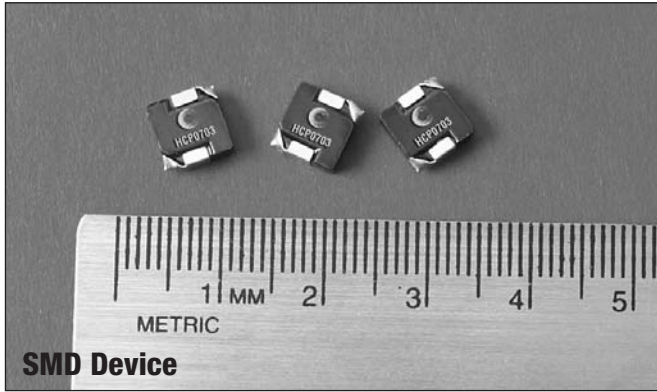


High Current, Pressed, Power Inductors

HCP0703 Series



SMD Device

Description

- 125°C maximum total temperature operation
- 7.0 x 7.3 x 3.0mm surface mount package
- Magnetically shielded, low EMI
- Pressed powder iron core material
- Enhanced core coating eliminates rusting and provides high insulation impedance
- Inductance range from 0.15µH to 10.0µH
- Current range from 52.0 Amps to 3.0 Amps
- Frequency range up to 1MHz
- Black or gray aesthetic color

Applications

- Notebook power
- VRM, multi-phase buck regulator
- DC-DC converters
- PC workstations/Servers/Desktop
- Routers



Environmental Data

- Storage temperature range: -55°C to +125°C
- Operating temperature range: -55°C to +125°C (range is application specific)
- Solder reflow temperature: +260°C max. for 10 seconds maximum

Packaging

- Supplied in tape and reel packaging, 1500 parts per reel, 13" diameter reel

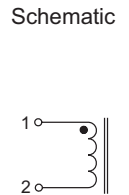
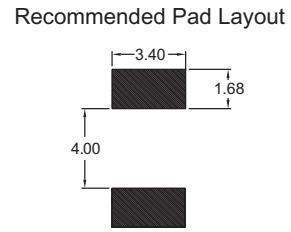
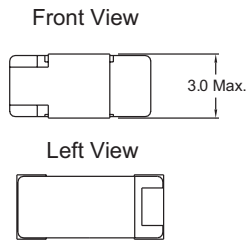
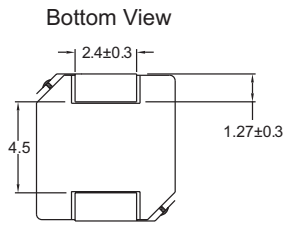
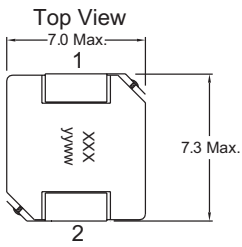
Product Specifications

Part Number ⁵	Rated Inductance (µH)	OCL ¹ µH ± 20%	I _{rms} ² Amps	I _{sat} ³ Amps	DCR mΩ@20°C (Typical)	DCR mΩ@20°C (Maximum)	K-factor ⁴
HCP0703-R15-R	0.15	0.15	26	52	1.9	2.5	1100
HCP0703-R22-R	0.22	0.22	23	40	2.5	2.8	922
HCP0703-R47-R	0.47	0.47	17	26	4.0	4.2	559
HCP0703-R68-R	0.68	0.68	15	25	5.0	5.5	435
HCP0703-R82-R	0.82	0.82	13	24	6.8	8.0	360
HCP0703-1R0-R	1.0	1.0	11	22	9.0	10	356
HCP0703-1R5-R	1.5	1.5	9	18	14	15	307
HCP0703-2R2-R	2.2	2.2	8	14	18	20	206
HCP0703-3R3-R	3.3	3.3	6	13.5	28	30	186
HCP0703-4R7-R	4.7	4.7	5.5	10	37	40	171
HCP0703-6R8-R	6.8	6.8	4.5	8	54	60	140
HCP0703-8R2-R	8.2	8.2	4	7.5	64	68	132
HCP0703-100-R	10.0	10.0	3	7.0	102	105	112

1 Open Circuit Inductance (OCL) Test Parameters: 100kHz, 0.25V, 0.0Adc
 2 I_{rms}: DC current for an approximate ΔT rise of 40°C without core loss. Derating is necessary for AC currents. PCB layout, trace thickness and width, air-flow and proximity of other heat generating components will affect the temperature rise. It is recommended the part temperature not exceed 125°C under worst case operating conditions verified in the end application.
 3 I_{sat}: Amps for approximately 20% rolloff (@25°C).

4 K-factor: Used to determine B_{p-p} for core loss (see graph). B_{p-p} = K * L * ΔI, B_{p-p}: (Gauss), K: (K-factor from table), L: (inductance in µH), ΔI (peak-to-peak ripple current in amps).
 5 Part Number Definition: HCP0703-xxx-R
 • HCP0703 = Product code and size
 • xxx= Inductance value in µH, R = decimal point. If no "R" is present, then third character = # of zeros
 • "-R" suffix = RoHS compliant

Dimensions - mm

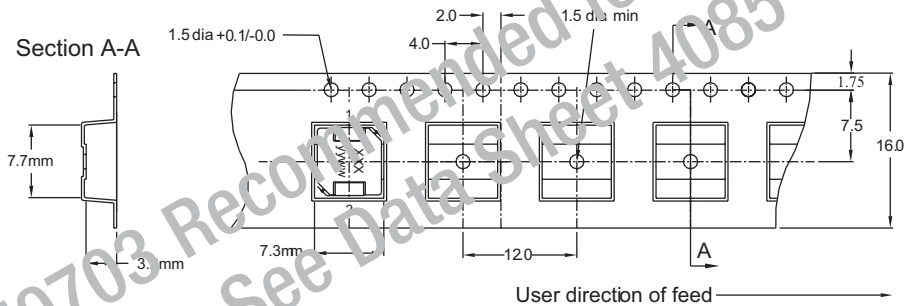


Part Marking: HCP0703

xxx = Inductance value in μH . (R = Decimal point). If no "R" is present, then last character is # of zeros

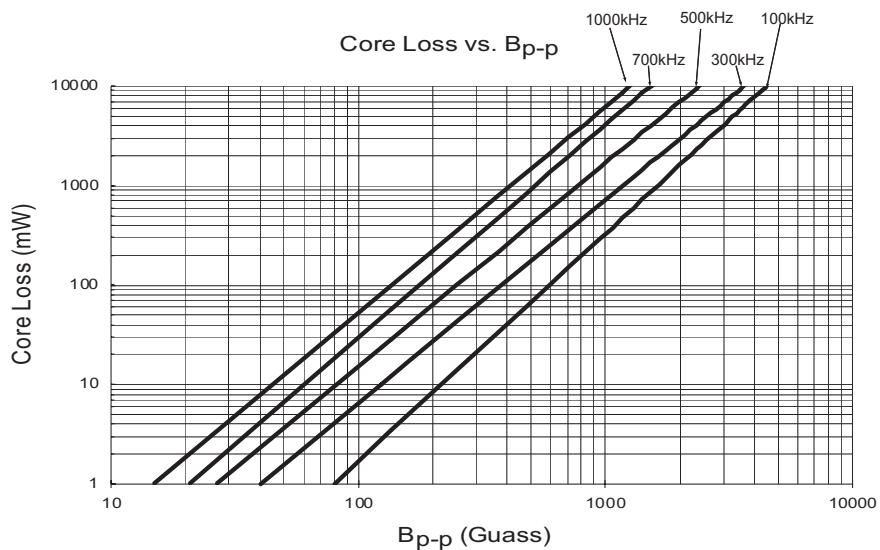
yyww = Date code

Packaging Information - mm

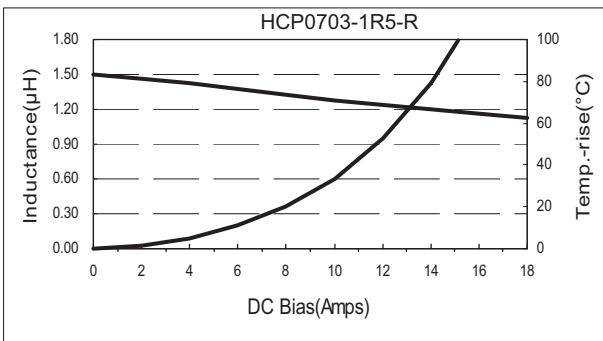
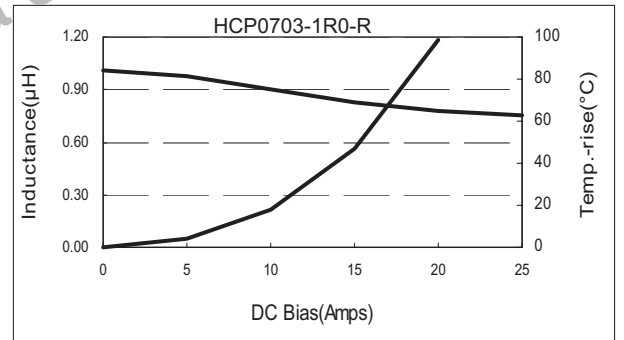
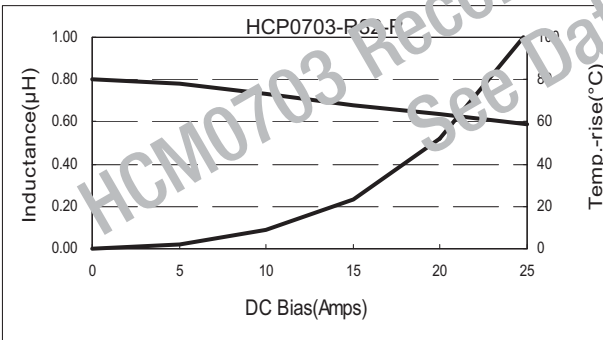
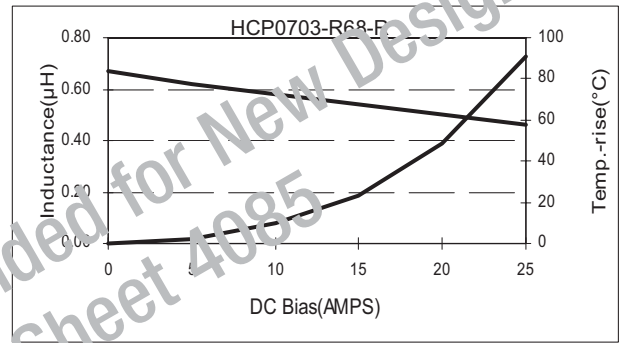
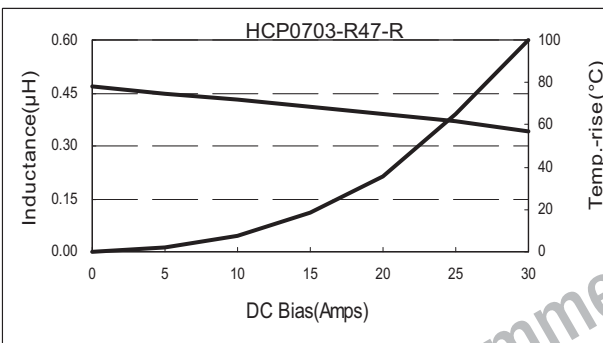
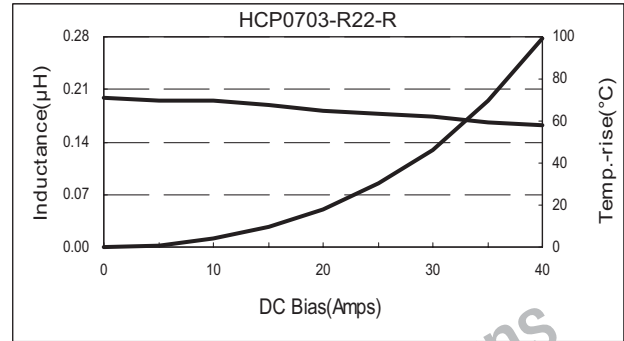
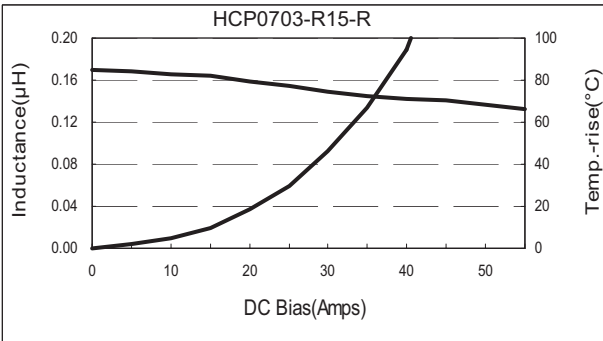


Supplied in tape and reel packaging, 1500 parts per reel, 13" diameter reel.

Core Loss



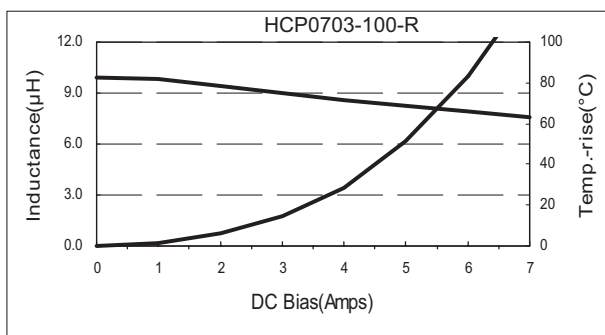
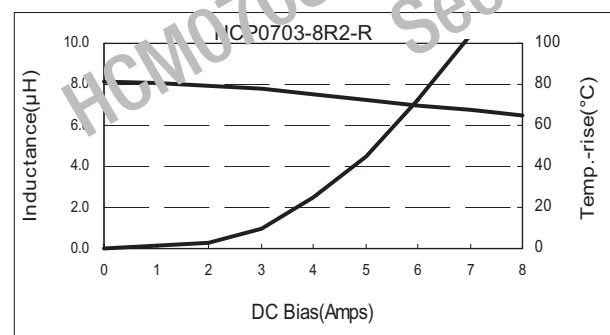
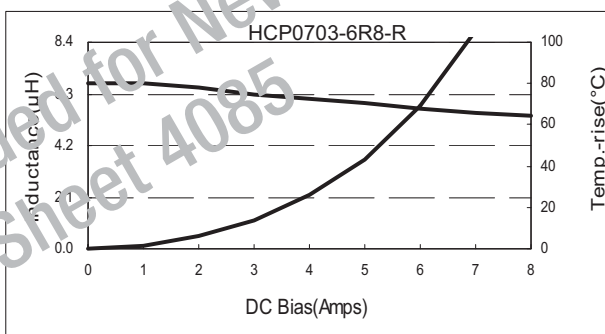
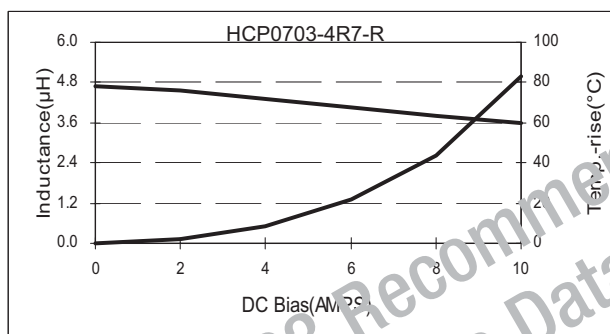
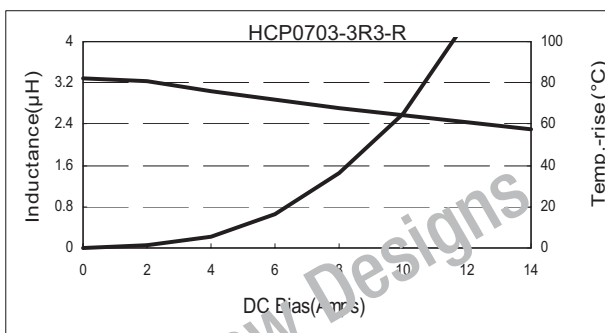
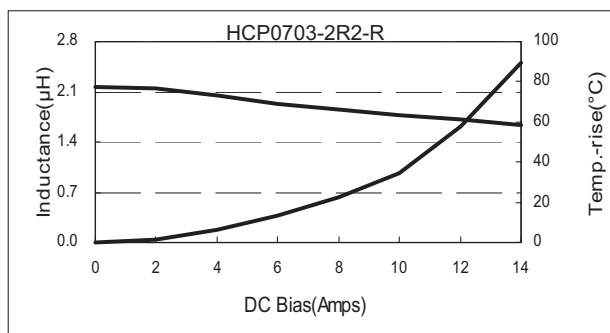
Performance Graphs



HCP0703 Recommended for New Designs
See Data Sheet 4085



Performance Graphs



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