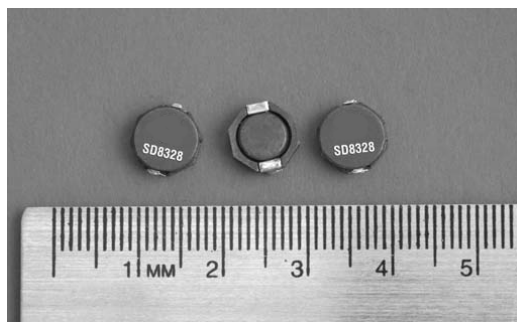


SD8328

Low profile shielded drum core power inductors



Product features

- Low profile shielded drum core
- 9.5 mm x 8.3 mm x 3.0 mm surface mount inductor
- Ferrite core material
- Inductance range from 2.7 μ H to 100 μ H
- Current range from 0.8 A to 6.6 A
- Frequency range up to 1 MHz

Applications

- Buck or boost inductor
- Noise filtering output filter chokes
- Notebook and laptop power/display
- LCD Monitors/displays/televisions
- Battery chargers, LCD bias supplies
- Battery and Industrial power systems
- Computer, DVD and media players
- Portable power devices
- DC-DC converters

Environmental data

- Storage temperature range (component): -40 °C to +125 °C
- Operating temperature range: -40 °C to +125 °C (ambient plus self-temperature rise)
- Solder reflow temperature: J-STD-020 (latest revision) compliant



Product specifications

Part Number	Rated Inductance (μH)	OCL ¹ μH±30%	I _{rms} ² (A)	I _{sat} ³ (A)	DCR mΩ @ +20 °C Typ	DCR mΩ @ +20 °C Max	K-factor ⁴
SD8328-2R5-R	2.5	2.7	6.6	4.5	12	15.6	43
SD8328-3R3-R	3.3	3.4	6.1	4.0	14	18.0	33
SD8328-4R7-R	4.7	5.0	4.5	3.6	19	24.7	23
SD8328-7R3-R	7.3	7.6	3.4	2.9	30	39	15
SD8328-100-R	10	9.1	3.3	2.6	36	45	11
SD8328-150-R	15	14.5	2.35	2.0	53	69	7.2
SD8328-220-R	22	21.1	1.85	1.7	76	99	4.9
SD8328-330-R	33	31.9	1.45	1.4	120	156	3.3
SD8328-470-R	47	44.9	1.30	1.2	150	194	2.3
SD8328-680-R	68	64.2	0.98	1.0	220	286	1.6
SD8328-101-R	100	97.0	0.80	0.8	330	430	1.1

1. Open Circuit Inductance Test Parameters: 100 kHz, 0.1 V_{rms}, 0.0 Adc.

2. I_{rms}: DC current for an approximate ΔT 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 that the temperature of the part not exceed +125 °C under worst case operating conditions verified in the end application.

3. I_{sat} Amps peak for approximately 35% 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} (mT), K: (K factor from table), L: (Inductance in μH), ΔI (Peak to peak ripple current in Amps).

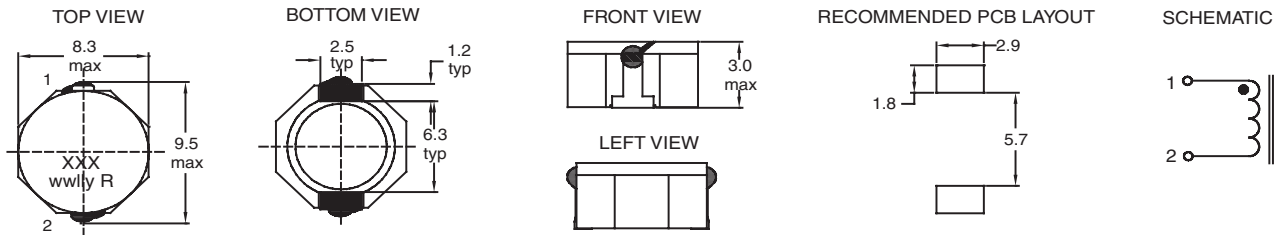
5. Part Number Definition: SD8328-xxx-R

SD8328 = Product code and size; -xxx = Inductance value in μH;

R = decimal point; If no R is present, third character equals number of zeros.

-R suffix = RoHS compliant

Dimensions-mm



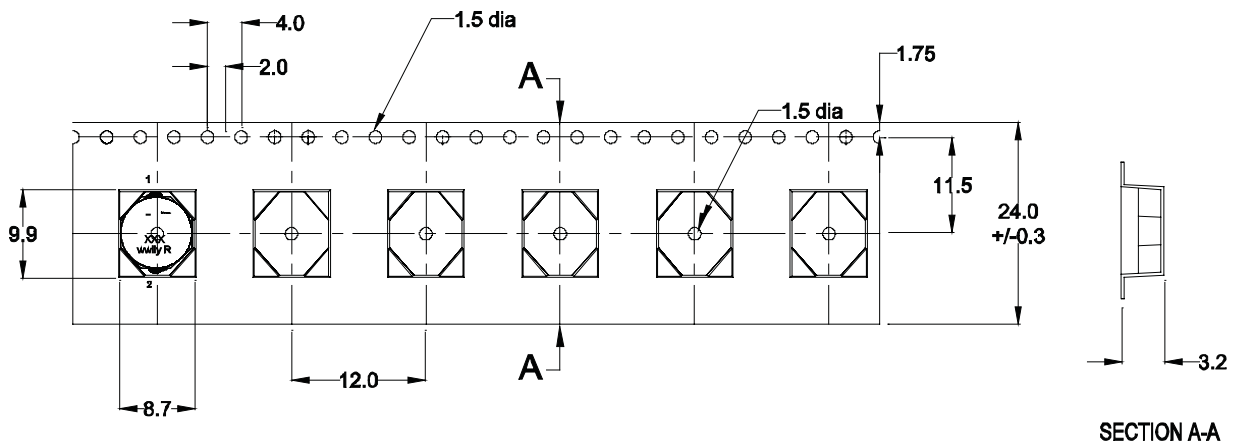
Part Marking: xxx = Inductance value in μH. (R = Decimal point). If no R is present, third character = number of zeros

wwly - or - wwlyy = Date code

R = Revision level

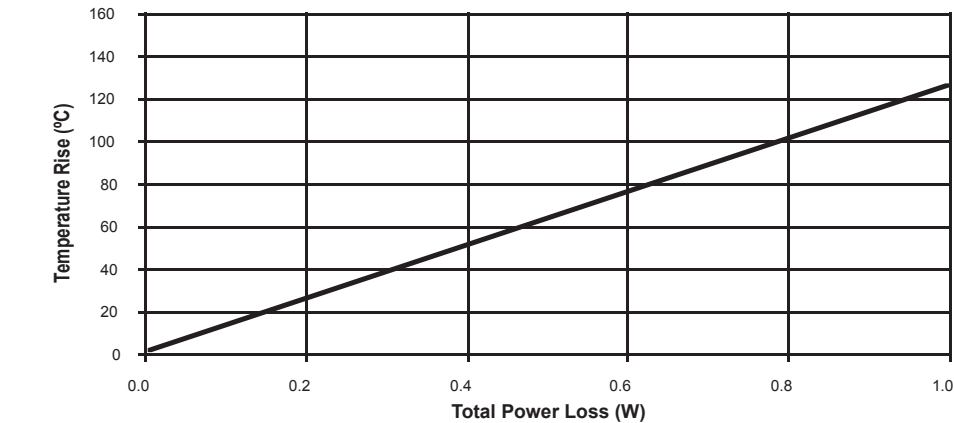
Do not route traces or vias underneath the inductor

Packaging information-mm

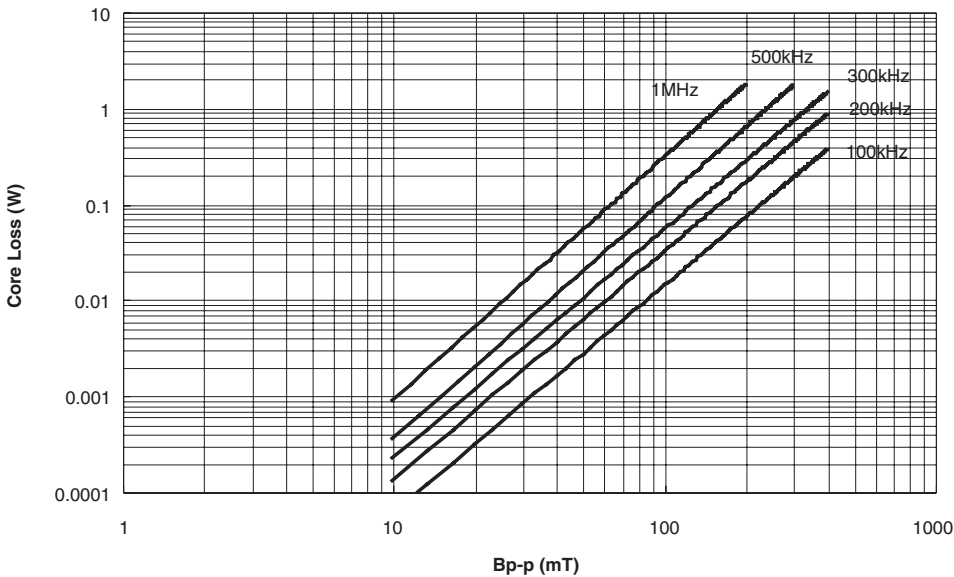


Supplied in tape-and-reel packaging, 1280 parts per reel, 13" diameter reel.

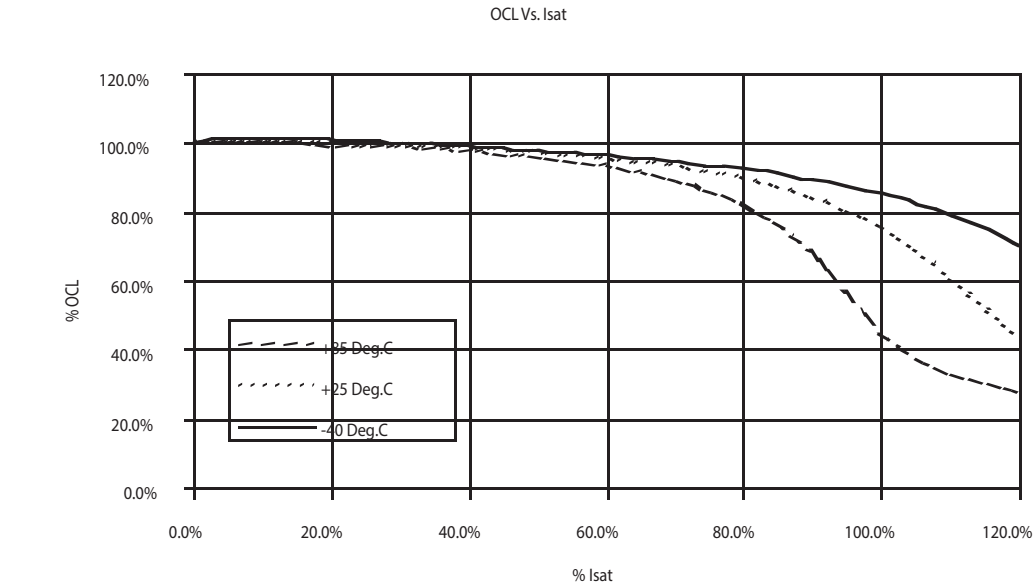
Temperature rise vs total loss



Core loss vs Bp-p



Inductance characteristics



Solder Reflow Profile

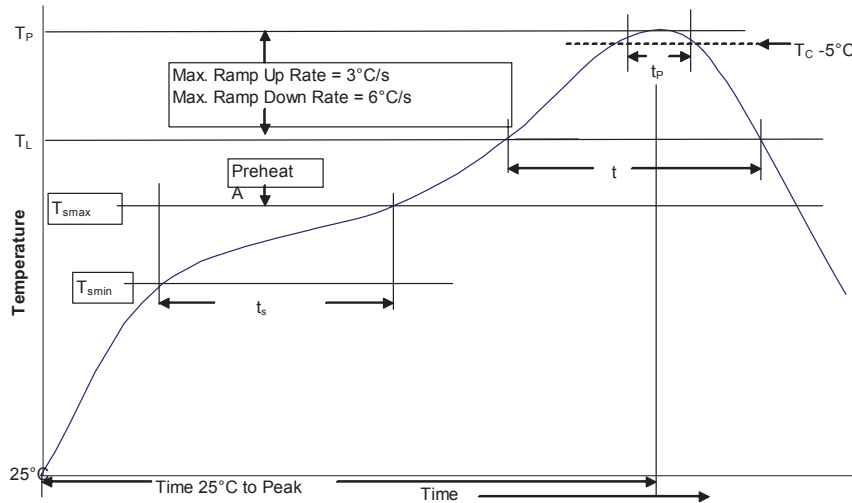


Table 1 - Standard SnPb Solder (T_p)

Package Thickness	Volume mm^3 <350	Volume mm^3 ≥ 350
<2.5mm	235°C	220°C
$\geq 2.5mm$	220°C	220°C

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

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 JDEC J-STD-020

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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