



# SMT Power Inductors – MSS1278



- 12.3 × 12.3 mm footprint; 8 mm high shielded inductors
- Low DCR and excellent current handling

**Designer's Kit C380** contains 3 each of all values.

**Core material** Ferrite

**Core and winding loss** See [www.coilcraft.com/coreloss](http://www.coilcraft.com/coreloss)

**Terminations** RoHS compliant matte tin over nickel over phos bronze. Other terminations available at additional cost.

**Weight:** 3.8 – 4.6 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** 500/13" reel; Plastic tape: 24 mm wide, 0.4 mm thick, 16 mm pocket spacing, 8.1 mm pocket depth

**PCB washing** Only pure water or alcohol recommended

Part number <sup>1</sup>	Inductance <sup>2</sup> (µH)	DCR <sup>3</sup> (mOhms)		SRF typ <sup>4</sup> (MHz)	Isat (A) <sup>5</sup>			Irms (A) <sup>6</sup>	
		typ	max		10% drop	20% drop	30% drop	20°C rise	40°C rise
MSS1278-142ML_	1.4 ±20%	8.8	9.8	80.0	25.2	28.6	30.6	7.00	10.00
MSS1278-472ML_	4.7 ±20%	13.9	15.5	30.0	13.7	15.2	15.9	4.30	6.20
MSS1278-562ML_	5.6 ±20%	15.7	17.5	24.0	12.2	13.7	14.6	4.30	6.20
MSS1278-682ML_	6.8 ±20%	19.1	21.3	21.0	11.3	12.7	13.7	4.20	6.00
MSS1278-822ML_	8.2 ±20%	20.3	22.6	20.0	10.1	11.5	12.3	4.10	5.90
MSS1278-103ML_	10 ±20%	21.8	24.3	17.0	9.36	10.6	11.2	4.00	5.70
MSS1278-123ML_	12 ±20%	23.2	25.8	15.0	8.84	10.0	10.7	3.70	5.20
MSS1278-153ML_	15 ±20%	27.9	31.0	13.0	7.30	8.36	9.00	3.50	4.90
MSS1278-183ML_	18 ±20%	30.8	34.3	12.0	6.10	7.10	7.74	3.00	4.50
MSS1278-223ML_	22 ±20%	35.5	39.5	11.0	6.04	6.78	7.24	2.90	4.00
MSS1278-273ML_	27 ±20%	45.0	50.0	10.0	5.80	6.56	7.02	2.60	3.60
MSS1278-333ML_	33 ±20%	61.9	68.8	9.5	5.22	5.90	6.30	2.30	3.10
MSS1278-393ML_	39 ±20%	69.1	76.8	8.5	4.68	5.42	5.80	2.10	3.00
MSS1278-473ML_	47 ±20%	72.3	80.4	7.5	4.40	5.02	5.32	2.00	2.90
MSS1278-563ML_	56 ±20%	80.2	89.2	7.0	4.02	4.60	4.90	1.90	2.70
MSS1278-683ML_	68 ±20%	91.3	101.5	6.5	3.40	3.86	4.26	1.80	2.60
MSS1278-823ML_	82 ±20%	125.9	139.9	5.0	3.12	3.58	3.80	1.60	2.30
MSS1278-104ML_	100 ±20%	135.1	150.2	4.5	2.88	3.28	3.52	1.50	2.20
MSS1278-124KL_	120 ±10%	182.3	202.6	4.3	2.62	3.00	3.24	1.40	1.90
MSS1278-154KL_	150 ±10%	216.5	240.6	4.1	2.48	2.86	3.02	1.30	1.80
MSS1278-184KL_	180 ±10%	229.0	254.5	4.0	2.26	2.58	2.74	1.20	1.70
MSS1278-224KL_	220 ±10%	323.6	359.6	3.4	1.96	2.22	2.36	1.00	1.60
MSS1278-274KL_	270 ±10%	415.6	461.8	3.1	1.74	2.04	2.18	0.90	1.20
MSS1278-334KL_	330 ±10%	487.3	541.5	2.9	1.66	1.86	2.00	0.80	1.00
MSS1278-394KL_	390 ±10%	533.6	592.9	2.7	1.52	1.72	1.88	0.75	1.00
MSS1278-474KL_	470 ±10%	707.5	786.2	2.2	1.34	1.54	1.64	0.66	0.90
MSS1278-564KL_	560 ±10%	777.4	863.8	2.0	1.24	1.42	1.50	0.60	0.80
MSS1278-684KL_	680 ±10%	1045	1162	1.7	1.16	1.28	1.38	0.55	0.75
MSS1278-824KL_	820 ±10%	1166	1296	1.4	1.04	1.16	1.26	0.50	0.70
MSS1278-105KL_	1000 ±10%	1334	1483	1.3	0.97	1.10	1.14	0.48	0.68

1. Please specify **termination** and **packaging** codes:

**MSS1278-105KLD**

**Termination:** L = RoHS compliant matte tin over nickel over phos bronze.  
Special order:  
T = RoHS tin-silver-copper (95.5/4/0.5) or S = non-RoHS tin-lead (63/37).

**Packaging:** D = 13" machine-ready reel. EIA-481 embossed plastic tape (500 parts per full reel).

B = Less than full reel. In tape, but not machine ready. To have a leader and trailer added (\$25 charge), use code letter D instead.

2. Inductance tested at 100 kHz, 0.1 Vrms, 0 Adc using an Agilent/HP 4263B LCR meter or equivalent.
3. DCR measured on a micro-ohmmeter and a Coilcraft CCF858 test fixture.
4. SRF measured using an Agilent/HP 4191A or equivalent.
5. DC current at which the inductance drops the specified amount from its value without current.
6. Current that causes the specified temperature rise from 25°C ambient.
7. Electrical specifications at 25°C.

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

**SPICE models** ON OUR WEB SITE

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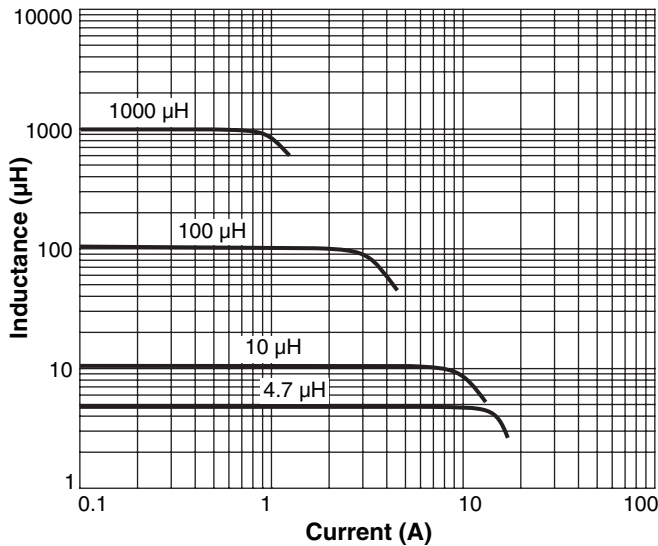
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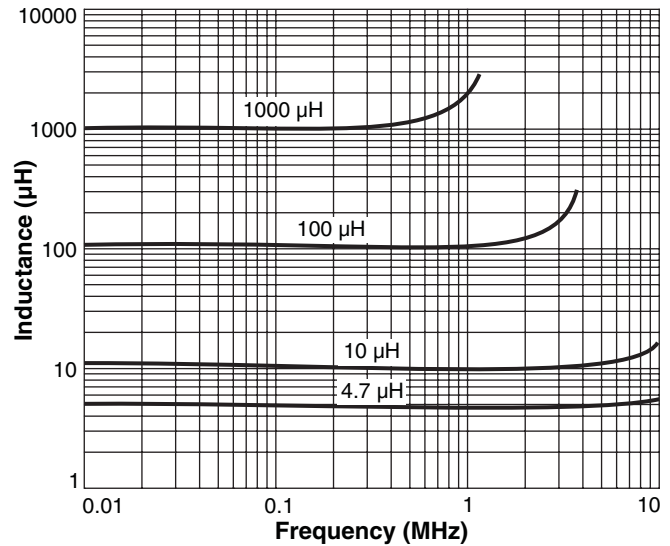


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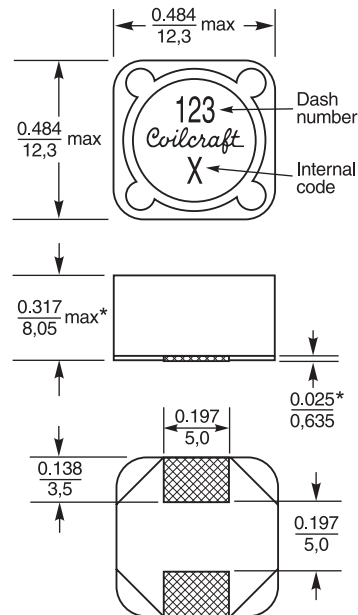
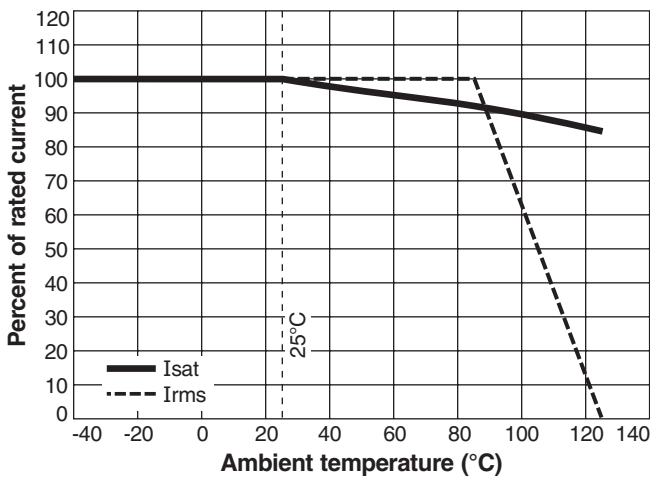
## Typical L vs Current



## Typical L vs Frequency

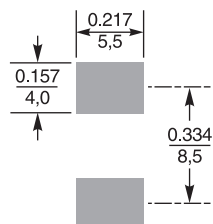


## Typical Current Derating



Parts manufactured prior to August 2011 may have a different part marking.

### Recommended Land Pattern



\* For optional tin-lead and tin-silver-copper terminations, dimensions are for the mounted part. Dimensions before mounting can be an additional 0.012 inch (0,3 mm).

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



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