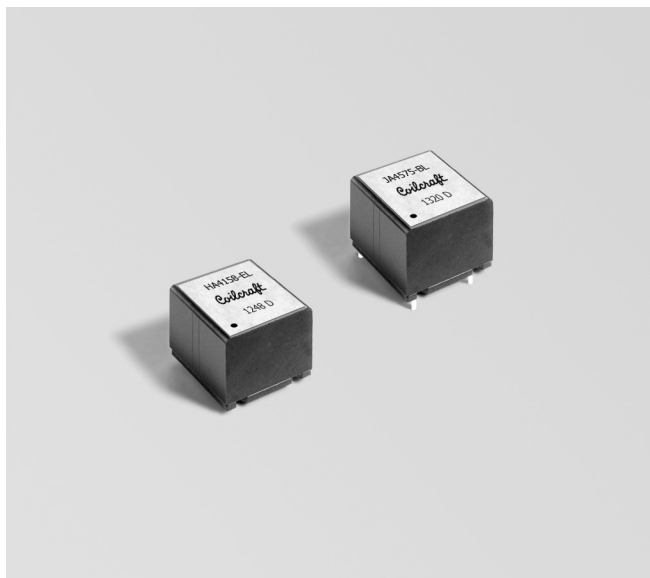




Dual Inductors for Class D



- Dual inductors for use in Class D output filters
- A single shielded package contains both coils.
- Very low magnetic coupling
- AEC-Q200 Grade 1 qualified
- SMT (HA4158-EL) and through-hole (JA4575-BL) versions
- HA4158-BL and JA4575-AL not recommended for new designs
- Designed for low distortion and the best sound quality

Core material Ferrite

Terminations RoHS compliant tin-silver (96.5/3.5) over copper.

Weight 5.0 g

Ambient temperature -40°C to +125°C with Irms current

Maximum part temperature +165°C (ambient + temp rise)

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)

Failures in Time (FIT) / Mean Time Between Failures (MTBF)

38 per billion hours / 26,315,789 hours, calculated per Telcordia SR-332

PCB washing Tested to MIL-STD-202 Method 215 plus an additional aqueous wash. See [Doc787_PCB_Washing.pdf](#).

Part number ¹	Maximum power (W) ²		Inductance ³ ±10% (µH)	DCR max ⁴ (Ohms)	SRF typ ⁵ (MHz)	THD+N ⁶ (%)	Isat (A) ⁷			Irms (A) ⁸	
	2 Ohm load	4 Ohm load					10% drop	20% drop	30% drop	20°C rise	40°C rise
HA4158-EL_	48	68	10.0	0.013	21.5	<0.1	6.0	6.7	7.1	4.0	6.0
JA4575-BL_	48	68	10.0	0.013	21.5	<0.1	6.0	6.7	7.1	4.0	6.0

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

HA4158-ELD

Packaging: **D** = 13" machine-ready reel. EIA-481 embossed plastic tape.

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. Maximum power into specified load that causes less than a 40°C temperature rise. Measured at 1 kHz with a 14.4 Vdc supply for the 2-Ohm load and a 21 Vdc supply for the 4-Ohm load. Refer to Output Power table for typical output conditions. Tested using the TAS5414A Evaluation Board from Texas Instruments.

3. Inductance measured at 100 kHz, 1.0 Vrms, 0 Adc using an Agilent/HP 4284A impedance analyzer.

4. DCR is for each winding, measured on a micro-ohmmeter.

5. SRF measured using Agilent/HP 8753D network analyzer.

6. Total harmonic distortion + noise measured at 20 W into a 2-Ohm or 4-Ohm load at 1 kHz with a 21 Vdc supply.

7. DC current (typical) at which the inductance drops the specified amount from its value without current.

8. Current applied to both windings at the same time that causes the specified temperature rise from 25°C ambient. This information is for reference only and does not represent absolute maximum ratings.

9. Electrical specifications at 25°C.

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

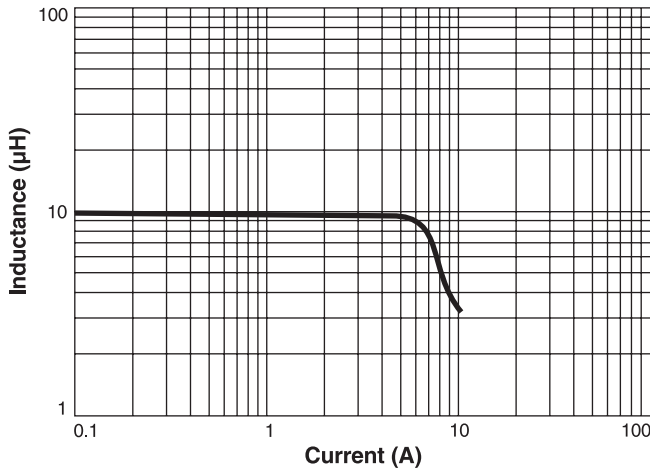
Output Power

Power typ (W)	Temperature rise from 25°C (°C)	Load	THD+N	Test condition
22	10.0	4 Ohm	1%	1 kHz, 14.4 Vdc
26	10.2	4 Ohm	10%	1 kHz, 14.4 Vdc
46	21.8	4 Ohm	1%	1 kHz, 21 Vdc
56	22.8	4 Ohm	10%	1 kHz, 21 Vdc
36	27.8	2 Ohm	1%	1 kHz, 14.4 Vdc
44	25.1	2 Ohm	10%	1 kHz, 14.4 Vdc

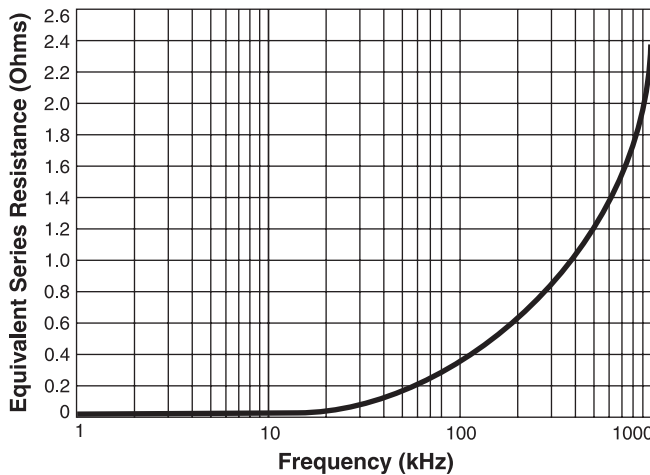


Class D Dual Inductors

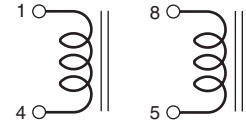
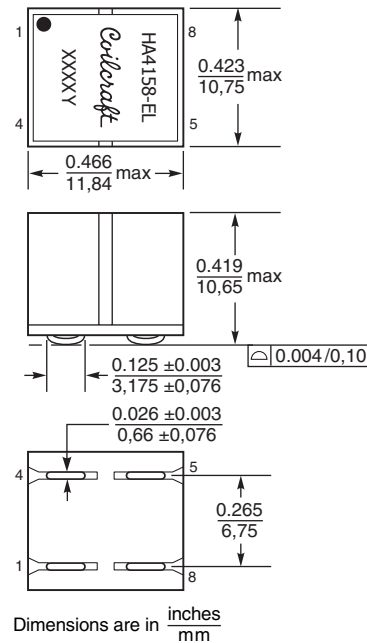
L vs Current



ESR vs Frequency

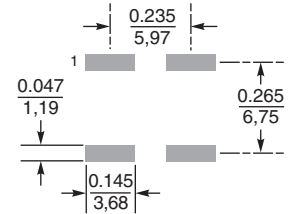


HA4158-EL (SMT version)



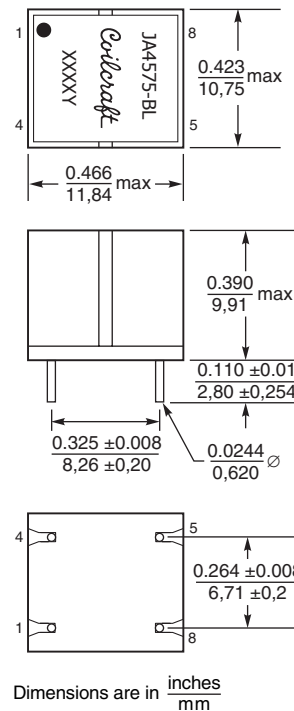
Recommended Land Pattern

with a 0.006 inch / 0.1524 mm solder screen thickness

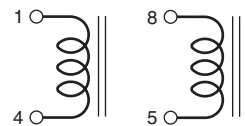


Packaging 400/13" reel Plastic tape: 24 mm wide, 0.5 mm thick, 16 mm pocket spacing, 10.8 mm pocket depth

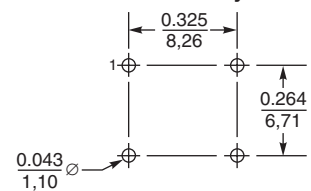
JA4575-BL (Through-hole version)



Parts manufactured prior to December 2011 may be marked differently.



Recommended PC Board Layout



Packaging 250/13" reel Plastic tape: 24 mm wide, 0.5 mm thick, 20 mm pocket spacing, 13.84 mm pocket depth