12,95 |
| AE648PTA102MSZ | 1.0 | 2.15 | 1.94 | 53 | 78 | 70 | 21 | 27 | 13,97 |
| AE630PTA122MSZ | 1.2 | 0.740 | 0.630 | 37 | 51 | 28 | 41 | 54 | 8,64 |
| AE632PTA122MSZ | 1.2 | 1.00 | 0.900 | 46 | 62 | 37 | 36 | 45 | 9,40 |
| AE637PTA122MSZ | 1.2 | 1.34 | 1.20 | 52 | 67 | 49 | 30 | 40 | 10,67 |
| AE641PTA122MSZ | 1.2 | 1.60 | 1.44 | 51 | 73 | 54 | 25 | 35 | 11,94 |
| AE645PTA122MSZ | 1.2 | 1.82 | 1.70 | 57 | 82 | 58 | 23 | 30 | 12,95 |
| AE648PTA122MSZ | 1.2 | 2.15 | 1.94 | 52 | 71 | 63 | 21 | 27 | 13,97 |
| AE630PTA202MSZ | 2.0 | 0.740 | 0.630 | 21 | 31 | 16 | 41 | 54 | 8,64 |
| AE632PTA202MSZ | 2.0 | 1.00 | 0.900 | 32 | 44 | 27 | 36 | 45 | 9,40 |
| AE637PTA202MSZ | 2.0 | 1.34 | 1.20 | 39 | 56 | 37 | 30 | 40 | 10,67 |
| AE641PTA202MSZ | 2.0 | 1.60 | 1.44 | 36 | 51 | 35 | 25 | 35 | 11,94 |
| AE645PTA202MSZ | 2.0 | 1.82 | 1.70 | 43 | 61 | 40 | 23 | 30 | 12,95 |
| AE648PTA202MSZ | 2.0 | 2.15 | 1.94 | 41 | 53 | 45 | 21 | 27 | 13,97 |
| AE645PTA362MSZ | 3.6 | 1.82 | 1.70 | 27 | 38 | 25 | 23 | 30 | 12,95 |
| AE645PTA402MSZ | 4.0 | 1.82 | 1.70 | 25 | 35 | 20 | 23 | 30 | 12,95 |
| AE648PTA402MSZ | 4.0 | 2.15 | 1.94 | 25 | 36 | 25 | 21 | 27 | 13,97 |
| AE645PTA472MSZ | 4.7 | 1.82 | 1.70 | 21 | 30 | 18 | 23 | 30 | 12,95 |

1. When ordering, please specify **screening** code:

AE648PTA472MSZ

Screening: Z = Unscreened

H = Coilcraft CP-SA-10001 Group A

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

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

1 = EEE-INST-002 (Family 1) Level 1

2 = EEE-INST-002 (Family 1) Level 2

3 = EEE-INST-002 (Family 1) Level 3

4 = MIL-STD-981 (Family 04) Class B

5 = MIL-STD-981 (Family 04) Class S

F = ESCC3201 (F4 operational life performed at 105°C)

- Screening performed to the document's latest revision.

- Lot qualification (Group B) available.

- Testing T and U have been replaced with more detailed codes 4, 5, and 1, 2, 3, respectively. Codes T and U can still be used, if necessary. Custom testing also available.

- Country of origin restrictions available; prefix option G.

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

3. DCR measured on a Keithley 580 micro-ohmmeter.

4. SRF measured using an Agilent E5061 network analyzer and impedance option using fixture CCF1592 with mask 297A1751 and shim 297A1765..

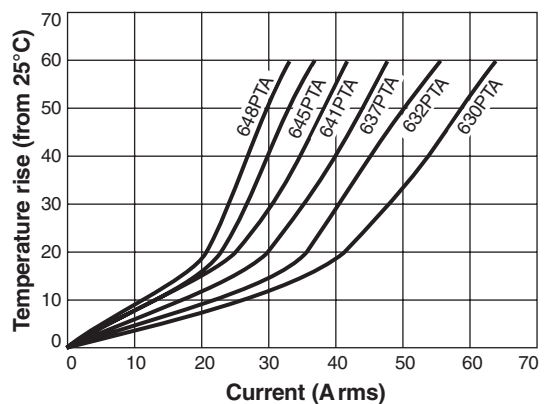
5. DC current at which the inductance drops 10% (typ) from its value without current.

6. Current that causes the specified temperature rise from 25°C ambient. When Irms is greater than Isat, Isat is the more critical specification, and Irms is shown in *gray type*. See Temperature Rise vs Current curve below.

7. Electrical specifications at 25°C.

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

Temperature Rise vs Current



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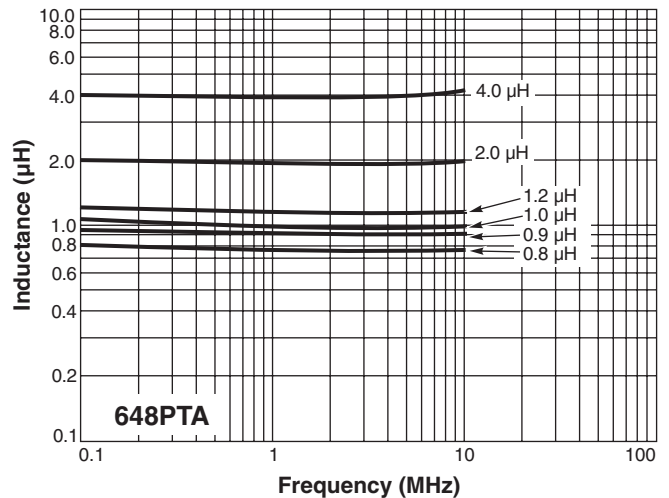
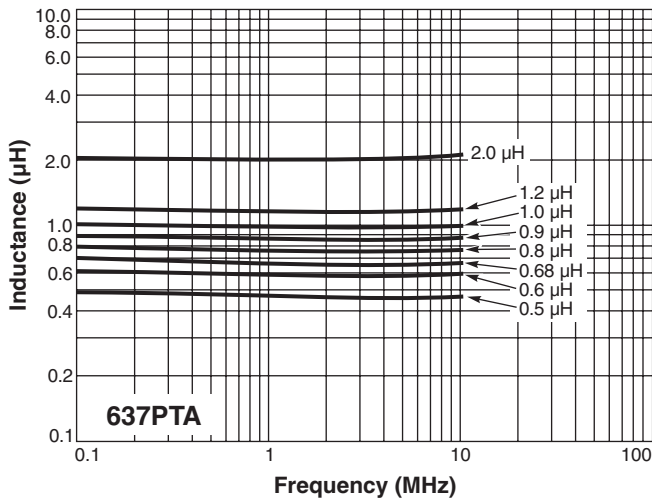
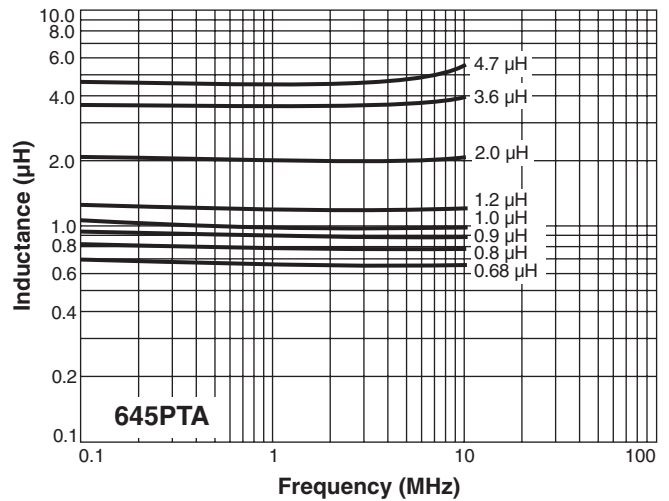
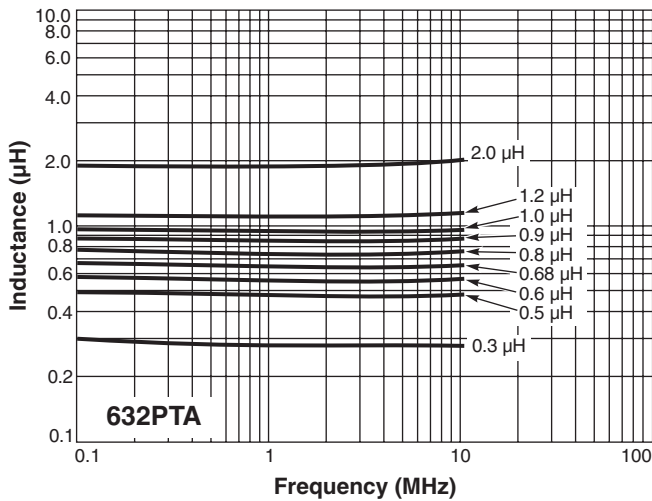
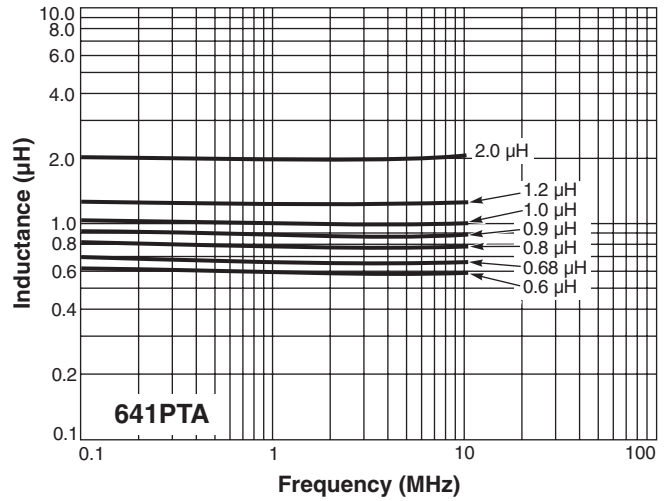
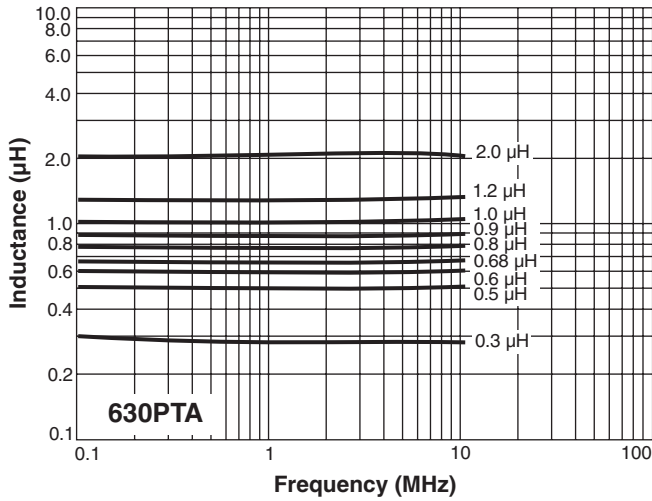
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AE63xPTA, AE64xPTA Series

L vs Frequency



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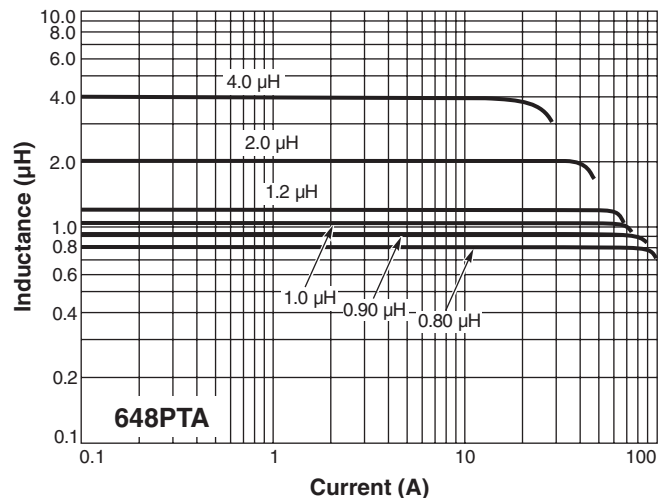
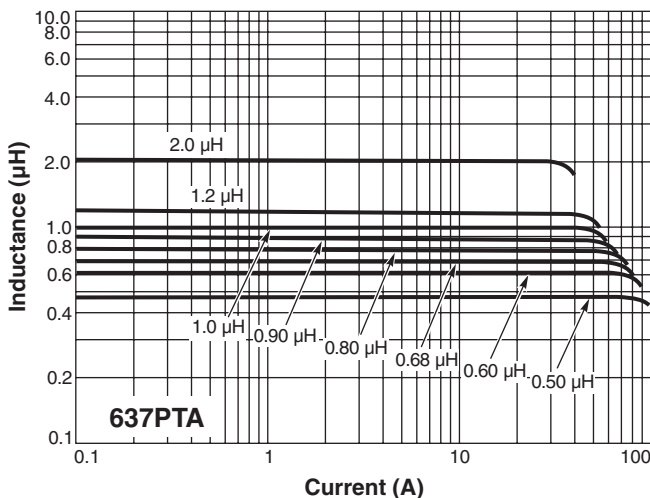
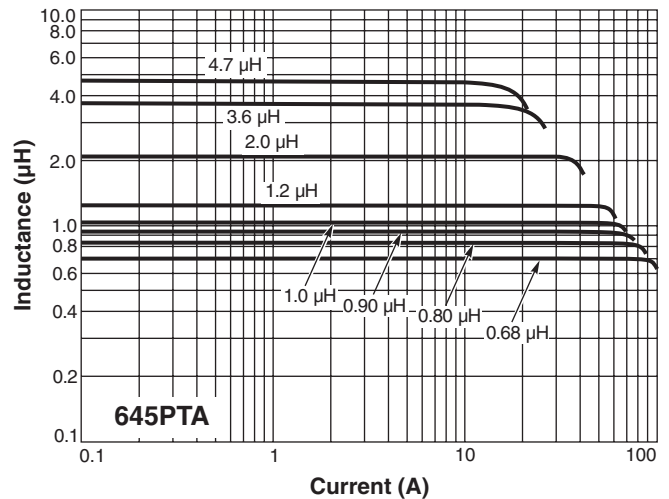
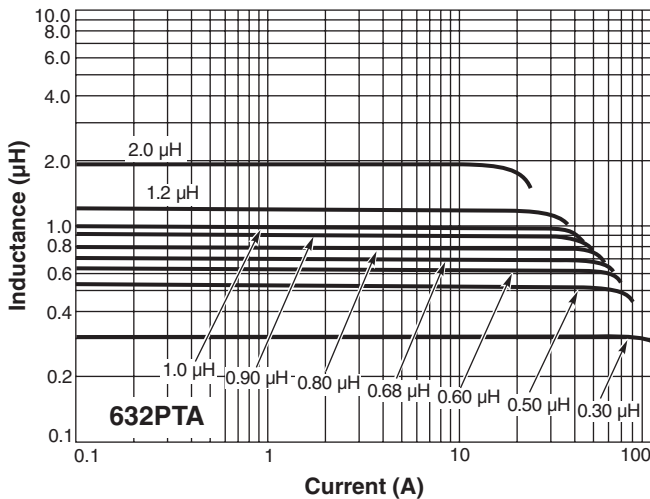
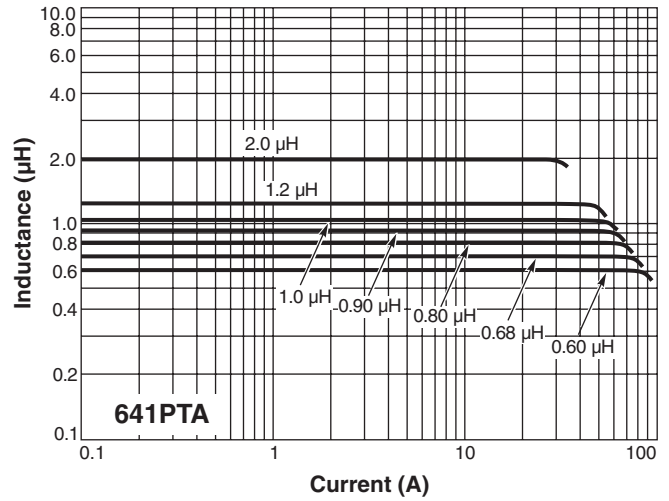
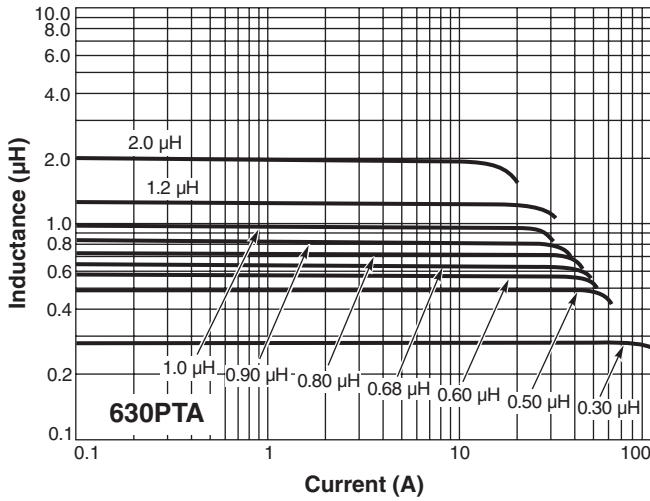
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AE63xPTA, AE64xPTA Series

L vs Current



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