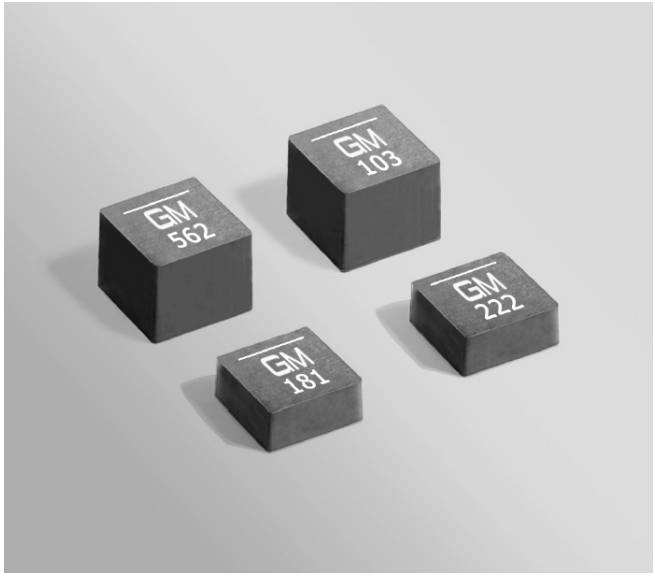
Shielded Power Inductors – AL60xx



- High current; very low DCR
- Soft saturation
- AEC-200 Grade 1 qualified (–40°C to +125°C ambient)

Designer's Kit C442 contains 3 each of all values.
Core material Composite
Environmental RoHS compliant, halogen free
Terminations RoHS compliant tin-silver (96.5/3.5) over copper. Other terminations available at additional cost.
Operating voltage: 0 – 55 V
Weight AL6030: 0.60 – 0.70 g; **AL6060**: 1.0 – 1.6 g
Ambient temperature –40°C to +125°C with (40°C rise) Irms current.
Maximum part temperature +165°C (ambient + temp rise).
Storage temperature Component: –55°C to +165°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)
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.

Part number[1]	Inductance[2] ±20% (µH)	DCR (mOhms)[3] typ	DCR (mOhms)[3] max	SRF typ[4] (MHz)	Isat[5] (A)	Irms (A)[6] 20°C rise	Irms (A)[6] 40°C rise
AL6030-181ME_	0.18	1.59	1.75	141	39.0	24	32
AL6030-331ME_	0.33	2.30	2.53	89	30.0	20	25
AL6030-561ME_	0.56	3.01	3.31	61	29.0	17	22
AL6030-102ME_	1.0	5.62	6.18	50	23.0	13	18
AL6030-122ME_	1.2	6.82	7.50	43	22.0	12	16
AL6030-182ME_	1.8	9.57	10.52	34	18.2	10	14
AL6030-222ME_	2.2	12.70	13.97	30	15.9	7.0	10
AL6030-332ME_	3.3	19.92	20.81	26	12.2	6.0	8.0
AL6060-472ME_	4.7	13.10	14.40	21	10.5	8.0	11
AL6060-562ME_	5.6	14.46	15.90	20	9.9	7.5	10
AL6060-682ME_	6.8	18.90	20.80	18	9.2	7.0	9.0
AL6060-822ME_	8.2	24.00	26.40	16	8.4	6.0	8.0
AL6060-103ME_	10	27.00	29.82	14	7.6	5.0	7.0
AL6060-153ME_	15	39.77	43.75	11	5.8	4.5	6.0
AL6060-223ME_	22	55.12	60.63	9.0	5.6	3.6	5.0

Irms Testing

Irms testing was performed on 0.75 inch wide × 0.25 inch thick copper traces in still air.

Temperature rise is highly dependent on many factors including pcb land pattern, trace size, and proximity to other components. Therefore temperature rise should be verified in application conditions.

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

AL6060-333MEC

Termination: E = RoHS compliant 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 tested at 1 MHz, 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 25°C that causes an inductance drop of 30% (typ) from its value without current.
6. Current that causes the specified temperature rise from 25°C ambient. This information is for reference only and does not represent absolute maximum ratings.
7. Electrical specifications at 25°C.

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

PulseGM
www.pulsegm.com
China +86-0755-21055287
Sales@pulsegm.com

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HIGH TEMPERATURE

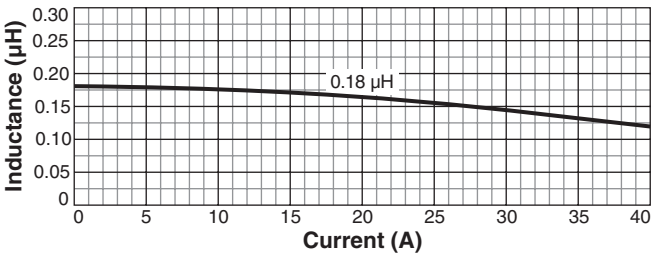
RoHS/ REACH COMPLIANT

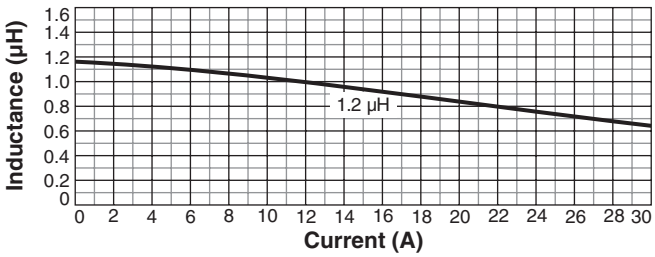
Halogen Free

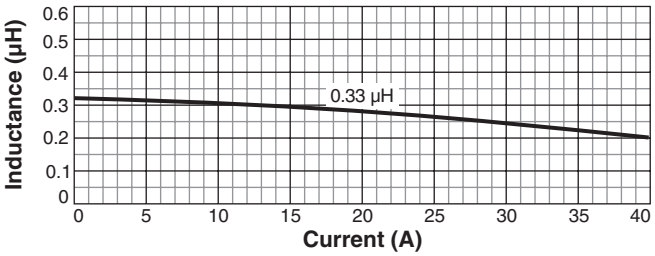
AEC Q200 +125°C

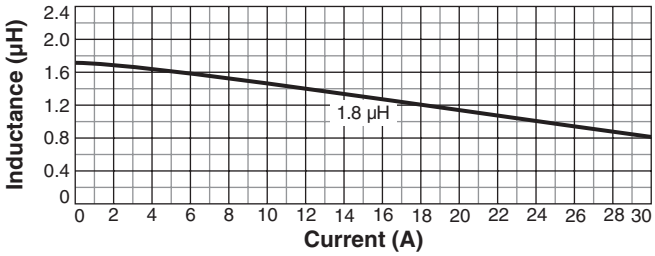
Shielded Power Inductors – AL60xx

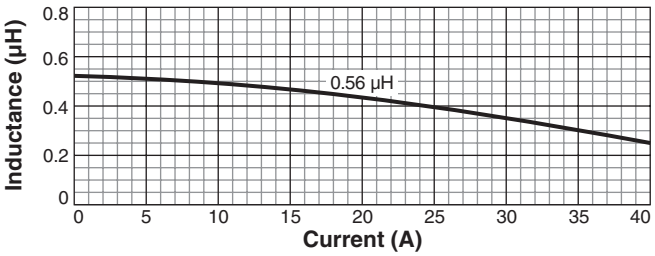
L vs Current

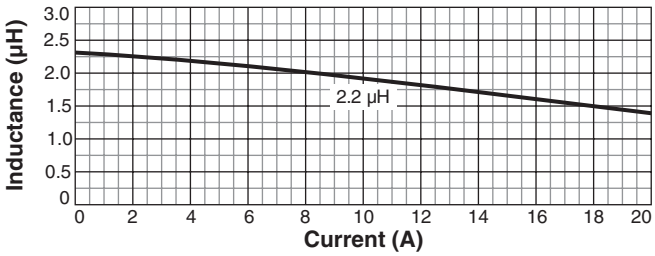


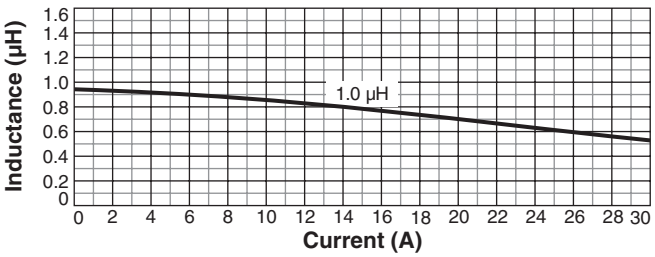


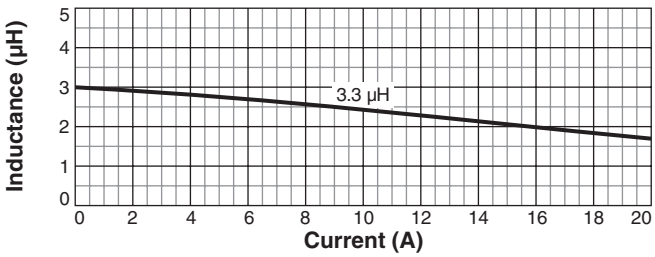












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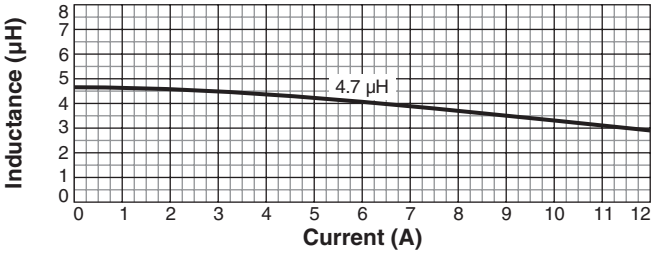
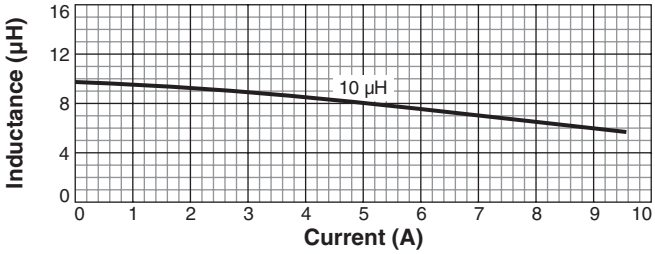
RoHS/ REACH COMPLIANT

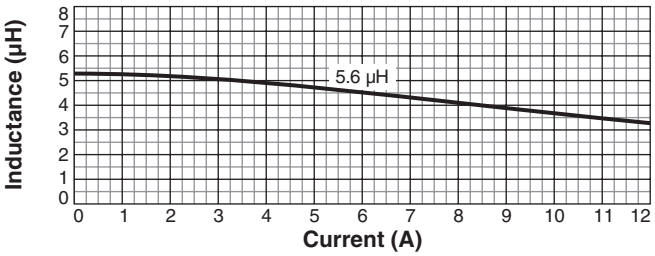
Halogen Free

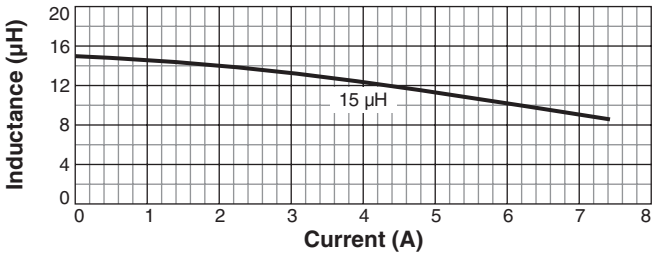
AEC Q200 +125°C

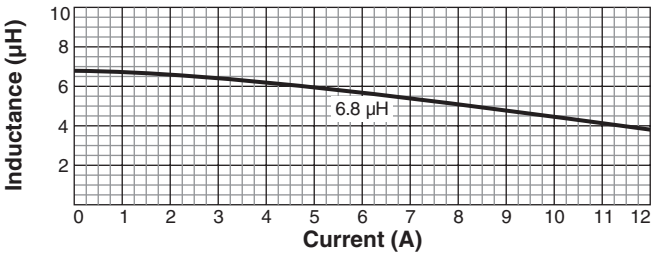
L vs Current

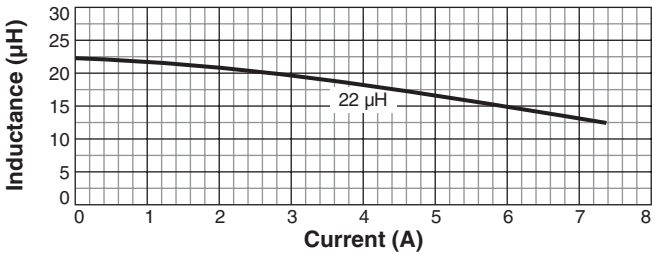


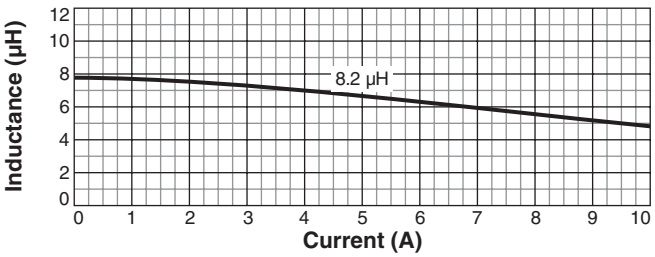


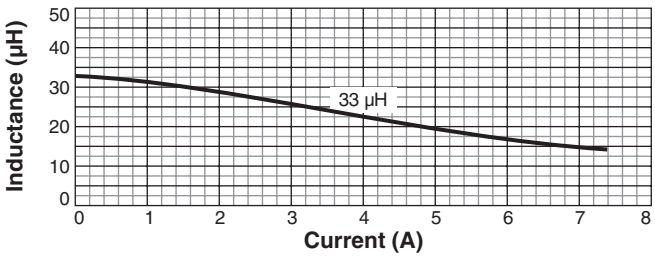












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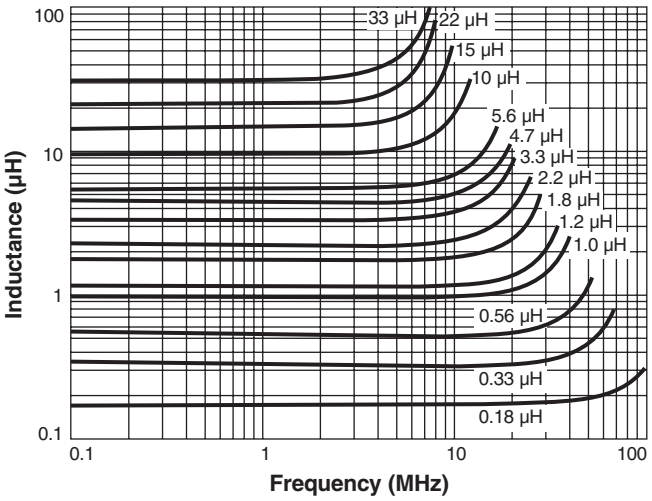
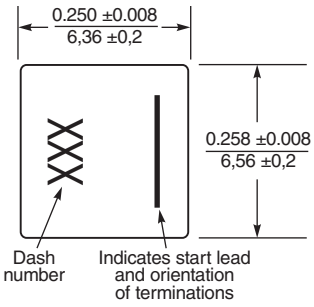
RoHS/ REACH COMPLIANT

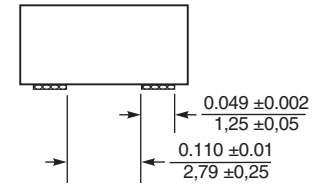
Halogen Free

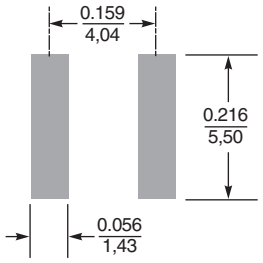
AEC Q200 +125°C

Typical L vs Frequency





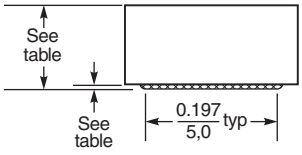




Recommended Land Pattern

Dimensions are in inches / mm

Weight
AL6030: 0.60 – 0.70 g
AL6060: 1.0 – 1.6 g



Dash number	Height* max (in / mm)	Terminal thickness (typ) (in / mm)
-181	0.122 / 3.1	0.0106 / 0.27
-331	0.122 / 3.1	0.0106 / 0.27
-561	0.122 / 3.1	0.0106 / 0.27
-102	0.122 / 3.1	0.0071 / 0.18
-122	0.122 / 3.1	0.0071 / 0.18
-182	0.122 / 3.1	0.0059 / 0.15
-222	0.122 / 3.1	0.0047 / 0.12
-332	0.122 / 3.1	0.0039 / 0.10
-472	0.240 / 6.1	0.0071 / 0.18
-562	0.240 / 6.1	0.0071 / 0.18
-682	0.240 / 6.1	0.0059 / 0.15
-822	0.240 / 6.1	0.0047 / 0.12
-103	0.240 / 6.1	0.0047 / 0.12
-153	0.240 / 6.1	0.0039 / 0.10
-223	0.240 / 6.1	0.0039 / 0.10
-333	0.240 / 6.1	0.0031 / 0.08

* For optional tin-lead and tin-silver-copper terminations, dimensions are for the mounted part. Dimensions before mounting can be an additional 0.005 inch / 0.13 mm.

Packaging
AL6030 400/7″reel; 1500/13″ reel Plastic tape: 16 mm wide, 0.3 mm thick, 12 mm pocket spacing, 3.12 mm pocket depth
AL6060 250/7″ reel; 750/13″ reel Plastic tape: 16 mm wide, 0.3 mm thick, 12 mm pocket spacing, 6.23 mm pocket depth