

Total Loss Calculation Steps for Online Tool

1.- From Inductor drop down menu, select “Search by Part number” option

The screenshot shows the TDK Product Center homepage. The top navigation bar includes links for News, Products, Catalog, Application Guides, Technical Support, Tech Library, Environment, and Contact. The main content area is titled "Inductors (Coils)" and features a "Product Top Page" button. Below this, there is a "Catalog" button and a "Product Lineup" section. The "Product Lineup" section includes three main categories: Inductors (Coils), Leaded Inductors (Leaded Coils), and Transponder Coils. Under the "Inductors (Coils)" category, there is a dropdown menu with options: "Search by Part No.", "Search by Character", "Cross Reference", "Catalog", "Tech Note", "Technical Support Tool", and "FAQ". A mouse cursor is pointing at the "Search by Part No." option. To the right of the dropdown menu, there are links for "CCV - Components Characteristic Viewer", "EPCOS Design Tools", and "EPCOS Sample Kits". There is also a "FAQ" section with a question mark icon and a "Sample Kits" section with a cube icon. The bottom right corner features a "Product spotlight" section.

2.- On the search Box, enter / select the desired part number

The screenshot shows the TDK Product Center search page. The top navigation bar is the same as the previous page. The main content area is titled "Inductors (Coils)" and features a "Search by Part No." button. Below this, there is a "Number of Applicable Products : 5" section. The search results are displayed in a table with the following part numbers: SPM5030T-1R0M, SPM5030T-R20M, SPM5030T-R35M, SPM5030T-R47M, and SPM5030T-R75M. A mouse cursor is pointing at the "SPM5030T-1R0M" part number. To the right of the table, there is a "Search" button and a checkbox labeled "Enable the real time search". Below the search results, there is a "Wildcard and Multiple Part number." section with the following instructions:

- Question mark (?) and asterisk (*) can be used as wildcard characters. The question mark (?) matches any single character, and the asterisk (*) matches any sequence of characters.
- Enter only one part number per line. Up to 50 part numbers can be searched simultaneously.
- A part number search is normally performed using a prefix search. If you wish to use a suffix search, enter an exclamation mark (!) at the end of the Part No.

3.- From the parameter box, select “Total Loss” Total Loss option

Inductors (Coils)

Product Top Page Search by Part No. Search by Characteristics Cross Reference Catalog Tech Note Technical Support Tool FAQ

Number of Applicable Products : 1

Parameter Change

SPM5030T-1R0M Search

L x W Size Inductance Thickness Tolerance Rated Current DC Resistance




Self-Resonant Frequency Operating Temperature Range Product Status Applications

Processing and Feature DC Bias Characteristic Temperature Rise by DC Impedance

Rac Q **Total Loss**

[Current Search Conditions] Part No.: SPM5030T-1R0M [clear](#)

Compare ? Catalog / Data Sheet Simulation Model ? 20 1 CSV ?

Check	Catalog / Data Sheet	Part No. ?	Distributor Inventory	Brand	Apps. ?	Feature ?	L x W Size	T(Max.) / mm	Inductance	Tolerance	Rated Current / A	Rdc (Max.) / Ω	SRF(Typ.) / GHz	Operating Temp. Range / $^{\circ}\text{C}$	AEC-Q200	Simulation Model ?
<input type="checkbox"/>		 SPM5030T-1R0M	Buy Now	TDK		<div>Wire Wound</div> <div>Metal Core</div> <div>Shield</div>	5.2mm x 5.0mm	3	1 μH	$\pm 20\%$	10.1	0.01144		-40 to 125		<div>S</div> <div>N</div>

Compare ? Catalog / Data Sheet Simulation Model ? 20 1 CSV ?



4.- In the Dialog Window, check the “Total Loss” box and enter the operating parameters click Apply button Apply and then close the dialog window.

TDK Product Center
Product information and services

About TDK ENGLISH TDK Worldwide

Search by Part Number or Keyword Search

News Products Catalog Application Guides Technical Support Tech Library Environment Contact

Inductors (Coils)

Product Top Page Search by Part No. Search by Characteristics Cross Reference Catalog Tech Note Technical Support Tool FAQ

Number of Applicable Products : 1

Parameter Change

Number of Applicable Products : 1

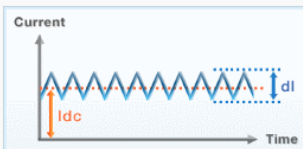
☒ **Total Loss**

Switching Frequency 300 kHz

dl : Ripple Current 0.75 A

Idc : Continuous DC 3.5 A

Total Loss W or lower



Apply

Search can be performed using the total loss obtained by adding core loss and winding loss from specifying a switching frequency, dl, and Idc. Only the maximum value can be set for the total loss. When no total loss is specified, the core loss, winding loss, and the total loss under the specified condition for all target inductors will be displayed in the search result screen. The value of self temperature rise by the total loss will also be displayed.

AEC-Q200 Simulation Model

S

N



5.- The calculated Core and Winding Loss values will appear in the product specification table

TDK

Product Center

Product information and services

About TDK

ENGLISH

TDK Worldwide

Search by Part Number or Keyword

Search

News

Products

Catalog

Application Guides

Technical Support

Tech Library

Environment

Contact

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Inx

Inductors (Coils)

Search Result

Inductors (Coils)

Product Top Page

Search by Part No.

Search by Characteristics

Cross Reference

Catalog

Tech Note

Technical Support Tool

FAQ

Number of Applicable Products : 1

Parameter Change

SPM5030T-1R0M

Search

L x W Size

Inductance

Thickness

Tolerance

Rated Current

DC Resistance

Self-Resonant Frequency

Operating Temperature Range

Product Status

Applications

Processing and Feature

DC Bias Characteristic

Temperature Rise by DC

Impedance

Rac

Q

Total Loss

[Current Search Conditions]

Part No.: SPM5030T-1R0M

clear

Total Loss: Switching Frequency 300kHz dI : Ripple Current 0.75A Idc : Continuous DC 3.5A

clear

Compare


Catalog / Data Sheet

Simulation Model

20

1

CSV

Check	Catalog / Data Sheet	Part No.	Distributor Inventory	Brand	Apps.	Feature	L x W Size	T(Max.) / mm	Inductance	Tolerance	Rated Current / A	Rdc (Max.) / Ω	SRF(Typ.) / GHz	Operating Temp. Range / °C	AEC-Q200	Simulation Model	Core Loss [Ref.]	Winding Loss [Ref.]	Total Loss [Ref.]	Temp. Rise / °C [Ref.]
		 SPM5030T-1R0M	Buy Now	TDK		<div>Wire Wound</div> <div>Metal Core</div> <div>Shield</div>	5.2mm x 5.0mm	3	1μH	±20%	10.1	0.01144		-40 to 125		<div>S</div> <div>N</div>	70.04μW	127.40mW	127.47mW	3.01

Compare

Catalog / Data Sheet

Simulation Model

20

1

CSV

Total Loss results

To re-calculate losses, repeat from step 3 above