

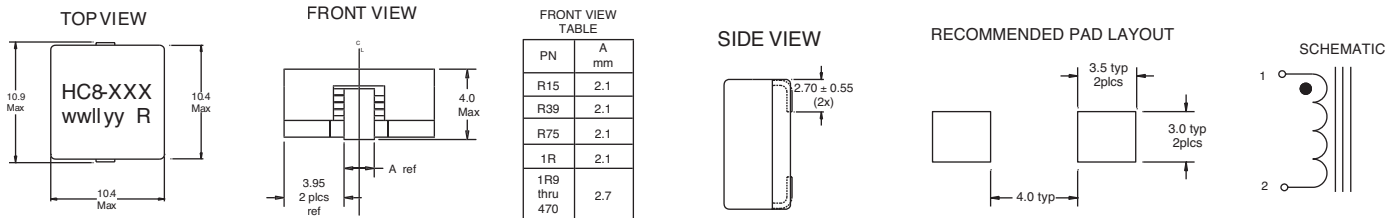
Product specifications

| Part number ⁶ | OCL ¹ (μH) ±20% | I _{rms} ² (amps) | I _{sat} ³ (amps) 15% rolloff | I _{sat} ⁴ (amps) 30% rolloff | DCR (mΩ) maximum @ 20°C | Volt-μsec ⁵ (V-μs) |
|--------------------------|----------------------------|--------------------------------------|---|---|----------------------------|----------------------------------|
| HC8-R15-R | 0.175 | 39.0 | 43 | 76 | 0.80 | 1.5 |
| HC8-R39-R | 0.390 | 28.3 | 26 | 45 | 1.55 | 2.5 |
| HC8-R75-R | 0.766 | 18.8 | 18.5 | 32.7 | 3.40 | 3.5 |
| HC8-1R2-R | 1.32 | 16.0 | 14.4 | 25.5 | 4.70 | 4.5 |
| HC8-1R9-R | 1.90 | 12.4 | 11.8 | 20.9 | 7.7 | 5.5 |
| HC8-2R6-R | 2.65 | 10.2 | 10.0 | 17.7 | 11.4 | 6.5 |
| HC8-3R5-R | 3.52 | 8.5 | 8.7 | 15.3 | 16.5 | 7.5 |
| HC8-4R5-R | 4.52 | 8.0 | 7.7 | 13.5 | 18.6 | 8.5 |
| HC8-5R6-R | 5.65 | 6.7 | 6.9 | 12.1 | 26.3 | 9.5 |
| HC8-6R9-R | 6.90 | 6.4 | 6.2 | 10.9 | 28.9 | 10.5 |
| HC8-8R2-R | 8.27 | 5.5 | 5.7 | 10.0 | 39.6 | 11.5 |
| HC8-100-R | 9.77 | 5.2 | 5.2 | 9.2 | 43.6 | 12.5 |
| HC8-150-R | 15.02 | 4.1 | 4.2 | 7.4 | 68.6 | 15.5 |
| HC8-220-R | 21.40 | 3.4 | 3.5 | 6.2 | 99.5 | 18.6 |
| HC8-330-R | 31.65 | 2.7 | 2.9 | 5.1 | 154 | 22.6 |
| HC8-470-R | 47.28 | 2.2 | 2.4 | 4.2 | 237 | 27.6 |

- Open Circuit Inductance (OCL) Test Parameters: 100kHz, 1.0Vrms, 0.0Aac, @ +25°C
- I_{rms}: DC current for an approximately ΔT of 40°C without core loss. Derating is necessary for AC currents. Pad layout, trace thickness and width, airflow, and proximity of other heat generating components will affect the temperature rise. It is recommended that the temperature of the part not exceed 155°C under worst case conditions verified in the end application.
- Peak current for approximately 15% rolloff @+20°C
- Peak current for approximately 30% rolloff @+20°C

- Applied Volt-Time product (V-μs) across the inductor. This value represents the applied V-μs at operating frequency necessary to generate additional core loss which contributes to the 40°C temperature rise. De-rating of the I_{rms} is required to prevent excessive temperature rise. The 100% V-μs rating is equivalent to a ripple current I_{pp} of 20% of Isat (30% rolloff option).
- Part number definition: HC8-XXX-R
HC8 = Product code and size
XXX = Inductance value in uH. R = Decimal point. If no R is present then last character equals number of zeros
-R suffix indicates RoHS compliant

Dimensions—mm



Part marking: HC8= (Product code and size)-xxx=(inductance value in uH, R= decimal point. If no R is present then last character equals number of zeros. wwlyy=date code, R=revision level

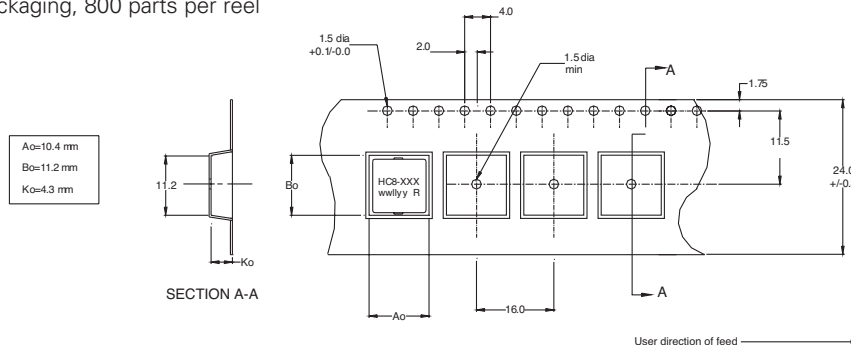
Tolerances are ±0.2 millimeters unless stated otherwise

All soldering surfaces to be coplanar within 0.1 millimeters

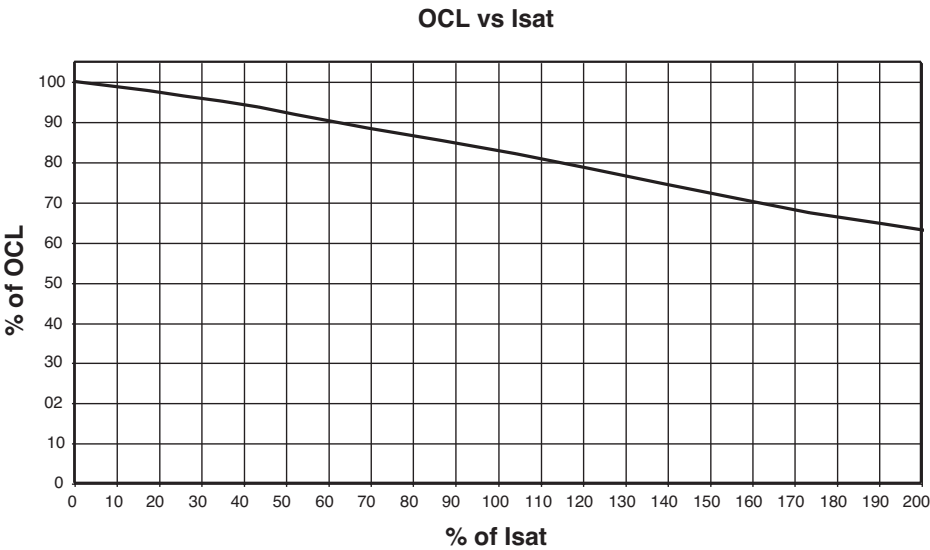
Do not route traces or vias underneath the inductor

Packaging information—mm

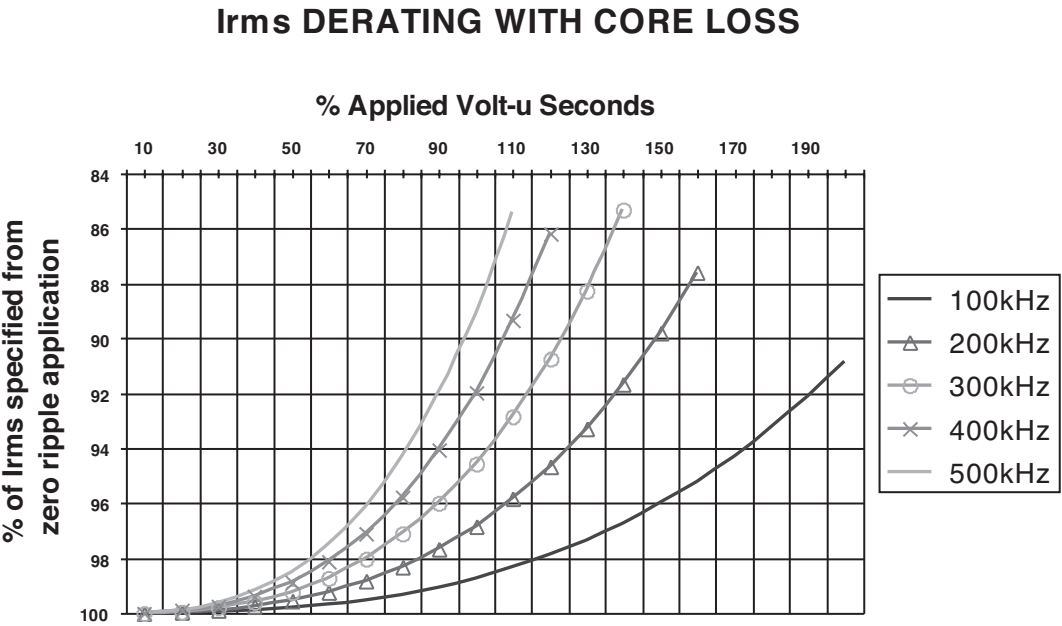
Supplied in tape and reel packaging, 800 parts per reel



Inductance characteristics



Core loss



Solder reflow profile

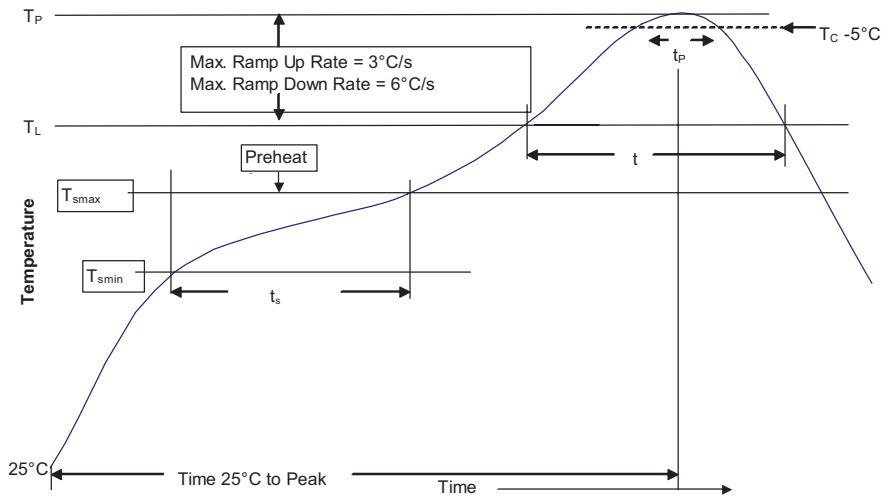


Table 1 - Standard SnPb Solder (T_C)

| Package Thickness | Volume mm ³ <350 | Volume mm ³ ≥350 |
|-------------------|-----------------------------|-----------------------------|
| <2.5mm) | 235°C | 220°C |
| ≥2.5mm | 220°C | 220°C |

Table 2 - Lead (Pb) Free Solder (T_C)

| Package Thickness | Volume mm ³ <350 | Volume mm ³ 350 - 2000 | Volume mm ³ >2000 |
|-------------------|-----------------------------|-----------------------------------|------------------------------|
| <1.6mm | 260°C | 260°C | 260°C |
| 1.6 – 2.5mm | 260°C | 250°C | 245°C |
| >2.5mm | 250°C | 245°C | 245°C |

Reference JEDEC J-STD-020D

| Profile Feature | Standard SnPb Solder | Lead (Pb) Free Solder |
|--|----------------------|-----------------------|
| Preheat and Soak | | |
| • Temperature min. (T_{smin}) | 100°C | 150°C |
| • Temperature max. (T_{smax}) | 150°C | 200°C |
| • Time (T_{smin} to T_{smax}) (t_s) | 60-120 Seconds | 60-120 Seconds |
| Average ramp up rate T_{smax} to T_P | 3°C/ Second Max. | 3°C/ Second Max. |
| Liquidous temperature (T_L) | 183°C | 217°C |
| Time at liquidous (t_L) | 60-150 Seconds | 60-150 Seconds |
| Peak package body temperature (T_P)* | Table 1 | Table 2 |
| Time (t_P)** within 5 °C of the specified classification temperature (T_C) | 20 Seconds** | 30 Seconds** |
| Average ramp-down rate (T_P to T_{smax}) | 6°C/ Second Max. | 6°C/ Second Max. |
| Time 25°C to Peak Temperature | 6 Minutes Max. | 8 Minutes Max. |

* Tolerance for peak profile temperature (T_P) is defined as a supplier minimum and a user maximum.

** Tolerance for time at peak profile temperature (t_P) is defined as a supplier minimum and a user maximum.

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