Chip Inductors for Power Applications

Our 1008FPS, 1212FPS, 1616FPS, 242408FPS and 242418FPS series of semi-shielded chip size power inductors are designed with a high flux density ferrite core, having a small footprint of either 2x2, 3x3, 4x4 or 6x6 mm as well as a flat profile. The inductance range covers 0.47µH to 1000µH, rated current up to 6.5A. The FPS inductors are magnetically shielded by using a ferrite-epoxy resin.
With our new 1616FP and 242418FP wire-wound chip size power inductor series, FASTRON offers an inductance range from 1.0µH up to 1000µH and a max 5A rated current.
Both the inductor families (unshielded FP as well as semi-shielded FPS series) have lead-free, pre-tinned terminals and provide good solderability. Of course all of our FP and FPS chip size inductors are RoHS compliant.

Applications

Major applications for our FP and FPS inductor series are power applications (e.g. AC/DC and DC/DC converters) of small size with cost efficiency as one of the critical factors. The parts are used in stationary - as well as in handheld systems and portable devices, e.g. for driving LED backlight for tablet displays.

Technical Data

L – Value (rated inductance)	Measured with E4980AL Precision LCR meter or equivalent at frequency fL, 25°C ambient
SRF (min)	Measured with E4991B Impedance Analyzer or equivalent at 25°C ambient
DCR (max)	Measured at 25°C ambient
Rated DC Current: Irms	Max permissible DC Current that causes a 40°C typ. component temperature rise from 25°C ambient.
Saturation Current: Isat	For FPS, max permissible DC bias at 25°C ambient that causes inductance drop 30% (typ.) related to the unloaded inductivity. For FP, max permissible DC bias at 25°C ambient that causes inductance drop 10% (typ.) related to the unloaded inductivity.
Operating Temperature	-40°C to +125°C (including component self-heating): FPS -40°C to +150°C (including component self-heating): FP
Surface Finishing	Flat top for perfect pick and place assembly
Pad Metallization	Tin as top layer
Wire Termination	Spot welding covered with tin layer
Recommended Soldering Method	Reflow
Moisture Sensitivity Levels (MSL)	MSL Level 1, indicating unlimited floor life at ≤ 30°C / 85% relative humidity
Solderability	Using lead-free solder (Sn 99.9) at 260°C ± 5°C for 5 ± 0.5 seconds, min 90% solder coverage of metallization Standard: IEC 68-2-20 (Ta)
Resistance to Soldering Heat	Resistant to 260°C ± 5°C for 10 ± 1 seconds Standard: IEC 68-2-20 (Tb)
Resistance to Solvent	Resistant to isopropyl alcohol for 5 ± 0.5 minutes at 23°C ± 5°C Standard: IEC 68-2-45
Climatic Test	Defined by the following standards: IEC 68-2-1 for Cold test: -55°C for 96 hours IEC 68-2-2 for Dry heat test: +85°C for ferrite core and 125°C for ceramic core for 96 hours IEC 60068-2-78 for Humidity test: 40°C at RH 95% for 4 days
Adhesion of Soldered Component (Shear Test)	Components withstand a pushing force of 10N for 10 ± 1 seconds Standard: IEC 60068-2-21, method Ue_3

Ordering Code

Example: 1212FPS-1R0X-01

1212	FPS	-	1R0	X	-	YY	➔	1212FPS-1R0M-01
(Case Size)	(Core Type)		(Inductance Value)	(Tolerance)		(Packaging Code)		

Case Sizes - 1008, 1212, 1616, 242408, 242418
Core Type - FPS, FP (Ferrite)
Tolerances - M (±20%), N (±30%)
Packaging Code - 01 (Taped / Reel)

● All dimensions in mm

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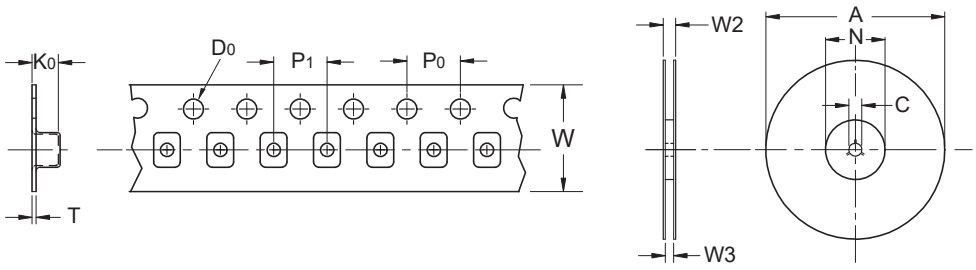
Packaging Specification Schematic



Type	A	D0	N	C	W2	W3	W	P1	P0	K0	T
1008	180	1.50	60	13	18.4	13.7	12	8	4	1.50	0.3
1212	180	1.55	50	13	12.5	8.4	8	4	4	1.60	0.25
1616	330	1.50	99.5	13.5	17.2	12.6	12	8	4	1.90	0.30
242408	330	1.60	100	13.5	17.6	13.0	12	8	4	2.40	0.30
242418	330	1.50	99.5	13.5	21.0	16.6	16	12	4	4.70	0.40

FASTRON's Component Key Characteristics

Approved according to AEC-Q200

Approved according to AEC-Q200 with High Temperature

Suitable for High Temperature

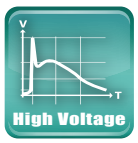
Part is RoHS conform and Halogen free

Mechanical Shock and Vibration Proof

Designed for High Q-values

Exceptionally High Q-values

Optimized for High Currents



Optimized for High Voltages

Fastron Group
Fine Inductors

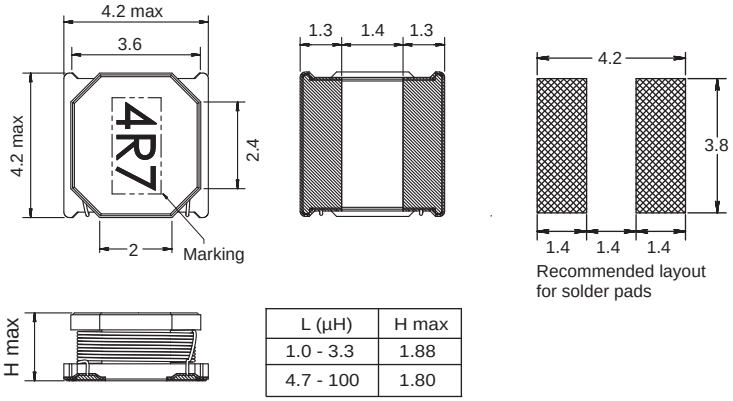
www.fastrongroup.com

New

1616 FP

110°C AEC-Q200 | RoHS Halogen Free | Mechanical Shock Vibration Proof | High Current

Non-shielded
Engineer's Kit: EK-1616FP-X



L (µH)	H max
1.0 - 3.3	1.88
4.7 - 100	1.80

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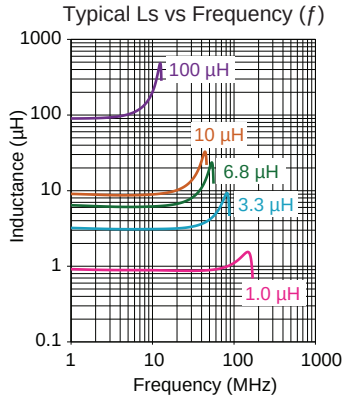

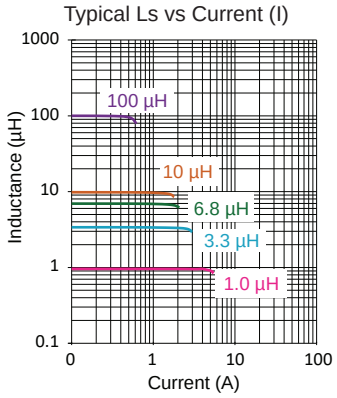

Part No	Inductance L (µH)	f_L (kHz)	Tol ± (%)	SRF typ (MHz)	DCR max (mΩ)	Rated DC Current Isat (A)	Irms (A)
1616FP-1R0M-01	1.0	100 @ 1 V	20	145	50	3.85	2.80
1616FP-1R5M-01	1.5	100 @ 1 V	20	105	65	2.95	2.50
1616FP-2R2M-01	2.2	100 @ 1 V	20	85	90	2.60	2.10
1616FP-3R3M-01	3.3	100 @ 1 V	20	70	110	2.15	1.60
1616FP-4R7M-01	4.7	100 @ 1 V	20	50	150	1.80	1.40
1616FP-6R8M-01	6.8	100 @ 1 V	20	43	180	1.50	1.25
1616FP-100M-01	10	100 @ 1 V	20	35	250	1.30	1.00
1616FP-150M-01	15	100 @ 1 V	20	30	390	1.00	0.85
1616FP-220M-01	22	100 @ 1 V	20	25	570	0.85	0.65
1616FP-330M-01	33	100 @ 1 V	20	18	850	0.70	0.55
1616FP-470M-01	47	100 @ 1 V	20	15	1190	0.60	0.50
1616FP-680M-01	68	100 @ 1 V	20	12	1655	0.50	0.40
1616FP-101M-01	100	100 @ 1 V	20	10	2350	0.40	0.35

Core Material: Ferrite

Revision date: 07 Nov 2024

SPQ: Taped / Reel 3000 [-01]

Remarks: Unlisted inductance values available upon request.

● All dimensions in mm