

# Electric Power Steering (EPS) Common Mode Choke

## HA19 Series

### Features:

- Operating temperature range -40°C to +125°C
- Rated current up to 44 amps
- Ambient temperature, maximum +85°C
- Temperature rise, maximum 40°C
- Reduces line conducted interference
- Low loss ferrite core
- Proven performance in maintaining transmission signal integrity
- Excellent performance in rugged environments
- RoHS compliant
- AEC-Q200 certified



All parts are Pb free and comply with EU RoHS Directive 2011/65/EU with amendment EU 2015/863 (RoHS 3)

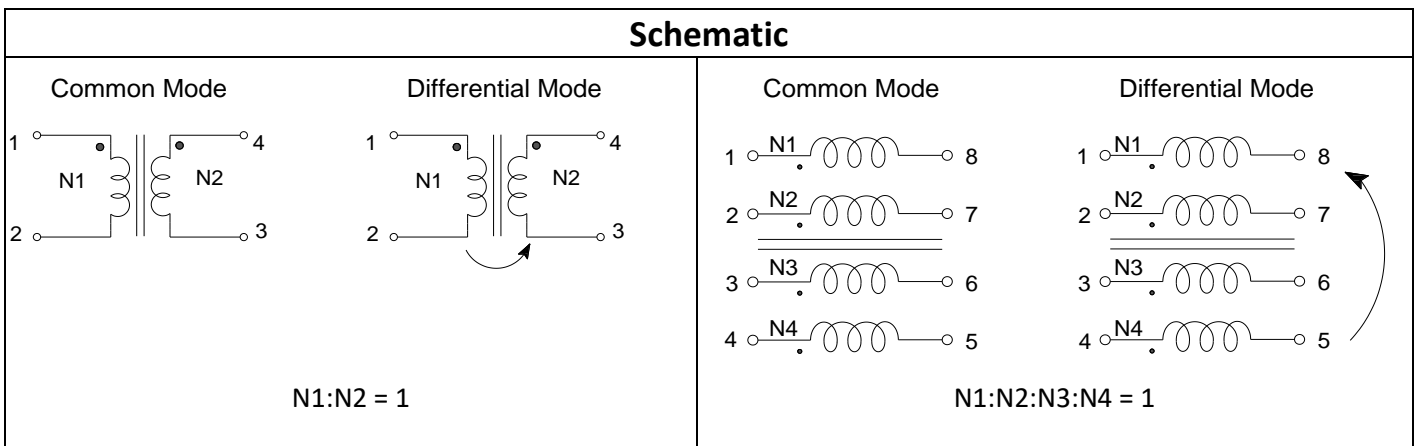
### Description:

The HA19 common mode choke is designed specifically for noise suppression applications found in the growth and expansion of new generation vehicles such as electric vehicles (EVs) and plug-in hybrid vehicles (PHVs). The HA19 series offer high efficiency and excellent current handling in a rugged construction. It is mechanically robust and features low DC resistance and low temperature rise performance. HA19 is ideal for high efficiency electric power steering EMI applications where size and AEC-Q200 certification is critical.

### Applications:

- Ideal for high frequency EPS noise suppression applications
- Transportation
  - Electric Power Steering
  - Electronic Control Units
  - Engine Control
  - Transmission Control
- Industrial
  - Switch Mode Power Supply
  - DC/DC Converters

### Schematic



Schematic 1

Schematic 2

#### General Note

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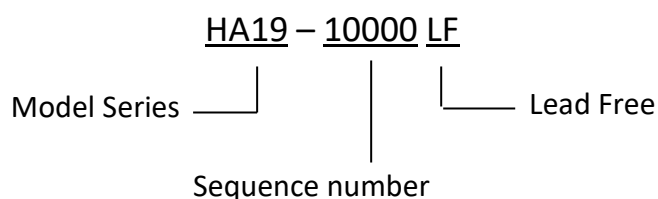
### Specifications @ 25°C

Part Number	Inductance μH Min.	Rated Current Amps Typ.	DC Resistance mΩ Max.	Leakage Inductance μH Min.	Schematic	Figure
HA19-10000LF	75.0	26.5	1.70	0.90	1	1
HA19-20000LF	75.0	28.0	1.30	0.90	1	1
HA19-30000LF	11.0	44.0	1.00	0.07	1	2
HA19-40000LF	84.6	28.5	1.40	0.65	1	3
HA19-50000LF	20.8	25.0	1.20	-	1	4
HA19-60000LF	75.0	22.0	2.30	0.90	2	5

#### Notes:

- Inductance and leakage inductance are measured at 10kHz, 0.1Vrms.
- Rated current is the approximate DC current at which DT is 40°C. Part temperature should be verified in the end application. The part temperature (ambient plus temperature rise) should not exceed 125°C under worst case operating conditions.
- Schematic 1:**
  - Inductance and DCR are measured at N1 or N2
  - Leakage inductance is measured at N1 (pin 1-2) with N2 (pin 4-3) winding shorted
- Schematic 2:**
  - Inductance and DCR are measured at N1, N2, N3 or N4.
  - Leakage inductance is measured at pin (1-3) or (2-4) with other pins shorted

### Ordering Information



Packaging	
Part Number	One shipping carton
HA19-10000LF	400pcs
HA19-20000LF	400pcs
HA19-30000LF	280pcs
HA19-40000LF	400pcs
HA19-50000LF	396pcs
HA19-60000LF	210pcs

#### General Note

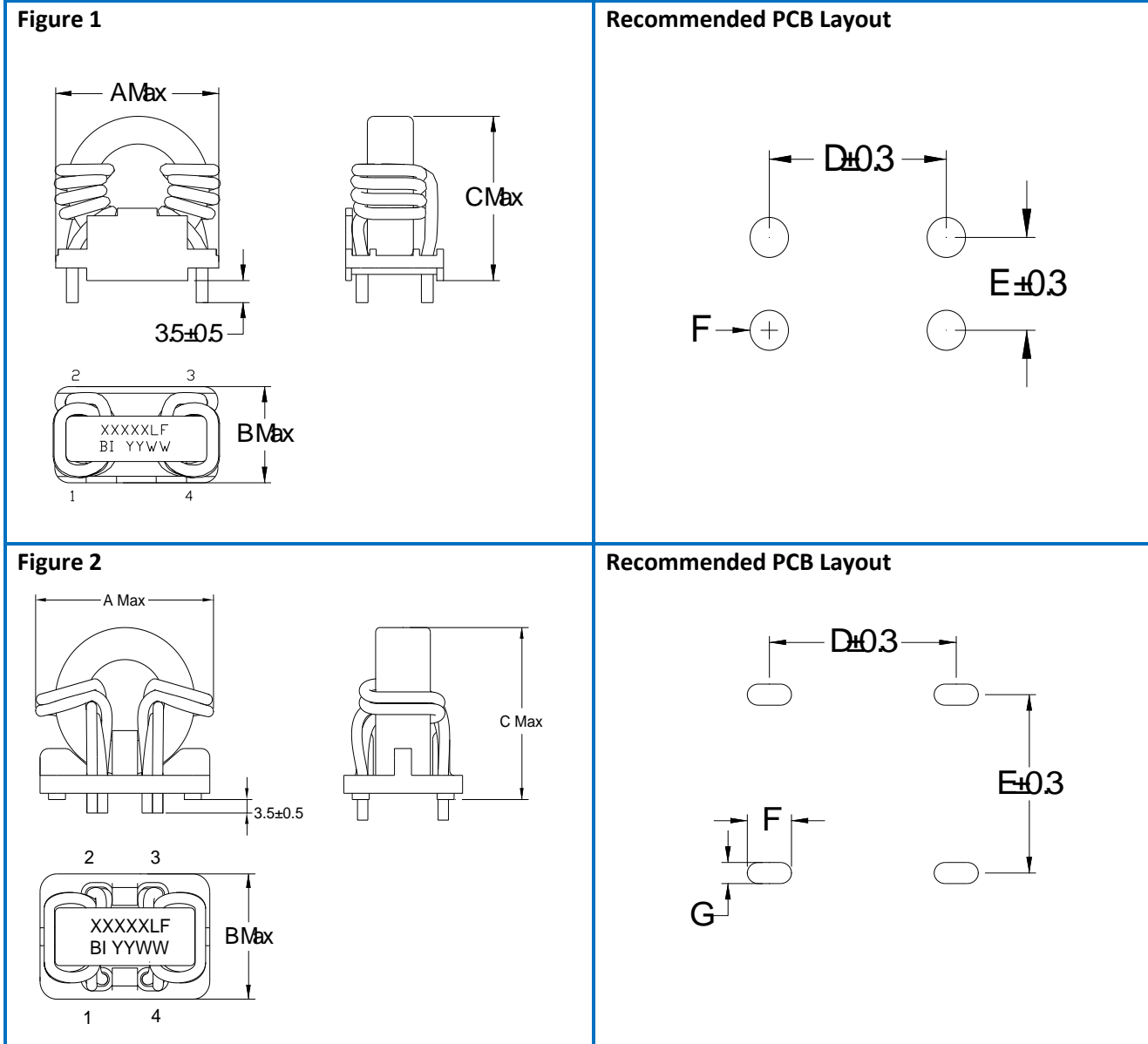
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### Outline Dimensions (mm)

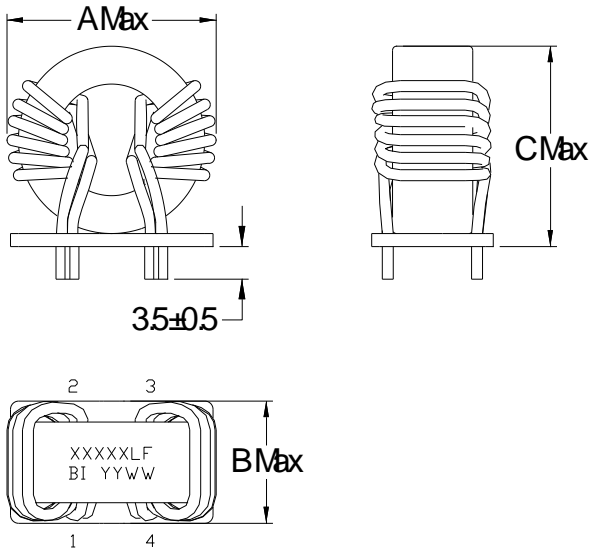
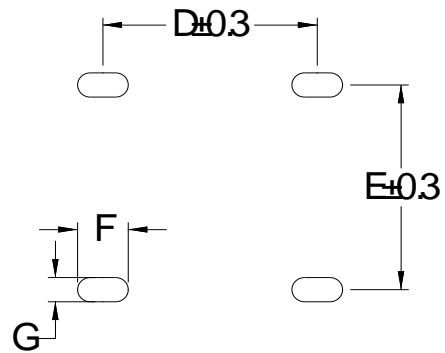
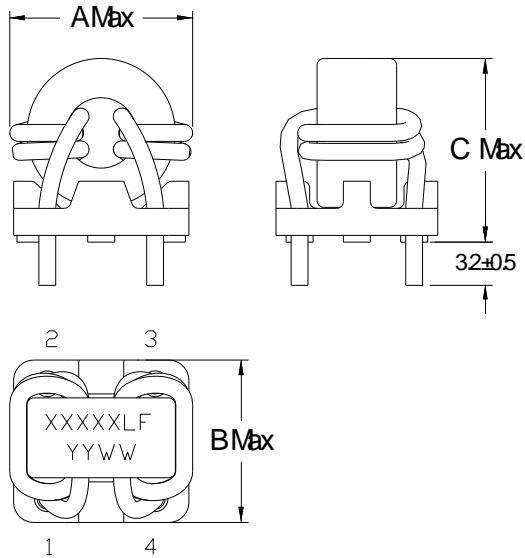
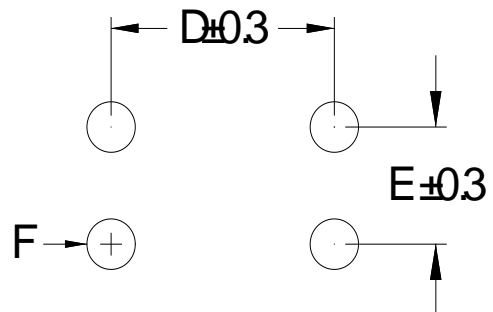


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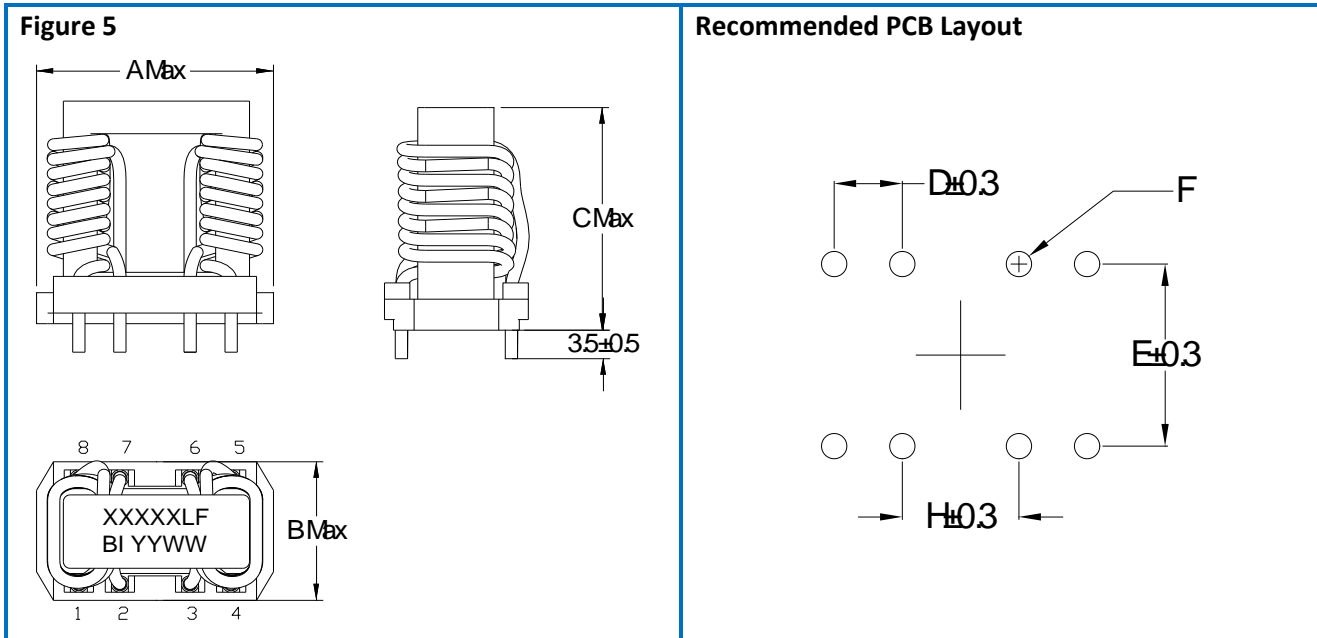
**Figure 3**

**Recommended PCB Layout**

**Figure 4**

**Recommended PCB Layout**

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Part Number	Figure	A	B	C	D	E	F	G	H
HA19-10000LF	1	29.4	15.5	26.4	20.3	10.2	2.2	-	-
HA19-20000LF	1	29.4	15.5	26.4	20.3	10.2	2.4	-	-
HA19-30000LF	2	23.0	13.0	20.5	6.5	9.5	2.9	1.60	-
HA19-40000LF	3	27.0	15.5	25.0	11.0	11.0	3.0	1.50	-
HA19-50000LF	4	16.0	12.5	15.0	8.0	8.5	1.9	-	-
HA19-60000LF	5	30.0	20.0	30.5	4.85	13	2.0	-	8.3

**General Note**

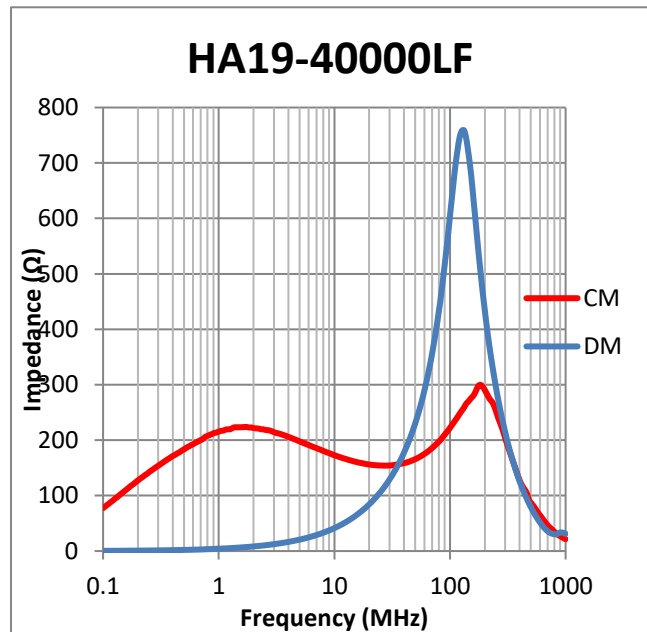
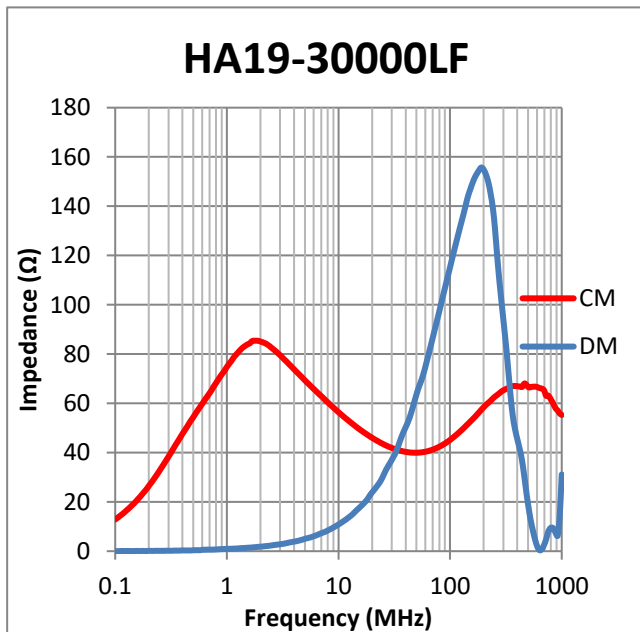
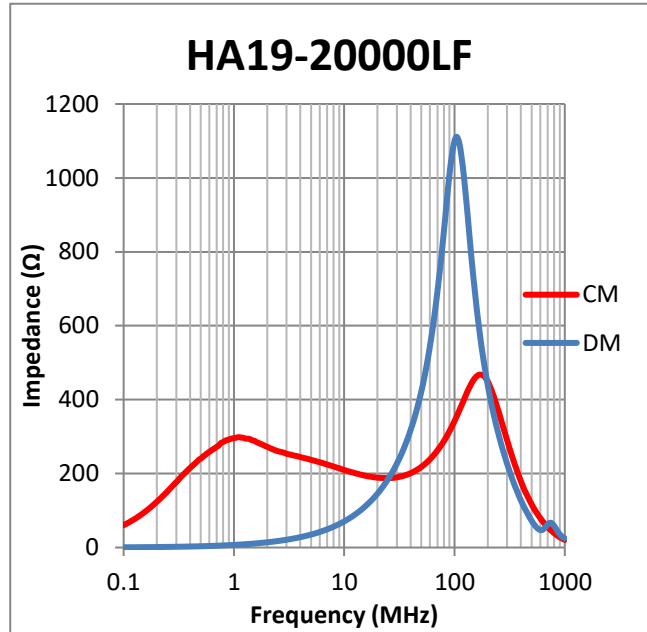
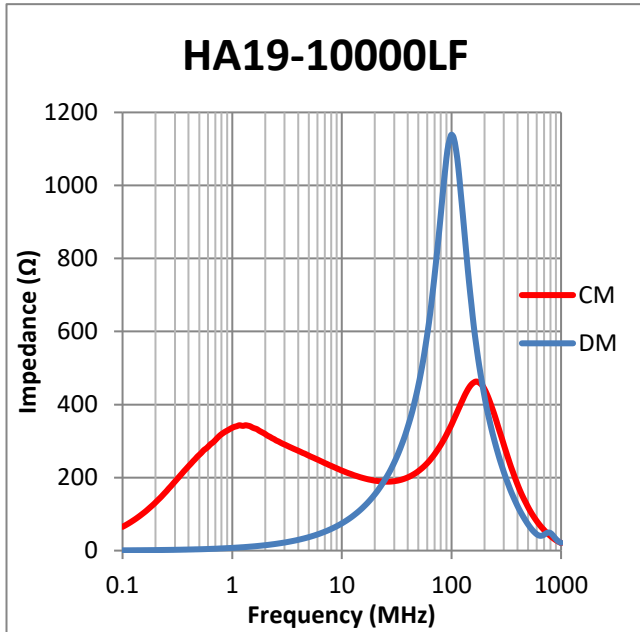
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### Impedance



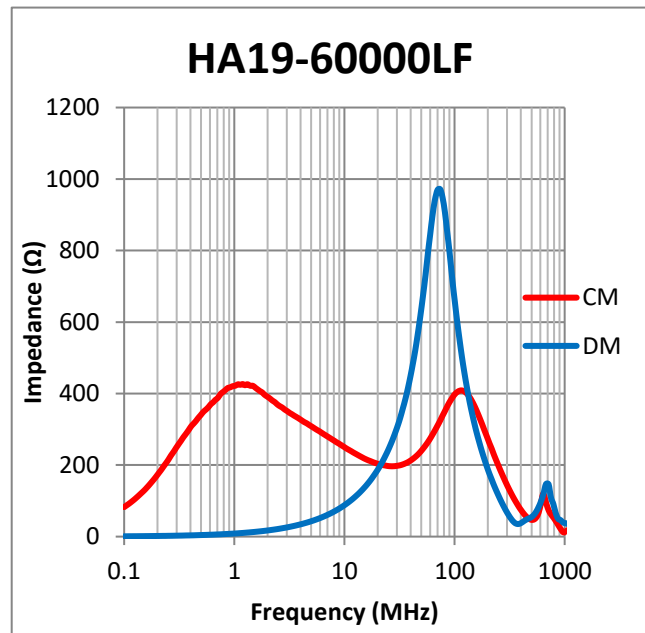
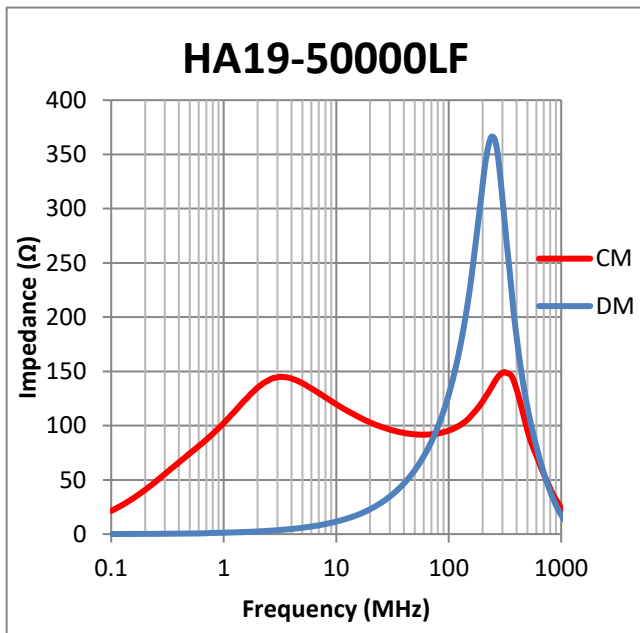
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