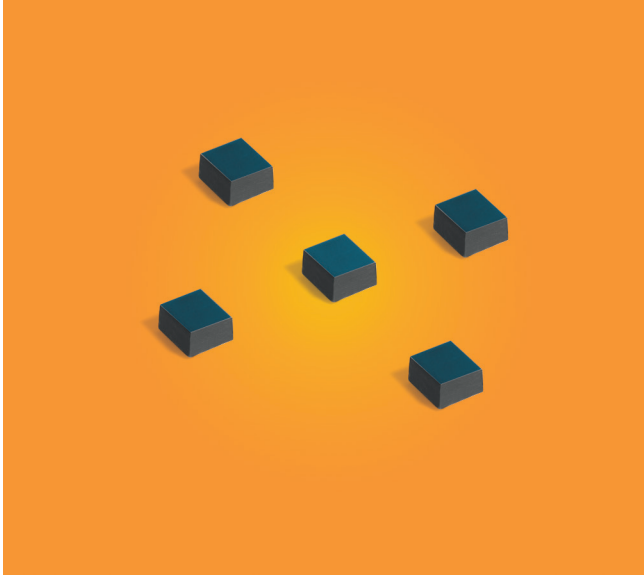


Outgassing Compliant Power Inductors AE338PWA



- High temperature materials allow operation in ambient temperatures up to 155°C
- Passes NASA low outgassing specifications
- Very low DCR and excellent current handling.
- Soft saturation makes them ideal for VRM/VRD applications.
- Tin-lead (Sn-Pb) termination for the best possible board adhesion
- Special construction allows it to pass vibration testing to 30 G and shock testing to 500 G.
- Special coating added to ensure DWV compliance (CP-Z1176)*

Weight 22 mg

Terminations Tin-lead (63/37) over tin over nickel over silver.

Ambient temperature -55°C to +105°C with Irms 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

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

| Part number ¹ | Inductance ² ±20% (µH) | DCR (Ohms) ³ | | SRF (MHz) ⁴ | | Isat (A) ⁵ | | | Irms (A) ⁶ | |
|--------------------------|--------------------------------------|-------------------------|-------|------------------------|-----|-----------------------|----------|----------|-----------------------|-----------|
| | | nom | max | min | typ | 10% drop | 20% drop | 30% drop | 20°C rise | 40°C rise |
| AE338PWA201MSZ | 0.20 | 0.024 | 0.027 | 286 | 408 | 2.80 | 3.45 | 3.75 | 2.2 | 2.8 |
| AE338PWA331MSZ | 0.33 | 0.031 | 0.035 | 175 | 250 | 1.90 | 2.75 | 3.05 | 1.9 | 2.6 |
| AE338PWA501MSZ | 0.50 | 0.040 | 0.045 | 153 | 218 | 1.80 | 2.35 | 2.64 | 1.7 | 2.3 |
| AE338PWA681MSZ | 0.68 | 0.057 | 0.063 | 106 | 152 | 1.55 | 1.95 | 2.19 | 1.5 | 2.1 |
| AE338PWA821MSZ | 0.82 | 0.068 | 0.075 | 93 | 132 | 1.25 | 1.65 | 1.90 | 1.3 | 1.7 |
| AE338PWA102MSZ | 1.0 | 0.081 | 0.089 | 82 | 117 | 1.20 | 1.60 | 1.80 | 1.1 | 1.6 |
| AE338PWA152MSZ | 1.5 | 0.105 | 0.116 | 56 | 80 | 0.950 | 1.30 | 1.50 | 1.0 | 1.4 |
| AE338PWA222MSZ | 2.2 | 0.156 | 0.173 | 53 | 75 | 0.940 | 1.20 | 1.35 | 0.96 | 1.3 |
| AE338PWA332MSZ | 3.3 | 0.207 | 0.228 | 39 | 55 | 0.700 | 0.925 | 1.05 | 0.79 | 1.1 |
| AE338PWA472MSZ | 4.7 | 0.336 | 0.370 | 28 | 40 | 0.580 | 0.750 | 0.845 | 0.74 | 1.0 |
| AE338PWA682MSZ | 6.8 | 0.421 | 0.463 | 23 | 33 | 0.450 | 0.620 | 0.725 | 0.64 | 0.87 |
| AE338PWA822MSZ | 8.2 | 0.457 | 0.503 | 21 | 30 | 0.440 | 0.600 | 0.670 | 0.55 | 0.75 |
| AE338PWA103MSZ | 10 | 0.555 | 0.611 | 20 | 28 | 0.390 | 0.525 | 0.610 | 0.49 | 0.66 |

1. When ordering, please specify **screening** code:

AE338PWA103MSZ

Screening: **Z** = Unscreened
Y = Unscreened (SLDC Option A)
W = Unscreened (SLDC Option B)
H = Group A screening per Coilcraft CP-SA-10001
G = Coilcraft CP-SA-10001 Group A (SLDC Option A)
D = Coilcraft CP-SA-10001 Group A (SLDC Option B)

*AE338PWA and CP-Z1176 are drop-in replacements.
 For additional screening options, use part number CP-Z1176-xxxMSx
 and specify **screening** code:

CP-Z1176-103MSZ

- 1 = EEE-INST-002 (Family 1) Level 1
- 2 = EEE-INST-002 (Family 1) Level 2
- 3 = EEE-INST-002 (Family 1) Level 3
- 4 = MIL-STD-981 (Family 04) Class B
- 5 = MIL-STD-981 (Family 04) Class S
- F = ESCC3201 (F4 operational life performed at 105°C)
 - Screening performed to the document's latest revision.
 - Custom testing also available.

2. Inductance tested at 100 kHz, 0.1 Vrms, 0 Adc.

3. DCR measured on a micro-ohmmeter.

4. SRF measured using Agilent/HP 4395A 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.

Coilcraft CPS
 CRITICAL PRODUCTS & SERVICES

1102 Silver Lake Road
 Cary, IL 60013
 Phone 800-981-0363

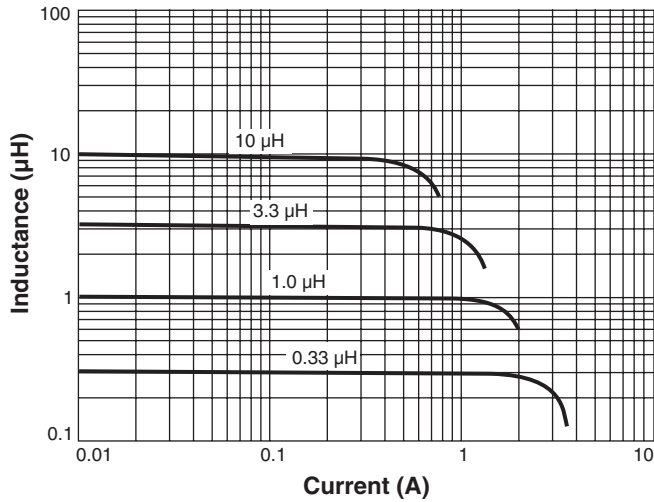
Fax 847-639-1508
 Email cps@coilcraft.com
 www.coilcraft-cps.com

Document AE646-1 Revised 04/11/25

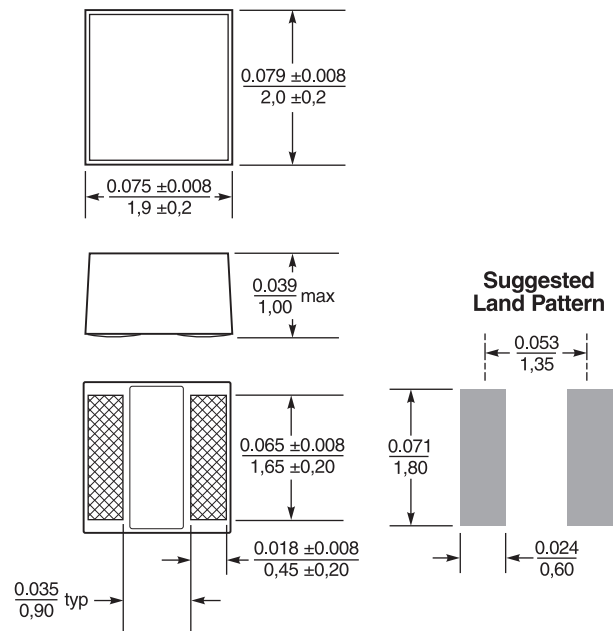
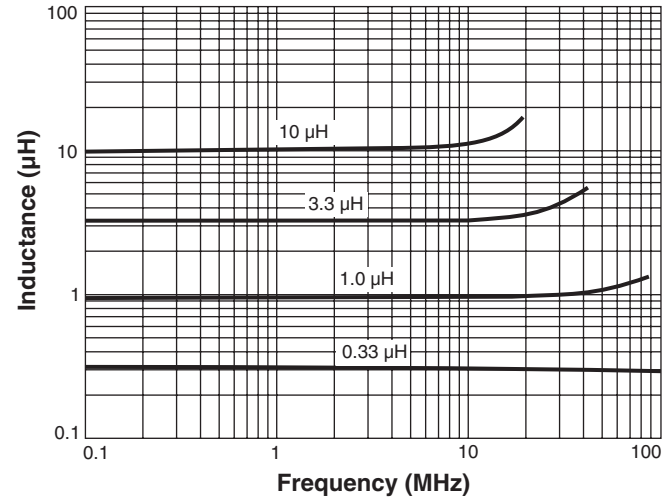
This product may not be used in medical or high risk applications without prior Coilcraft approval. Specifications subject to change without notice. Please check our web site for latest information.

AE338PWA Series

Typical L vs Current



Typical L vs Frequency



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

Enhanced crush-resistant packaging 1000/7" reel
 Plastic tape: 8 mm wide, 0.23 mm thick, 4 mm pocket spacing,
 1.19 mm pocket depth

