

# High-Reliability Chip Inductors MS413RAM

- Ferrite construction provides lowest DCR and highest current rating of our 1008 size inductors.
- Available in 14 inductance values from 0.9 to 10  $\mu\text{H}$ , all at 10% tolerance.

This robust version of Coilcraft's standard 1008AF series features high temperature materials that allow operation in ambient temperatures up to 155°C. The tin-lead (Sn-Pb) terminations ensure the best possible board adhesion.

Part number	Inductance <sup>1</sup> $\pm 10\%$ ( $\mu\text{H}$ )	Q typ <sup>2</sup>	SRF min <sup>3</sup> (MHz)	DCR max <sup>4</sup> (Ohms)	Isat <sup>5</sup> (A)	Imax (A)
MS413RAM901KSZ	0.9	25	415	0.120	1.4	1.3
MS413RAM112KSZ	1.1	24	376	0.130	1.3	1.2
MS413RAM132KSZ	1.3	37	198	0.145	1.2	1.1
MS413RAM152KSZ	1.5	22	135	0.155	1.1	1.0
MS413RAM192KSZ	1.9	29	126	0.180	1.0	1.0
MS413RAM222KSZ	2.2	21	106	0.186	0.95	0.95
MS413RAM272KSZ	2.7	22	70	0.210	0.80	0.90
MS413RAM332KSZ	3.3	21	59	0.240	0.75	0.80
MS413RAM392KSZ	3.9	21	55	0.260	0.70	0.80
MS413RAM472KSZ	4.7	27	48	0.450	0.70	0.65
MS413RAM582KSZ	5.8	21	37	0.320	0.55	0.75
MS413RAM682KSZ	6.8	28	33	0.330	0.50	0.70
MS413RAM822KSZ	8.2	20	34	0.380	0.50	0.65
MS413RAM103KSZ	10.0	22	26	0.540	0.45	0.55

1. Inductance measured at 2.5 MHz using Coilcraft SMD-A fixture in an Agilent/HP 4286A impedance analyzer or equivalent with Coilcraft-provided correlation pieces.
  2. Q measured at 2.5 MHz using an Agilent/HP 4291A with an Agilent/HP 16197 test fixture or equivalents.
  3. SRF measured using an Agilent/HP 8753ES network analyzer or equivalent with a Coilcraft SMD-D fixture.
  4. DCR measured on a Keithley 580 micro-ohmmeter or equivalent and a Coilcraft CCF858 test fixture.
  5. DC current at 25°C that causes a 10% (typ) inductance drop from its value without current.
  6. Electrical specifications at 25°C.
- Refer to Doc 362 "Soldering Surface Mount Components" before soldering.

**Core material** Ferrite

**Terminations** Tin-lead (63/37) over silver-platinum-glass frit

**Ambient temperature** -55°C to +125°C with I<sub>max</sub> 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

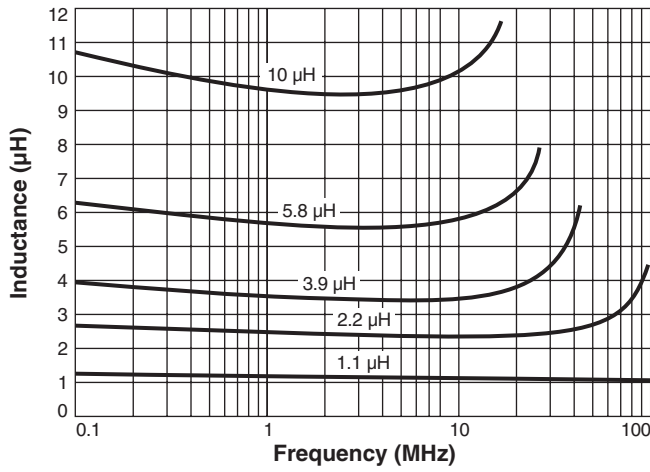
**Temperature Coefficient of Inductance (TCL)** +100 to +350 ppm/°C

**Moisture Sensitivity Level (MSL)** 1 (unlimited floor life at <30°C / 85% relative humidity)

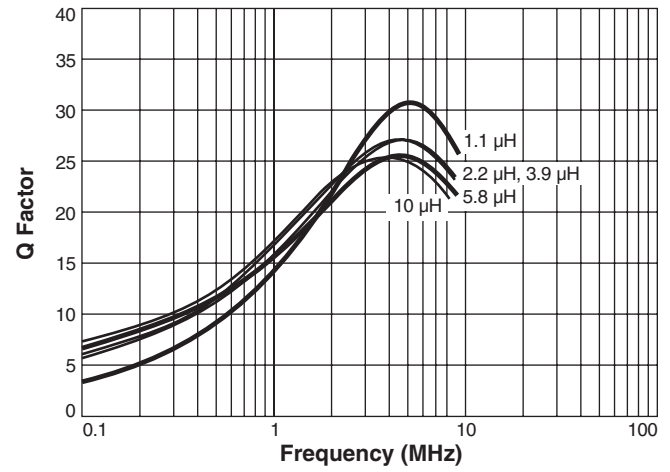
**Enhanced crush-resistant packaging** 2000 per 7" reel  
Plastic tape: 8 mm wide, 0.3 mm thick, 4 mm pocket spacing,  
2.0 mm pocket depth

# MS413RAM Series (1008)

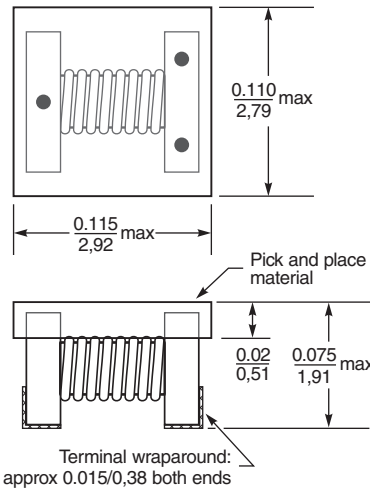
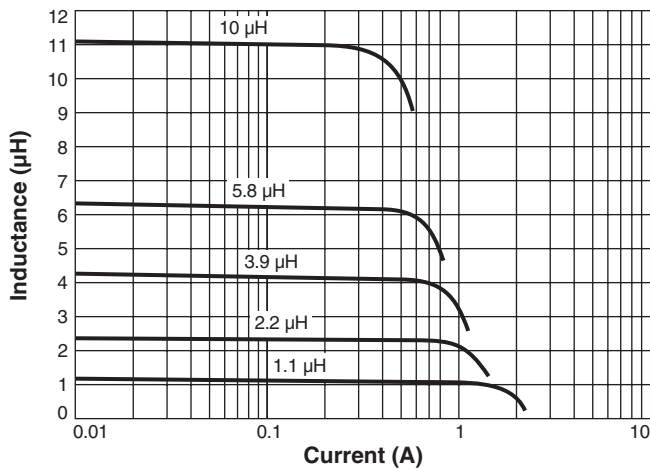
## Typical L vs Frequency



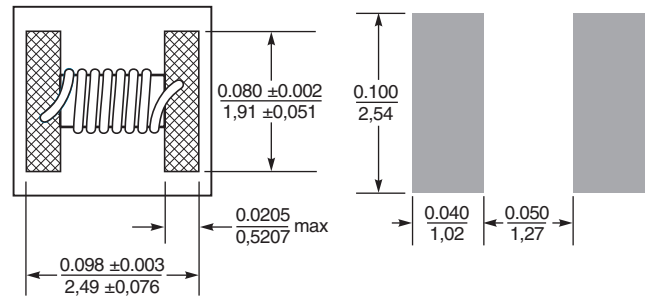
## Typical Q vs Frequency



## Typical L vs Current



### Suggested Land Pattern



Dimensions are in  $\frac{\text{inches}}{\text{mm}}$

Terminal dimensions are without solder applied. For dimensions with solder, add 0.006 inches / 0,152 mm.

Visit <http://www.coilcraft-cps.com/support/colorcode.aspx> for an explanation of the color dots.



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