

Coupled Inductor – JA4590-AL



- Developed for Texas Instruments TPS40210 Current Mode Boost Controller.
- 1 : 1 coupled inductor with a coupling coefficient >0.95.
- Can be used as a transformer or as an inductor in SEPIC and Zeta applications.

Core material Ferrite

Terminations RoHS compliant matte tin over nickel over phos bronze.

Weight 10.8 g

Ambient temperature –40°C to +85°C with Irms current, +85°C to +125°C with derated current

Storage temperature Component: –40°C to +125°C.

Tape and reel packaging: –40°C to +80°C

Winding to winding isolation 500 Vrms

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

Packaging 175/13" reel; Plastic tape: 32 mm wide, 0.5 mm thick, 24 mm pocket spacing, 14.3 mm pocket depth

PCB washing Tested with pure water or alcohol only. For other solvents, see Doc787_PCB_Washing.pdf.

Part number ¹	Inductance ² ±10% (µH)	DCR max ³ (Ohms)	SRF typ ⁴ (MHz)	Leakage inductance ⁵ max (µH)	Isat ⁶ (A)	Irms (A)	
						both windings ⁷	one winding ⁸
JA4590-AL_	22	0.028	8.0	0.30	7.8	4.20	5.94

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

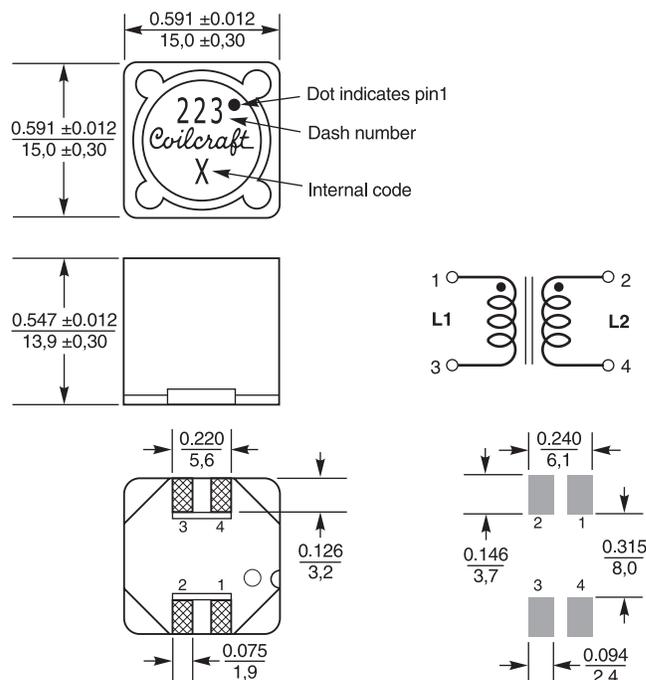
JA4590-ALD

Packaging: **D** = 13" machine-ready reel. EIA-481 embossed plastic tape (175 parts per full reel).

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.

- Inductance shown for each winding, measured at 100 kHz, 0.1 Vrms, 0 Adc on an Agilent/HP 4284A LCR meter or equivalent. When leads are connected in parallel, inductance is the same value. When leads are connected in series, inductance is four times the value.
- DCR is for each winding. When leads are connected in parallel, DCR is half the value. When leads are connected in series, DCR is twice the value.
- SRF measured using an Agilent/HP 4191A or equivalent. When leads are connected in parallel, SRF is the same value.
- Leakage inductance is for one winding.
- DC current, at which the inductance drops 20% (typ) from its value without current. It is the sum of the current flowing in both windings.
- Equal current when applied to each winding simultaneously that causes a 40°C temperature rise from 25°C ambient.
- Maximum current when applied to one winding that causes a 40°C temperature rise from 25°C ambient.

Refer to Doc 639 "Selecting Coupled Inductors for SEPIC Applications."
Refer to Doc 362 "Soldering Surface Mount Components" before soldering.



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

Recommended Land Pattern



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Document 852-1 Revised 06/06/12

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