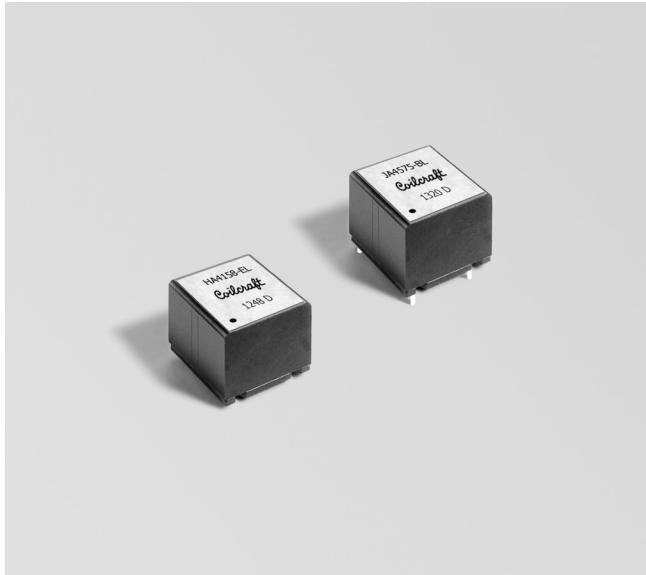


# Dual Inductors for Class D



- 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 <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-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.

- 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.
- Inductance measured at 100 kHz, 1.0 Vrms, 0 Adc using an Agilent/HP 4284A impedance analyzer.
- DCR is for each winding, measured on a micro-ohmmeter.
- SRF measured using Agilent/HP 8753D network analyzer.
- Total harmonic distortion + noise measured at 20 W into a 2-Ohm or 4-Ohm load at 1 kHz with a 21 Vdc supply.
- DC current (typical) at which the inductance drops the specified amount from its value without current.
- 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.
- Electrical specifications at 25°C.

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

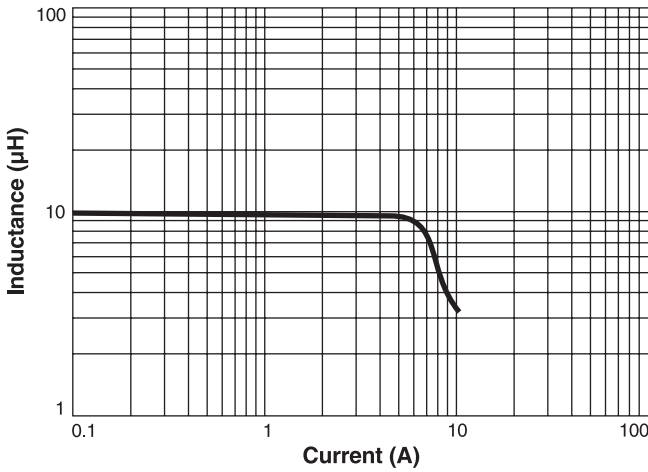
## Output Power

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

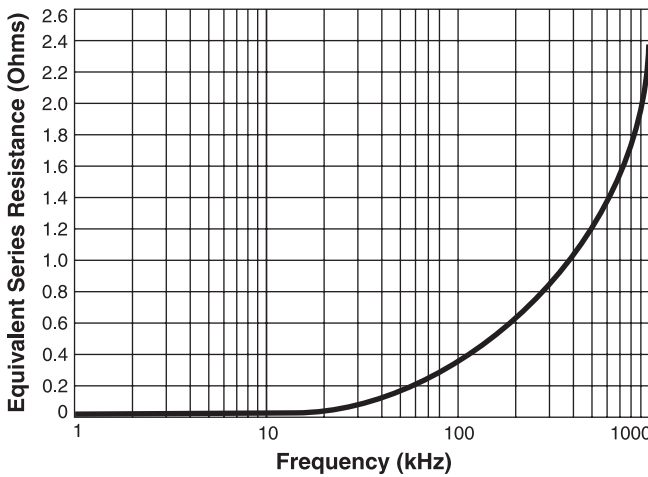


# Class D Dual Inductors

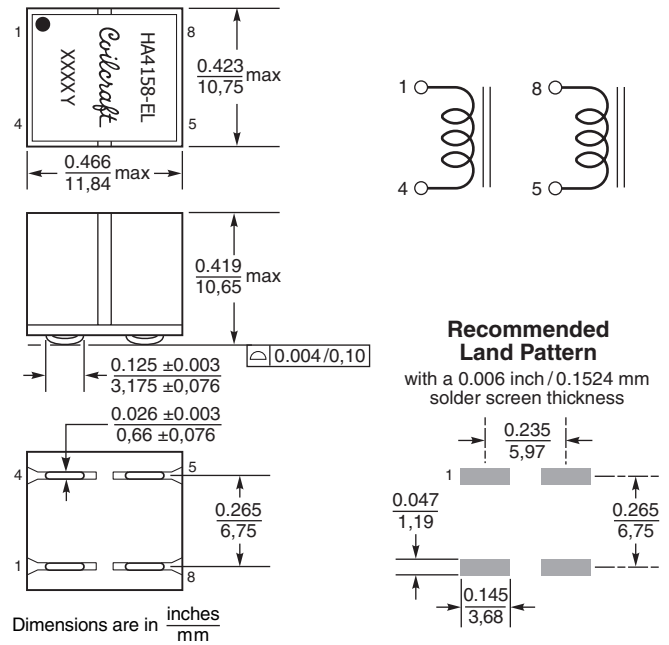
## L vs Current



## ESR vs Frequency



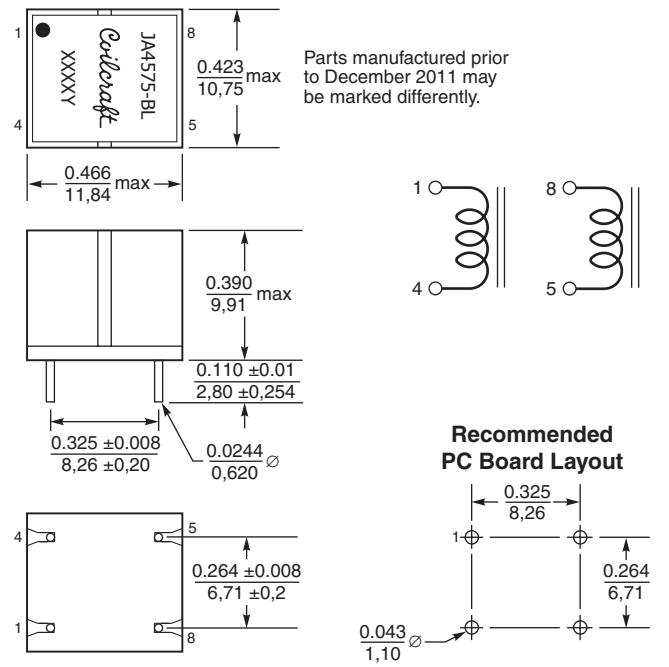
## HA4158-EL (SMT version)



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

**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)



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

**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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