VRM/VRD Power Inductors – MVR



The MVR series provides greater current handling capability than any other power inductor its size. While requiring only one square centimeter of board space, this inductor can handle up to 36 Amps of current.

These shielded inductors were developed for multi-phase voltage regulators and are ideal for use in DC-DC converters, battery-powered devices and high current power supplies. Their flat wire construction ensures very low DC resistance and offers an excellent performance-to-height ratio. The materials used in these parts eliminate all thermal aging issues.

The MVR12xxT is a high efficiency part that features very low core loss. The MVR12xxC provides soft saturation and is unaffected by part temperature up to 125°C.

Refer to the comparison curves for L vs Current and ESR vs Frequency for performance differences.

For free evaluation samples, contact Coilcraft or order them online at **www.coilcraft.com.**

Part number[1]	L[2] ±20% (µH)	DCR ±8% (mOhm)	SRF[3] typ (MHz)	Isat[4] (A)	Irms[5] (A)	Height max (mm)
Low core loss						
MVR1251T-251ML_	0.25	0.925	160	35	25	5.1
MVR1251T-361ML_	0.36	0.925	140	24	24	5.1
MVR1251T-561ML_	0.56	0.925	110	13	25	5.1
Soft saturation						
MVR1247C-361ML_	0.36	0.925	120	36	24	4.7
MVR1255C-651ML_	0.65	1.50	115	24	19	5.5
MVR1261C-112ML_	1.10	1.95	95	20	20	6.1
MVR1271C-162ML_	1.65	2.53	55	17	20	7.1
MVR1278C-232ML_	2.30	3.08	50	16	17	7.8

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

MVR1278C-232M L C

Termination: **L** = 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 measured at 500 kHz, 0.1 Vrms, 0 Adc using a Coilcraft SMD-A fixture in an Agilent/HP 4284A LCR meter or equivalent.
3. SRF measured on an Agilent/HP 8753ES.
4. DC current at which the inductance drops 30% (typ) for MVR12xxC and 20% (typ) for MVR12xxT from its value without current.
5. Current that causes a 40°C temperature rise from 25°C ambient.
6. Electrical specifications at 25°C.

Refer to Doc 362 “Soldering Surface Mount Components” before soldering.

Core material MVRxxxT: Ferrite; MVRxxxxC: Powdered iron

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

Terminations RoHS compliant tin-silver over copper. Other terminations available at additional cost.

Weight MVRT: 2.1 g; MVRC: 2.45 – 3.86 g

Ambient temperature –40°C to +85°C with Irms current, +85°C to +125°C with derated current

Storage temperature Component: –40°C to +125°C. 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
MVR1247 200/7″ reel; 900/13″ reel
MVR1251 175/7″ reel; 700/13″ reel
MVR1255 175/7″ reel; 700/13″ reel
MVR1261 175/7″ reel; 700/13″ reel
MVR1271 100/7″ reel; 500/13″ reel
MVR1278 100/7″ reel; 500/13″ reel

Plastic tape: 24 mm wide, 16 mm pocket spacing
MVR1247 0.35 mm thick, 4.5 mm pocket depth
MVR1251 0.4 mm thick, 6.1 mm pocket depth
MVR1255 0.4 mm thick, 6.1 mm pocket depth
MVR1261 0.4 mm thick, 6.1 mm pocket depth
MVR1271 0.4 mm thick, 7.5 mm pocket depth
MVR1278 0.4 mm thick, 7.5 mm pocket depth

PCB washing Only pure water or alcohol recommended

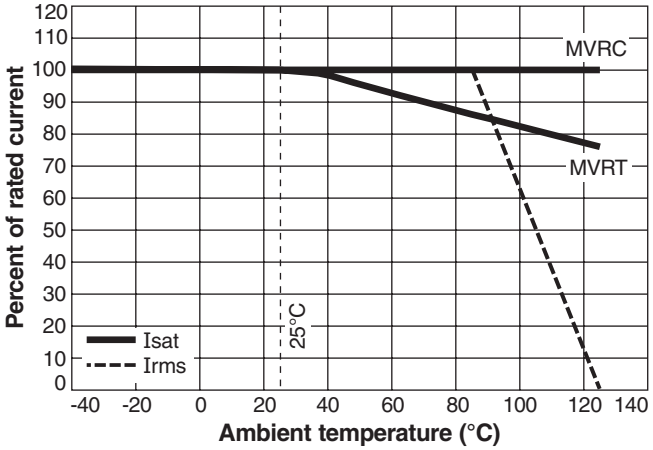
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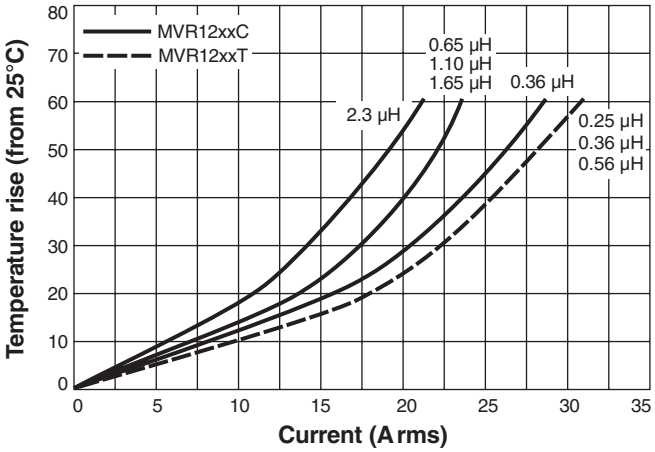
SPICE models
ON OUR WEB SITE OR CD

MVR Series – VRM/VRD Power Inductor

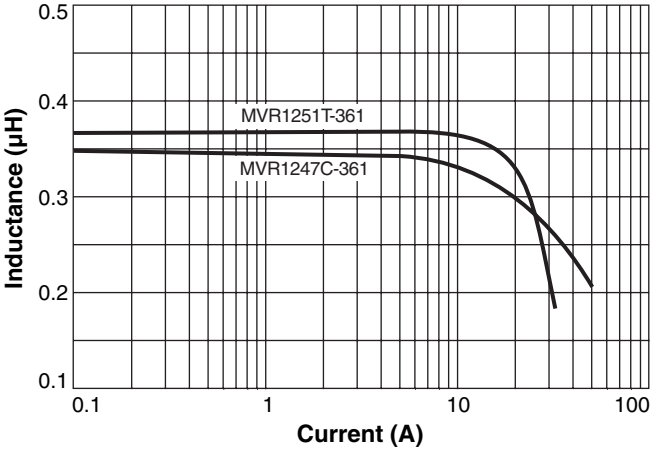
Current Derating



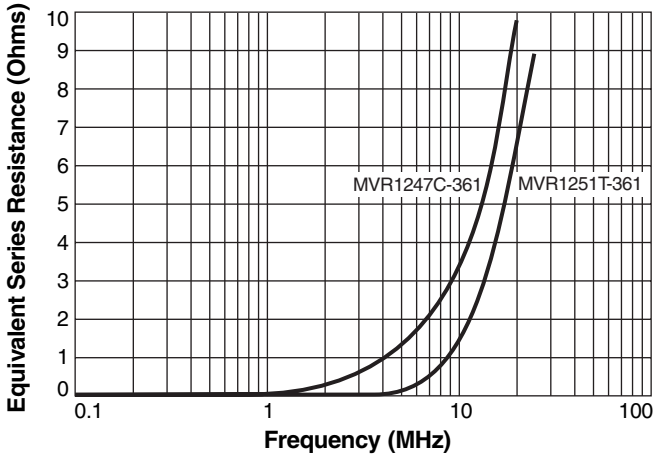
Temperature Rise vs Current

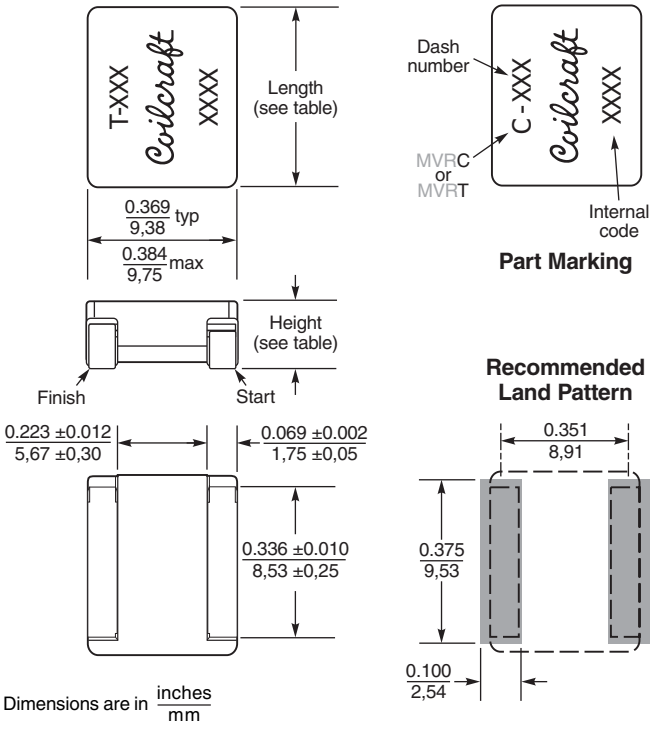


L vs Current Comparison – 0.36 µH



ESR vs Frequency Comparison – 0.36 µH





Body size	Height (in. / mm) typ	Height (in. / mm) max	Length (in. / mm) typ	Length (in. / mm) max
MVR1247	0.171 / 4,35	0.185 / 4,70	0.448 / 11,37	0.453 / 11,50
MVR1251	0.181 / 4,61	0.200 / 5,10	0.439 / 11,14	0.453 / 11,50
MVR1255	0.207 / 5,25	0.217 / 5,50	0.448 / 11,37	0.453 / 11,50
MVR1261	0.232 / 5,90	0.240 / 6,10	0.448 / 11,37	0.453 / 11,50
MVR1271	0.262 / 6,65	0.280 / 7,10	0.448 / 11,37	0.453 / 11,50
MVR1278	0.287 / 7,29	0.307 / 7,80	0.448 / 11,37	0.453 / 11,50

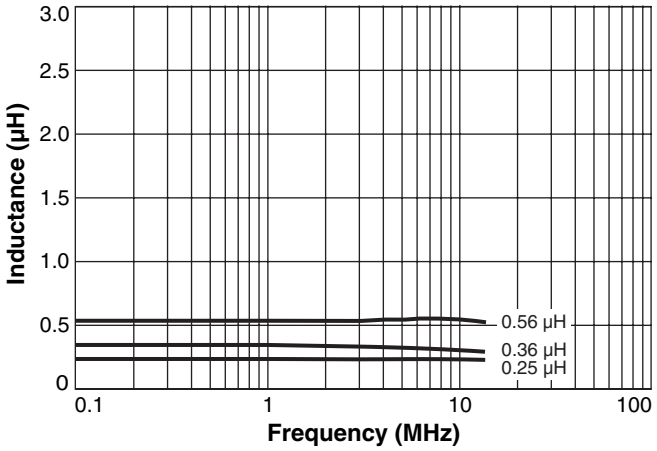
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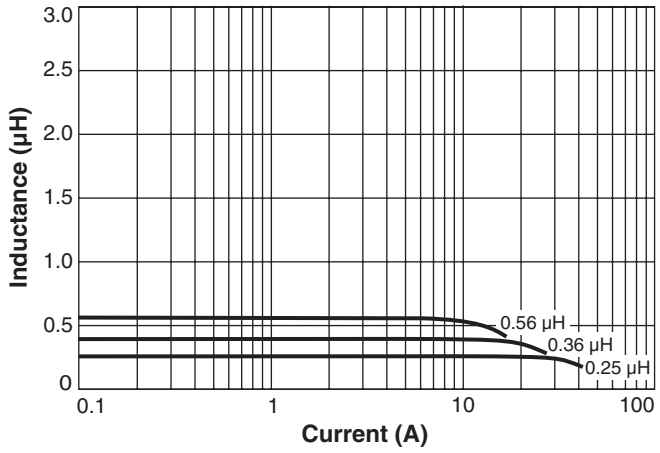
MVR Series – VRM/VRD Power Inductor

MVR12xxT

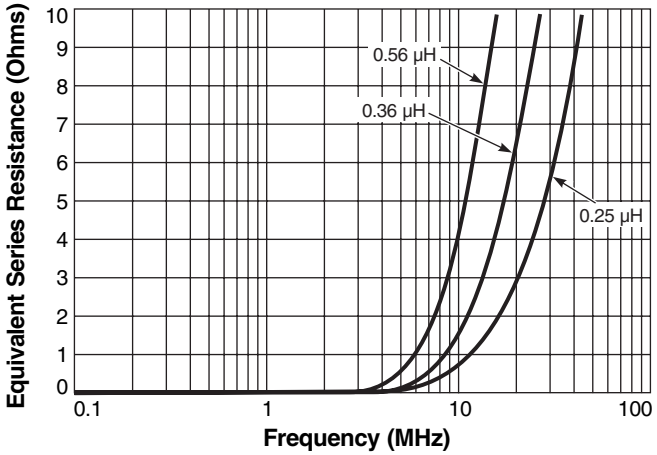
L vs Frequency



L vs Current

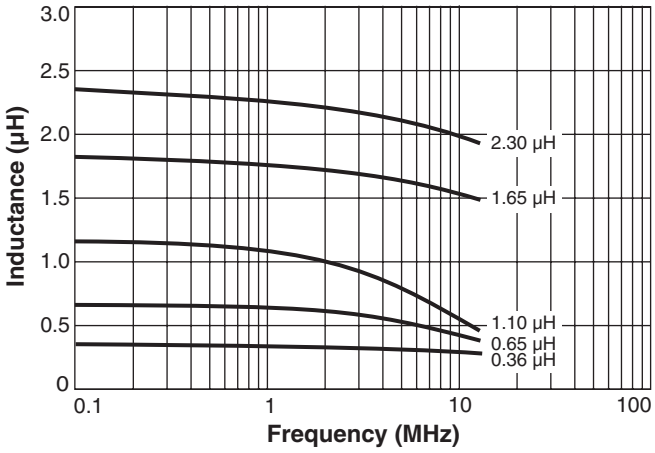


ESR vs Frequency

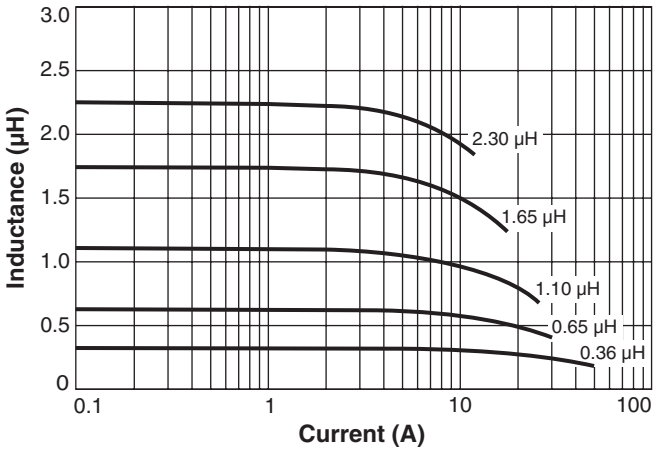


MVR12xxC

L vs Frequency

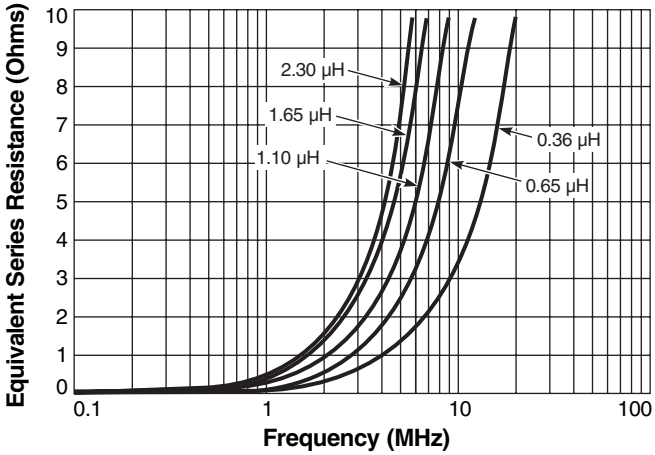


L vs Current



Inductance vs current is unaffected by part temperature up to 125°C.

ESR vs Frequency



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