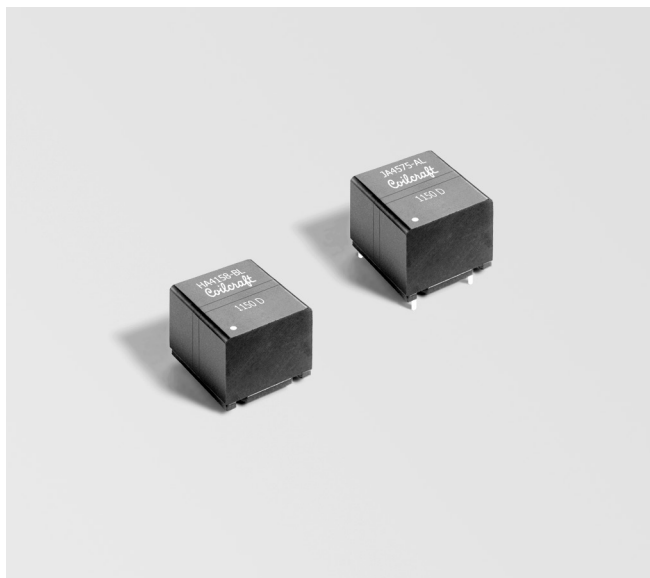




# Dual Inductors for Class-D



- Dual inductors for use in Class D output filters
- Shielded package contains both coils
- Very low magnetic coupling
- AEC-Q200 Grade 1 qualified
- SMT (HA4158-BL) and through-hole (JA4575-AL) versions
- 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

**Coplanarity (HA4158-BL)** 0.004 in / 0,10 mm

**Ambient temperature** -40°C to +125°C with Irms current, +125°C to +165°C with derated current

**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)

**PCB washing** Tested with pure water or alcohol only. For other solvents, see Doc787\_PCB\_Washing.pdf.

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

**Packaging:** **D** = 13" machine-ready reel. EIA-481 embossed plastic tape. Quantities less than full reel available: in tape (not machine ready) or with leader and trailer (\$25 charge).

**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 D.

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 windings connected in series that causes the specified temperature rise from 25°C ambient.

9. Electrical specifications at 25°C.

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

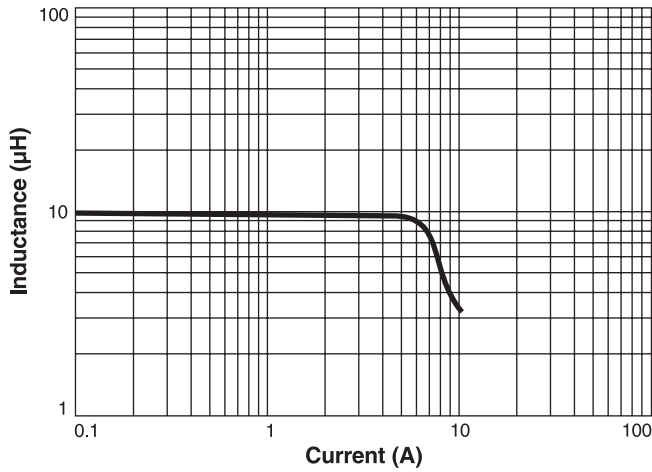
## Output Power

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

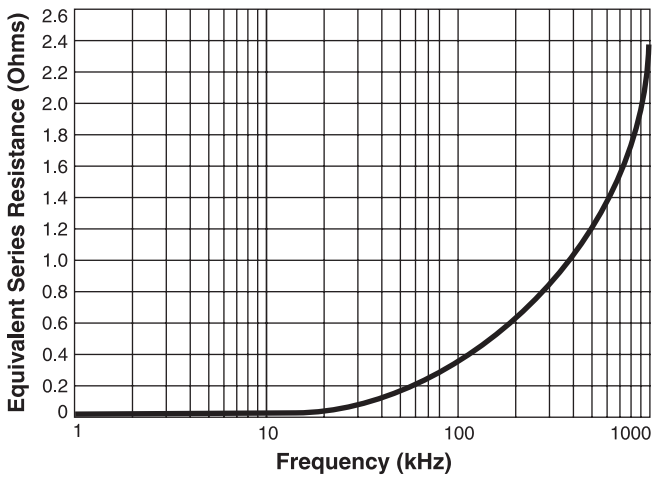


# Class-D Dual Inductors

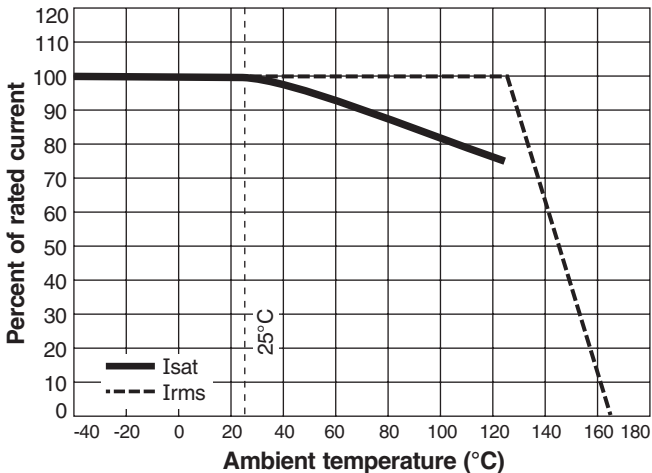
## L vs Current



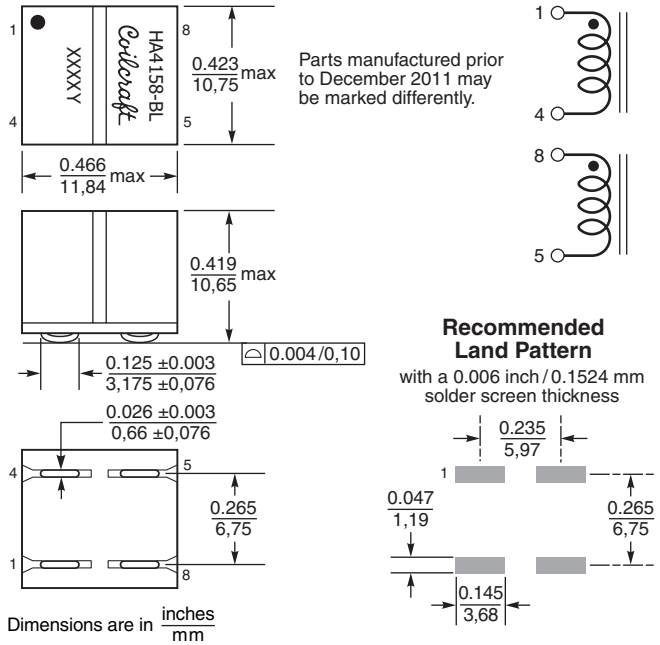
## ESR vs Frequency



## Current Derating

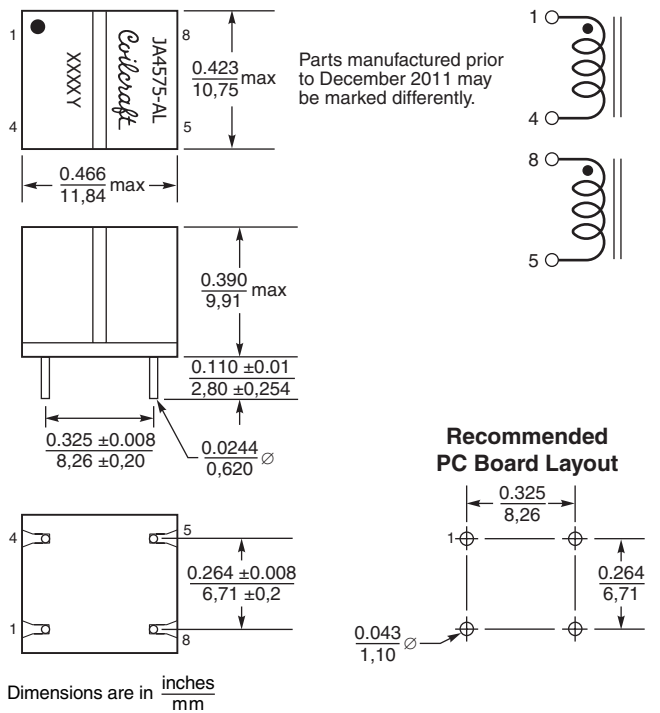


## HA4158-BL (SMT version)



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

## JA4575-AL (Through-hole version)



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



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