Power Solutions

The solar container inductor is very hot

Overview

Depending on your design requirements, you may want to consider a higher inductor value for the higher output voltages. the 0.33uH inductor is producing more than 7A of peak to peak ripple current, which is dissipating most of your power in core losses. I recorded 130F in the container last summer inside the container before any shading , insulation, or air transfer/ac. I’ve now fully shaded the top, fully insulated 8ft of the container where the batteries are located, set up air transfer fans and also a 12k btu AC. I Still need to shade the. acitor (C). "L" is used as the inductor symbol. Th fs with the magnetic properties for his design. These properties are: saturation Bs, permeabi is often misunderstood and can be troublesome. This article will address how inductors become saturated, how saturatio voltage v (a) and current i (b). I used a 4.7mh inductor where this circuit lists 330uH, and realised the inductor got really hot. I presume it has something to with the value. Please tell me if this is so, if not please tell me other ways inductor could get hot?

Thanks Higher DCR or lower saturation than the specified inductor. But I found the output inductor is very hot (around 70Deg.C) at output current 1A. I changed the output inductor to Vishay part and the inductor is still hot. What is the possible root cause for this issue?

thanks! 2) Core losses due to the AC flux in the inductor. The later may be an issue. If this container is sitting in the direct sunlight, assuming there is no wind, how hot will it get inside during the day?

Eventually, it will get hotter inside the container than the ambient temp due to the solar load, and the ambient temp would actually begin cooling, but that's assuming stead. After several iterations of pitfalls with a very uncooperative solar panel, I got the supply to behave - except the toroid inductor gets to 165°F (74°C) . though granted I'd rather it get this hot than the 75N06 which only gets to 108°F (42°C) despite on average passing 5-6 amps when the panel is.

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the TPS40305 inductor is very hot

Depending on your design requirements, you may want to consider a higher inductor value for the higher output voltages. the 0.33uH inductor is producing more than 7A of peak to peak ripple current, which ...

High voltage buck converter inductor running too hot

I'm designing a buck converter with 1500V input voltage, 320V 5A output and I'm having trouble with my inductor running too hot. Circuit is a completely standard buck converter topology ...

Inductor overheating : r/AskElectronics

Running a certain current through a 4.7mH inductor will generate a much stronger magnetic field than a 330uH inductor. Stronger magnetic field means bigger risk of saturating the ...

HOW DOES A SOLAR ENERGY STORAGE INDUCTOR WORK

Because the current flowing through the inductor cannot change instantaneously, using an inductor for energy storage provides a steady output current from the power supply.

LM2576-5 buck converter overheating advice.

Running low loads, under 500mA the IC stays slightly warm, but when I start demanding some more power, max 1.5A the inductor starts to whine and the chip gets so hot so quick that it ...

Why is the Solar Charge Controller Overheating? , inverter

Solar charge controllers play a crucial role in solar energy systems, managing the power flow between solar panels, batteries, and connected loads. Their purpose is to optimize energy use ...

Max internal container temp in sun , Eng-Tips

Simple method is using simple radiation heat transfer calculation using methods provided in any heat transfer textbook. To explain further, consider the initial condition when the container is at ...

Can Solar Panel Container Work in the Shade?

The short answer: technically, yes, a solar panel container can work in the shade, but efficiency lowers--sometimes drastically. How much depends on panel type, wiring, inverter ...

how hot can a toroid inductor go safely?

I would be concerned about if is getting so hot that the enamel paint degrades and you end up with a shorted coil but I could not tell you how hot it has to be for this to happen

How to Find the Inductor "Hot on the Trail" Stalker 2 Heart of

Learn how to locate the Inductor in the "Hot on the Trail" mission of Stalker 2: Heart of Chernobyl. This quick guide will help you track down the item and progress in the mission.

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MAGNETIC SATURATION OF SOLAR CONTAINER INDUCTOR

For power applications in which an inductor will be saturation-limited, a PM hybrid core can improve energy stor-age density or loss by providing greater effective saturation flux density.

DC-DC Power supply Inductor is very hot , All About Circuits

When I am debugging the circuits, I found the output voltage level is right as expected voltage 48V under different current load, but the inductor of L16 is very hot even with a current load ...

DC-DC Power supply Inductor is very hot , All About Circuits

I designed a DC-DC power supply, it is a buck-boost topology, the design is based on DC-DC controller LM5118, the circuit is as below picture shows: When I am debugging the circuits, I ...

Why does my Inductor Get Warm? (Inverter Output Filter)

Thus the mean current through the inductor may be below its DC current rating but the peak current might be above the peak current rating of that inductors. You ...

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