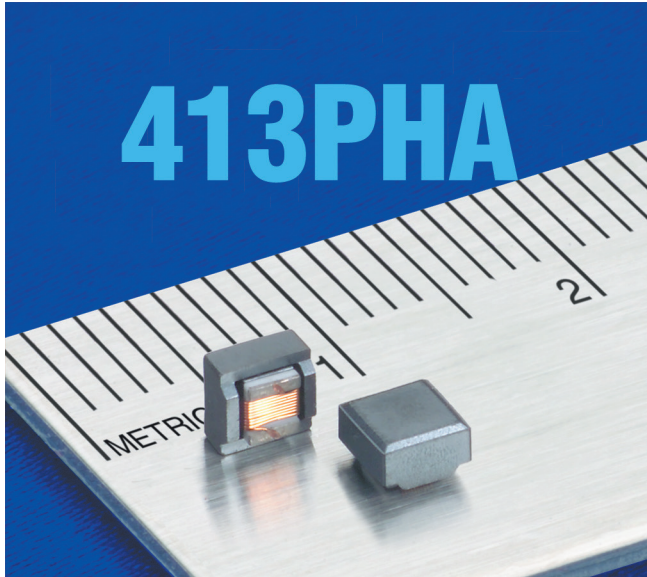


# Power Inductor for Critical Applications ST413PHA



- Shielded power inductors
- Excellent current handling for a part this size; low DCR

**Core material** Ceramic/Ferrite

**Terminations** Silver-palladium-platinum-glass frit. Other terminations available at additional cost.

**Weight** 116– 143 mg

**Ambient temperature** –40°C to +105°C with Irms current

**Maximum part temperature** +145°C (ambient + temp rise)

**Storage temperature** Component: –55°C to +145°C.  
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)

**Packaging** 750/7" reel; 2500/13" reel Plastic tape: 12 mm wide, 0.3 mm thick, 8 mm pocket spacing, 3.3 mm pocket depth

Part number <sup>1</sup>	Inductance ±10% <sup>2</sup> (µH)	Q min <sup>3</sup>	DCR <sup>4</sup> max (Ohms)	SRF <sup>5</sup> typ (MHz)	Isat (A) <sup>6</sup>			Irms (A) <sup>7</sup>	
					10% drop	20% drop	30% drop	20°C rise	40°C rise
ST413PHA102KLZ	1.0	35	0.05	387	3.5	3.9	4.2	1.4	2.0
ST413PHA152KLZ	1.5	35	0.06	276	2.7	3.2	3.5	1.4	2.0
ST413PHA182KLZ	1.8	35	0.09	253	2.3	2.7	3.0	0.98	1.4
ST413PHA222KLZ	2.2	36	0.10	228	2.4	2.8	3.1	1.2	1.7
ST413PHA272KLZ	2.7	38	0.14	207	1.6	2.0	2.3	1.0	1.4
ST413PHA332KLZ	3.3	26	0.84	199	1.5	1.6	1.6	0.51	0.67
ST413PHA392KLZ	3.9	38	0.26	185	1.5	1.8	2.0	0.82	1.1
ST413PHA472KLZ	4.7	38	0.35	160	1.3	1.6	1.7	0.70	0.95
ST413PHA562KLZ	5.6	38	0.36	150	1.5	1.7	1.8	0.66	0.87
ST413PHA682KLZ	6.8	38	0.58	120	1.3	1.5	1.6	0.45	0.76
ST413PHA103KLZ	10	38	0.92	105	0.84	1.0	1.1	0.40	0.59
ST413PHA153KLZ	15	38	1.15	35	0.81	0.87	0.90	0.36	0.51
ST413PHA223KLZ	22	40	1.40	26	0.67	0.75	0.79	0.33	0.44
ST413PHA333KLZ	33	45	1.61	20	0.53	0.61	0.68	0.30	0.42
ST413PHA393KLZ	39	45	1.85	16	0.49	0.56	0.60	0.28	0.39
ST413PHA473KLZ	47	45	2.5	19	0.47	0.52	0.54	0.23	0.31
ST413PHA683KLZ	68	45	3.8	12	0.38	0.42	0.45	0.21	0.26
ST413PHA823KLZ	82	45	4.3	9.0	0.33	0.38	0.42	0.18	0.26
ST413PHA104KLZ	100	45	5.8	7.0	0.35	0.38	0.39	0.16	0.20
ST413PHA124KLZ	120	50	6.3	7.0	0.30	0.33	0.35	0.14	0.20
ST413PHA154KLZ	150	50	7.5	5.8	0.27	0.30	0.33	0.13	0.18
ST413PHA224KLZ	220	55	10.0	5.0	0.21	0.24	0.27	0.13	0.17
ST413PHA334KLZ	330	55	11.5	3.8	0.19	0.21	0.23	0.11	0.15
ST413PHA474KLZ	470	55	16.3	3.1	0.14	0.17	0.19	0.10	0.13
ST413PHA564KLZ	560	55	18.1	2.8	0.13	0.15	0.17	0.093	0.12
ST413PHA684KLZ	680	55	24.0	2.5	0.11	0.15	0.17	0.073	0.11
ST413PHA824KLZ	820	45	26.0	1.5	0.10	0.12	0.13	0.073	0.10
ST413PHA105KLZ	1000	45	29.0	2.0	0.11	0.13	0.14	0.070	0.10

1. When ordering, specify **termination** and **screening** codes:

#### ST413PHA105KLZ

**Termination:** L = Silver-palladium-platinum-glass frit

**Special order:**

T = Tin-silver-copper (95.5/4/0.5) or

S = Tin-lead (63/37).

**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)

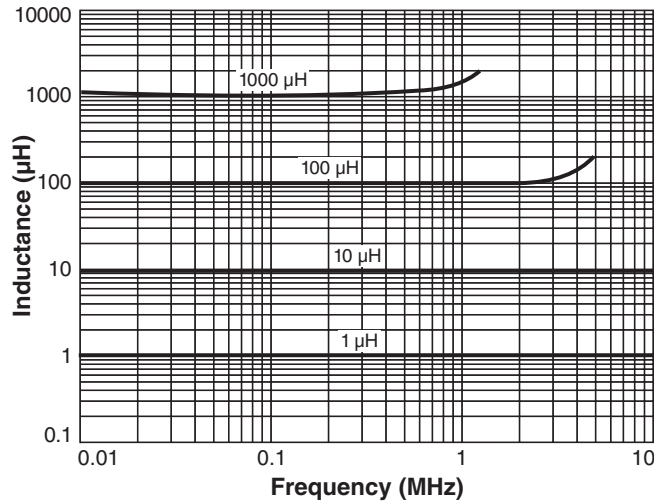
All screening performed to the document's latest revision

2. Inductance measured at 100 kHz, 0.1 Vrms, using Coilcraft SMD-A fixture in Agilent/HP 4263B impedance analyzer or equivalent.
3. Q measured at 1 MHz using an Agilent/HP 16193 test fixture and an Agilent/HP 4291 or equivalent.
4. DCR measured on micro-ohmmeter and Coilcraft CCF858 test fixture.
5. SRF measured using a Coilcraft CCF1297 test fixture and an Agilent/HP 8753D network analyzer or equivalent.
6. DC current at 25°C that causes the specified inductance drop from its value without current.
7. Current that causes the specified temperature rise from 25°C ambient. This information is for reference only and does not represent absolute maximum ratings.
8. Electrical specifications at 25°C.

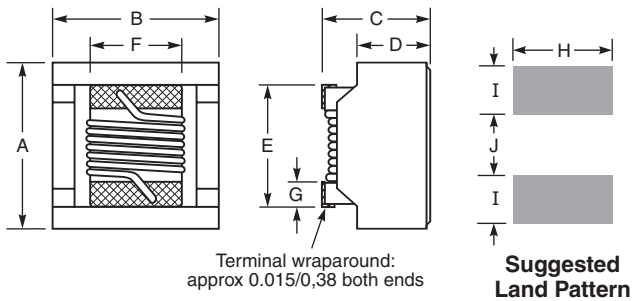
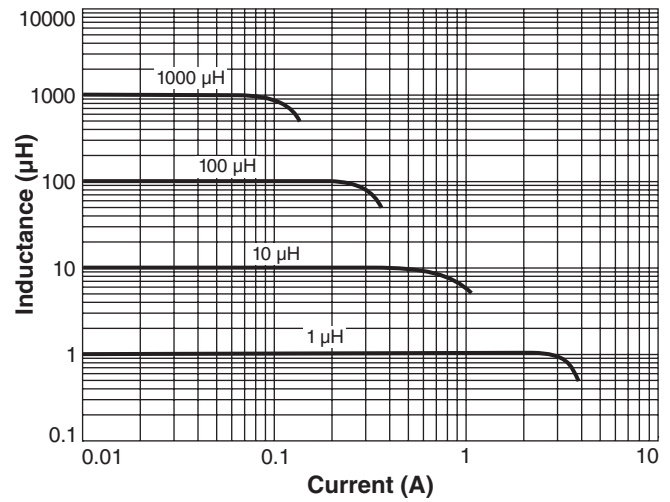
Refer to Doc 362 "Soldering Surface Mount Components" before soldering.

# Power Inductor for Critical Applications ST413PHA

## Typical L vs Frequency



## Typical L vs Current



A	B	C	D	E	F	G	H	I	J	
max	max	max	max	max	max	typ				inches
0,150	0,149	0,108	0,070	0,102	0,084	0,020	0,100	0,040	0,050	
3,81	3,78	2,74	1,78	2,59	2,13	0,51	2,54	1,02	1,27	mm

Note: Height dimension is before optional solder application. For maximum height including solder, add 0.006 in / 0,15 mm.

