

## 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 f <sub>L</sub> , 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: I <sub>rms</sub>	Max permissible DC Current that causes a 40°C typ. component temperature rise from 25°C ambient.
Saturation Current: I <sub>sat</sub>	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	<a href="#">Reflow</a>
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 <sub>3</sub>

**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

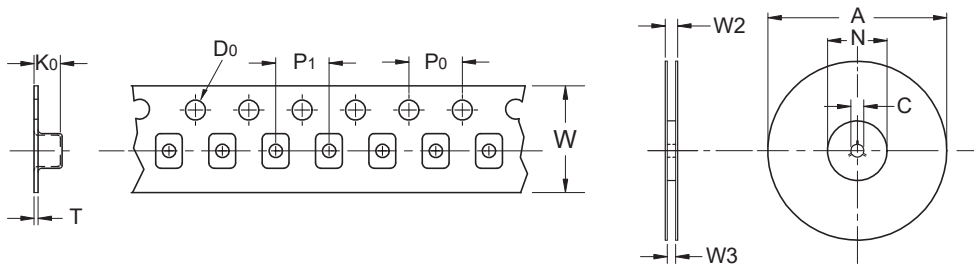
Core Type    - FPS, FP (Ferrite)

Tolerances    - M (±20%), N (±30%)

Packaging Code - 01 (Taped / Reel)

Chip Inductors for Power Applications

Packaging  
Specification  
Schematic



Type	A	D <sub>0</sub>	N	C	W <sub>2</sub>	W <sub>3</sub>	W	P <sub>1</sub>	P <sub>0</sub>	K <sub>0</sub>	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



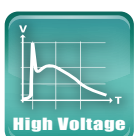
Designed for High Q-values



Exceptionally High Q-values



Optimized for High Currents



Optimized for High Voltages