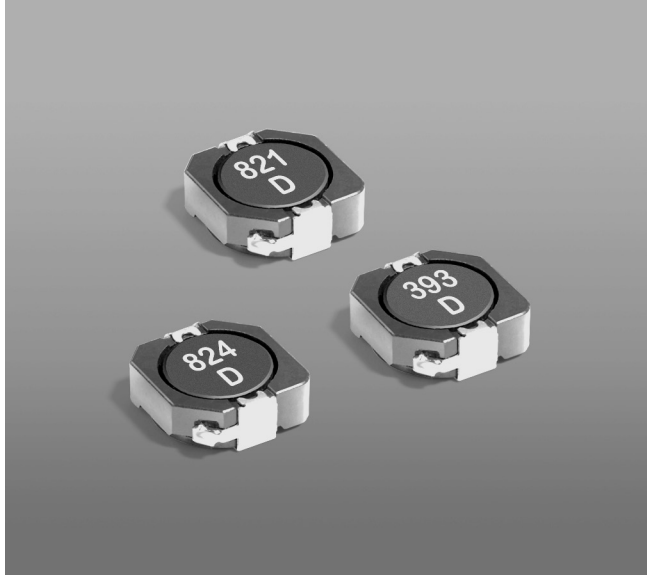




# High Temp Power Inductors MSS1038T



- Designed for high temperature applications; ambient temperature up to 165°C.
- AEC-Q200 qualified
- Very low DCR and excellent current handling

**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 copper. Other terminations available at additional cost.

**Weight:** 1.5 g

**Operating voltage:** 400 V max

**Ambient temperature** -40°C to +125°C with (40°C rise) Irms current.

**Maximum part temperature** +165°C (ambient + temp rise). [Derating](#).

**Storage temperature** Component: -40°C to +165°C.

Tape and reel 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)

**Packaging** 250/7" reel; 1000/13" reel; Plastic tape: 24 mm wide, 0.35 mm thick, 16 mm pocket spacing, 4.3 mm pocket depth

**PCB washing** Tested to MIL-STD-202 Method 215 plus an additional aqueous wash. See [Doc787\\_PCB\\_Washing.pdf](#).

| Part number <sup>1</sup> | Inductance <sup>2</sup><br>(μH) | DCR<br>max<br>(mΩ) | SRF<br>typ <sup>3</sup><br>(MHz) | Isat (A) <sup>4</sup> |             |             | Irms (A) <sup>5</sup> |              |
|--------------------------|---------------------------------|--------------------|----------------------------------|-----------------------|-------------|-------------|-----------------------|--------------|
|                          |                                 |                    |                                  | 10%<br>drop           | 20%<br>drop | 30%<br>drop | 20°C<br>rise          | 40°C<br>rise |
| MSS1038T-821NL_          | 0.82 ±30%                       | 6.0                | 138                              | 9.00                  | 11.16       | 12.10       | 7.30                  | 10.0         |
| MSS1038T-152NL_          | 1.5 ±30%                        | 8.1                | 81                               | 7.40                  | 9.48        | 11.06       | 5.60                  | 7.85         |
| MSS1038T-252NL_          | 2.5 ±30%                        | 10                 | 61                               | 5.70                  | 7.62        | 9.26        | 4.65                  | 6.65         |
| MSS1038T-382NL_          | 3.8 ±30%                        | 13                 | 45                               | 4.94                  | 6.50        | 7.64        | 4.25                  | 6.05         |
| MSS1038T-522NL_          | 5.2 ±30%                        | 22                 | 37                               | 3.96                  | 5.28        | 6.14        | 3.60                  | 5.10         |
| MSS1038T-702NL_          | 7.0 ±30%                        | 27                 | 33                               | 3.62                  | 4.74        | 5.60        | 3.10                  | 4.35         |
| MSS1038T-103NL_          | 10 ±30%                         | 35                 | 29                               | 3.04                  | 3.90        | 4.52        | 2.90                  | 4.05         |
| MSS1038T-123ML_          | 12 ±20%                         | 41                 | 25                               | 2.72                  | 3.48        | 4.04        | 2.85                  | 4.00         |
| MSS1038T-153ML_          | 15 ±20%                         | 50                 | 21                               | 2.84                  | 3.44        | 3.86        | 2.70                  | 3.80         |
| MSS1038T-183ML_          | 18 ±20%                         | 65                 | 18                               | 2.44                  | 3.10        | 3.52        | 2.25                  | 3.35         |
| MSS1038T-223ML_          | 22 ±20%                         | 73                 | 15                               | 2.34                  | 2.94        | 3.30        | 1.90                  | 2.85         |
| MSS1038T-273ML_          | 27 ±20%                         | 89                 | 15                               | 1.98                  | 2.48        | 2.84        | 1.65                  | 2.35         |
| MSS1038T-333ML_          | 33 ±20%                         | 93                 | 13                               | 1.84                  | 2.34        | 2.62        | 1.60                  | 2.30         |
| MSS1038T-393ML_          | 39 ±20%                         | 112                | 12                               | 1.60                  | 2.04        | 2.34        | 1.55                  | 2.25         |
| MSS1038T-473ML_          | 47 ±20%                         | 128                | 11                               | 1.60                  | 1.98        | 2.22        | 1.45                  | 2.20         |
| MSS1038T-563ML_          | 56 ±20%                         | 180                | 11                               | 1.48                  | 1.84        | 2.04        | 1.40                  | 1.85         |
| MSS1038T-683ML_          | 68 ±20%                         | 213                | 10                               | 1.32                  | 1.62        | 1.82        | 1.15                  | 1.75         |
| MSS1038T-823ML_          | 82 ±20%                         | 261                | 8                                | 1.12                  | 1.42        | 1.60        | 1.09                  | 1.50         |
| MSS1038T-104ML_          | 100 ±20%                        | 304                | 6                                | 1.02                  | 1.30        | 1.46        | 1.05                  | 1.45         |
| MSS1038T-124KL_          | 120 ±10%                        | 380                | 6                                | 0.95                  | 1.18        | 1.34        | 0.85                  | 1.25         |
| MSS1038T-154KL_          | 150 ±10%                        | 506                | 6                                | 0.89                  | 1.10        | 1.22        | 0.80                  | 1.20         |
| MSS1038T-184KL_          | 180 ±10%                        | 582                | 5                                | 0.89                  | 1.02        | 1.16        | 0.71                  | 0.98         |
| MSS1038T-224KL_          | 220 ±10%                        | 756                | 5                                | 0.72                  | 0.88        | 0.99        | 0.70                  | 0.97         |
| MSS1038T-274KL_          | 270 ±10%                        | 926                | 4                                | 0.66                  | 0.81        | 0.91        | 0.65                  | 0.86         |
| MSS1038T-334KL_          | 330 ±10%                        | 1090               | 4                                | 0.59                  | 0.73        | 0.82        | 0.50                  | 0.69         |
| MSS1038T-394KL_          | 390 ±10%                        | 1141               | 4                                | 0.51                  | 0.65        | 0.74        | 0.49                  | 0.65         |
| MSS1038T-474KL_          | 470 ±10%                        | 1243               | 3                                | 0.50                  | 0.62        | 0.70        | 0.45                  | 0.63         |
| MSS1038T-564KL_          | 560 ±10%                        | 1696               | 3                                | 0.43                  | 0.53        | 0.56        | 0.43                  | 0.59         |
| MSS1038T-684KL_          | 680 ±10%                        | 1926               | 3                                | 0.38                  | 0.48        | 0.52        | 0.36                  | 0.50         |
| MSS1038T-824KL_          | 820 ±10%                        | 2596               | 3                                | 0.37                  | 0.46        | 0.49        | 0.34                  | 0.47         |
| MSS1038T-105KL_          | 1000 ±10%                       | 2853               | 3                                | 0.35                  | 0.43        | 0.46        | 0.33                  | 0.45         |

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

**MSS1038T-105KLC**

**Termination:** L = RoHS compliant matte tin over nickel 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 (250 parts per full reel). Quantities less than full reel available: in tape (not machine ready) or with leader and trailer (\$25 charge).

D = 13" machine-ready reel. EIA-481 embossed plastic tape. Factory order only, not stocked (1000 parts per full reel).

B = Less than full reel. In an effort to simplify our part numbering system, Coilcraft is eliminating the need for multiple packaging codes. When ordering, simply change the last letter of your part number from B to C.

2. Inductance measured at 100 kHz, 0.1 Vrms, 0 Adc using an Agilent/HP 4263B LCR meter or equivalent.
3. SRF measured using an Agilent/HP 8753D or equivalent.
4. DC current at 25°C that causes the specified inductance drop from its value without current. [Click for temperature derating information.](#)
5. Current that causes the specified temperature rise from 25°C ambient. This information is for reference only and does not represent absolute maximum ratings. [Click for temperature derating information.](#)
6. Electrical specifications at 25°C.  
Refer to Doc 362 "Soldering Surface Mount Components" before soldering.



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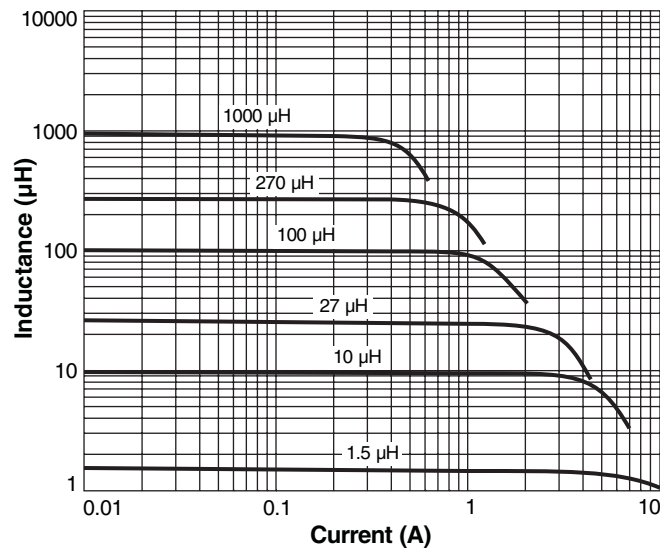
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This product may not be used in medical or high risk applications without prior Coilcraft approval. Specification subject to change without notice. Please check web site for latest information.

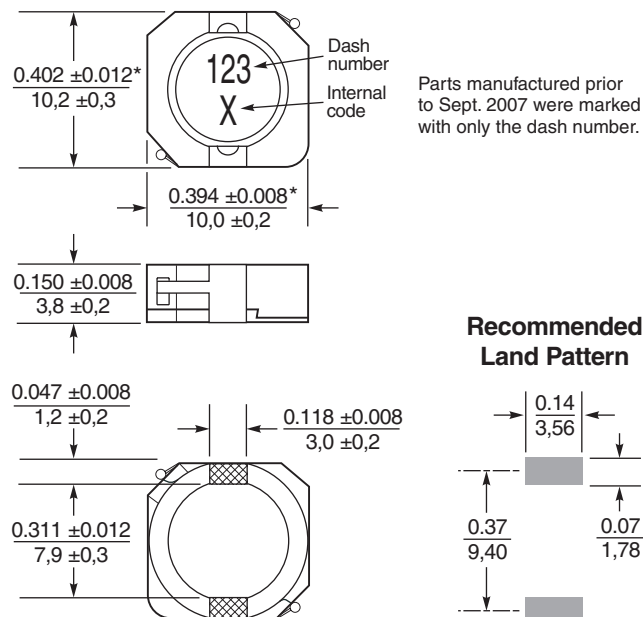
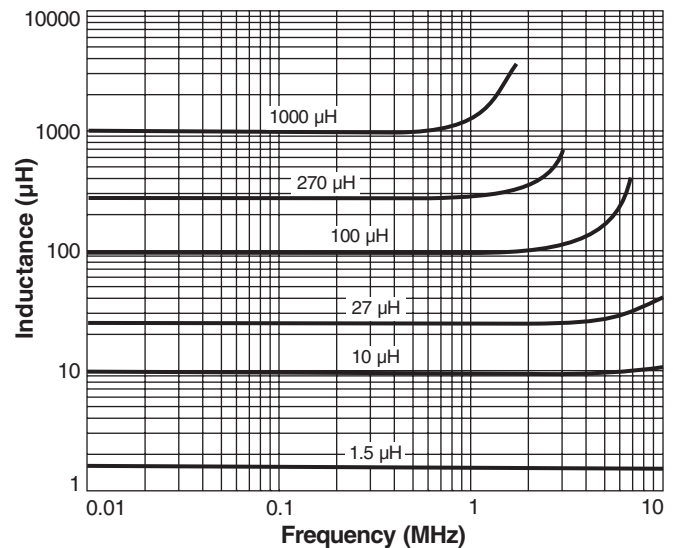
# HIGH TEMPERATURE

## SMT Power Inductors – MSS1038T

### Typical L vs Current



### Typical L vs Frequency



\*Dimensions are of the case not including the termination.  
For maximum overall dimensions including the termination,  
add 0.005 in / 0.13 mm.

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

# Mouser Electronics

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