SimSurfing: Operation Manual for Medium Voltage Capacitor Selection Tool

Ver.1.03

Murata Manufacturing Co., Ltd

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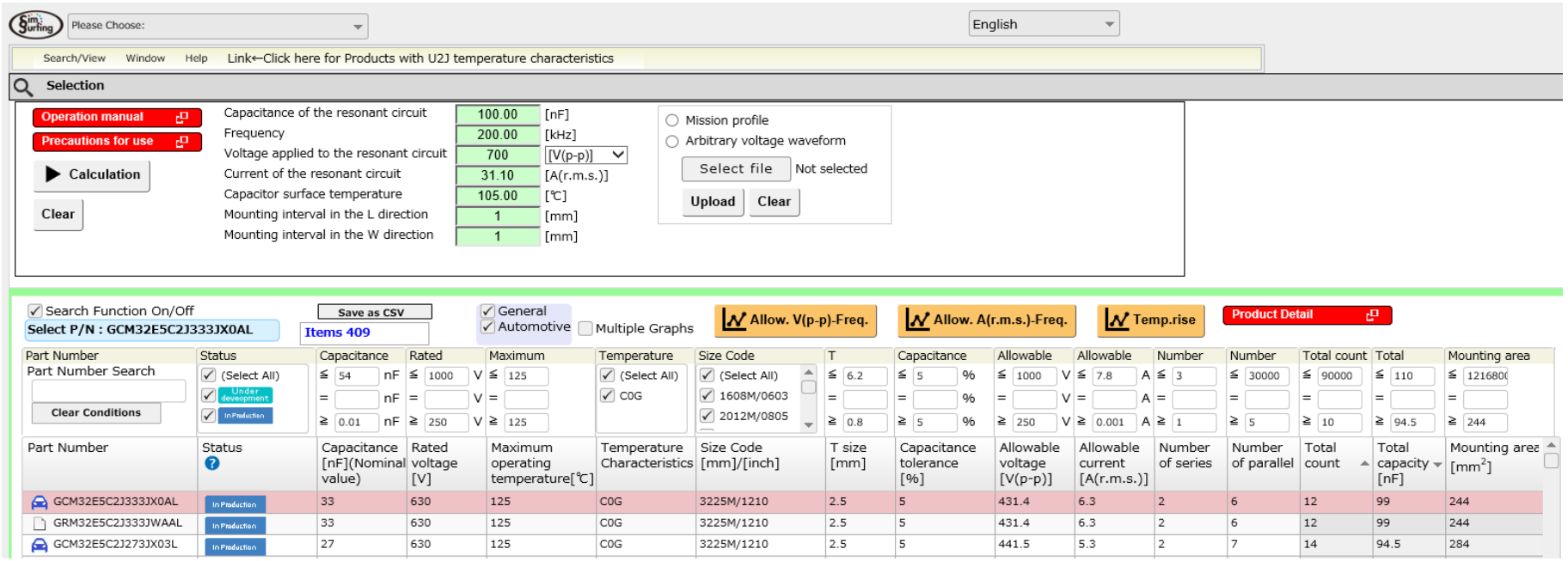
1. About This Software
1-1. Overview

The SimSurfing medium voltage capacitor selection tool (simply called "this software" below) is a program for selecting the recommended capacitor suitable for your usage conditions from Murata's temperature-compensating capacitors having a rated voltage of 250 V or more (some exclusions).

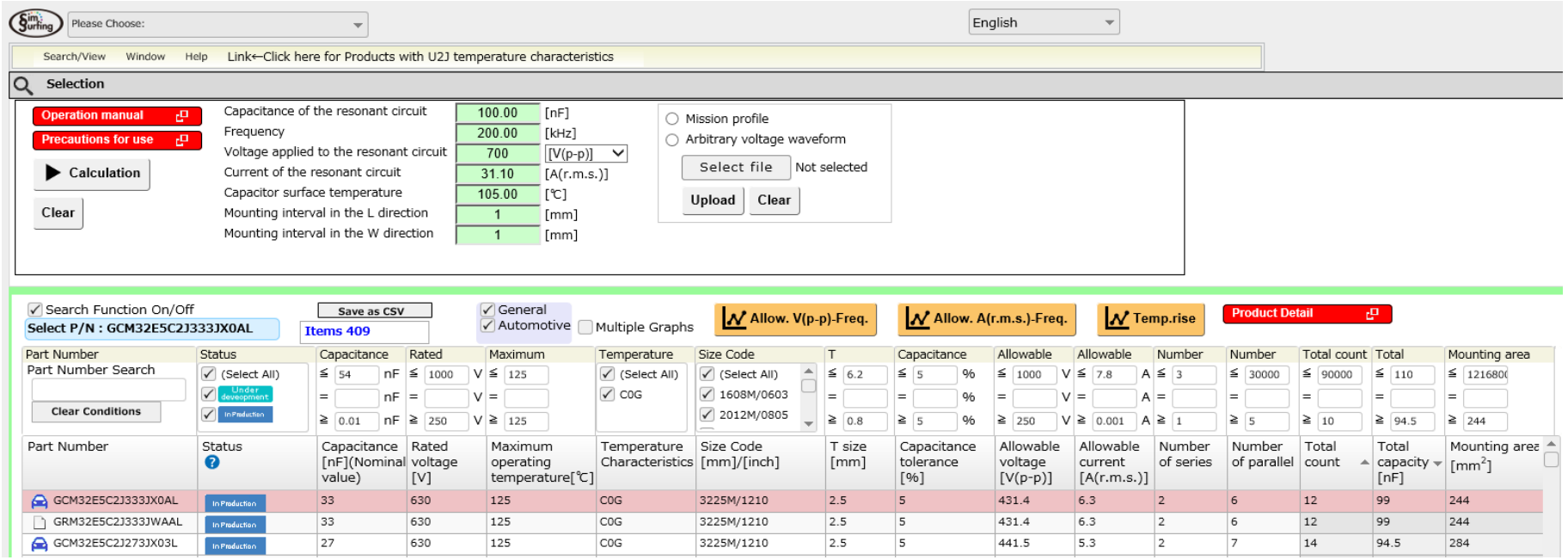
Displays the recommended values for the allowable voltage, allowable current, number of series, number of parallel, total number of parts, and mounting area of the target Murata product for the usage conditions (capacitance, sinusoidal voltage, sinusoidal frequency, capacitor surface temperature, mounting interval).

In the default settings, capacitors are displayed starting from the smallest mounting area.



1. About This Software
1-2. Main Features

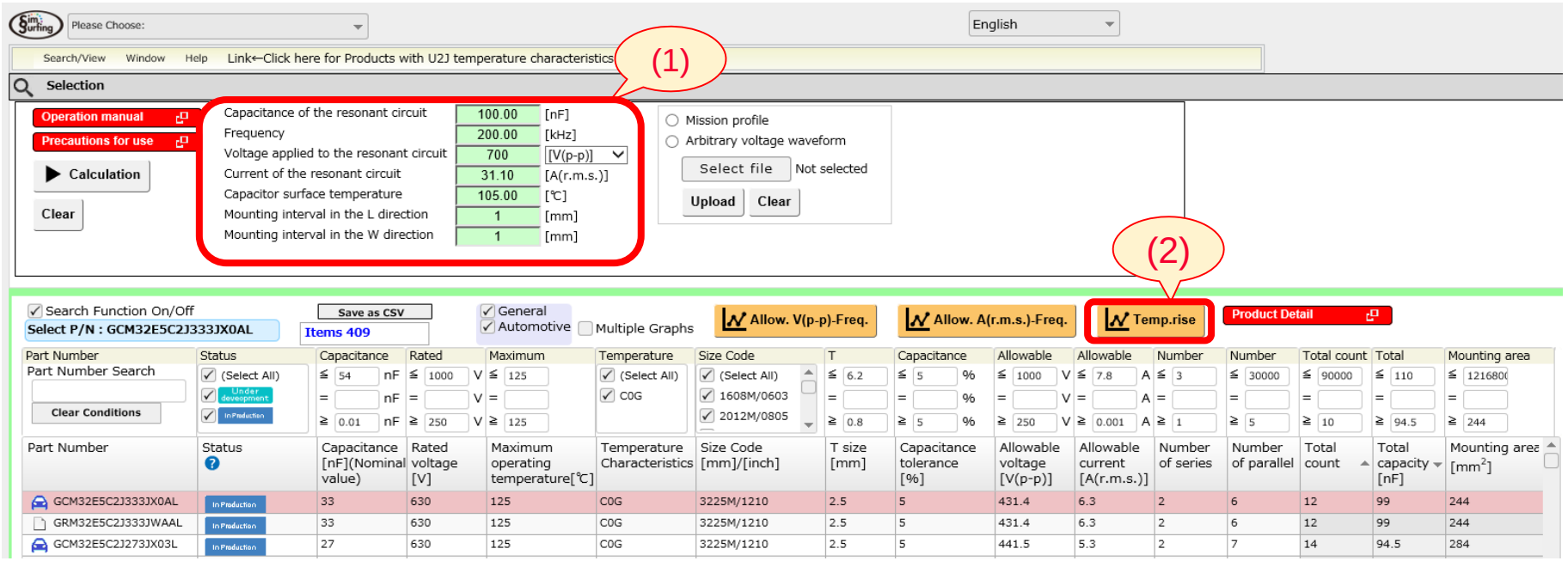
1. Displays the recommended values for the allowable voltage, allowable current, number of series, number of parallel, total number of parts, mounting area of the target Murata product for the usage conditions (capacitance, sinusoidal voltage, sinusoidal frequency, capacitor surface temperature, mounting interval). In the default settings, capacitors are displayed starting from the smallest mounting area.
2. Displays the allowable voltage characteristics graph, allowable current characteristics graph, and self-heating characteristics graph for the target Murata product.
3. The above calculations and data display can also be performed for mission profiles and arbitrary voltage waveforms by importing a CSV file.



2. Quick Operation Guide
2-1. Entering the Usage Conditions

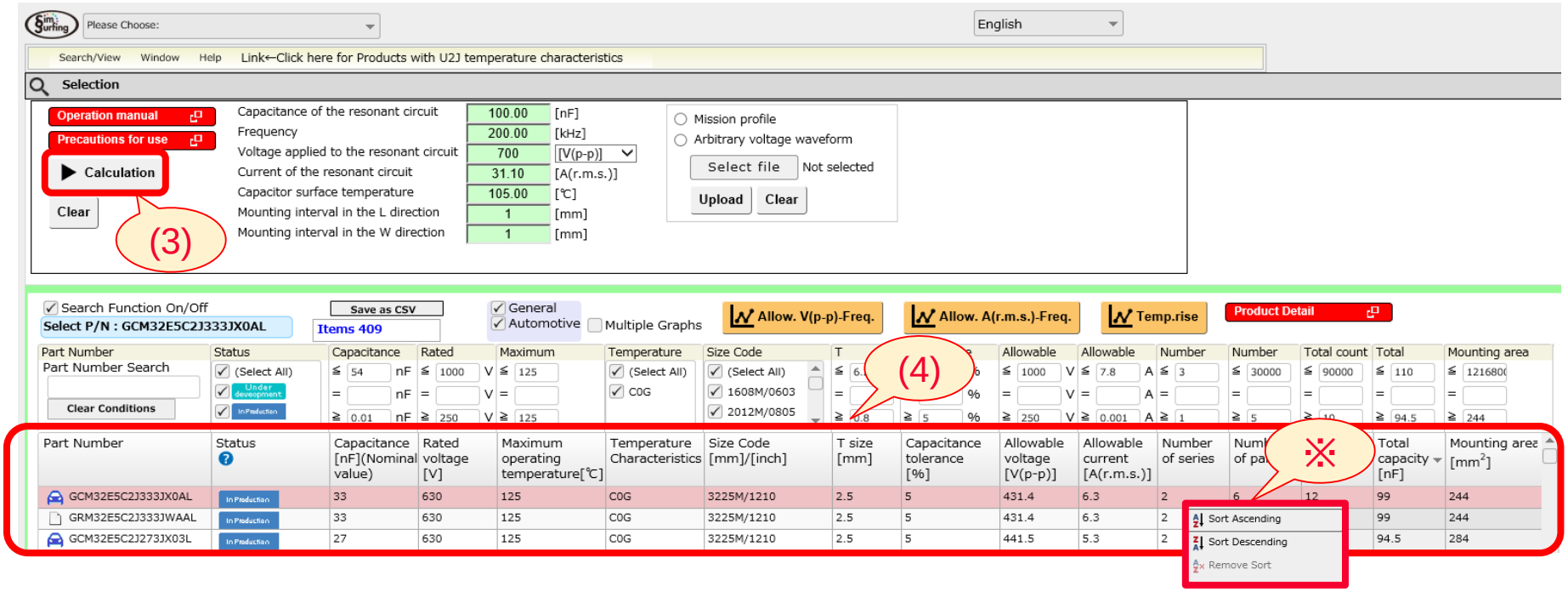
Start this software, and

(1) Enter the total electrostatic capacitance of the resonant circuit, sinusoidal frequency, voltage applied to the resonant circuit, capacitor surface temperature (including self-heating). Enter the capacitor mounting interval.
*The current flowing in the resonant circuit is automatically calculated.
*For the units of the voltage applied to the resonant circuit, select V (p-p) or V (r.m.s.).
*If the capacitor temperature (including self-heating) in your device is unknown, (2) refer to the self-heating characteristics that were measured by Murata.



2. Quick Operation Guide
2-2. Displaying the Calculation Results

(3) Click the Calculation button.
(4) The recommended values for the allowable voltage, allowable current, number of series, number of parallel, number of parts, mounting area are calculated for each capacitor.
*In the default settings, capacitors are displayed starting from the smallest mounting area. They can be sorted by item.



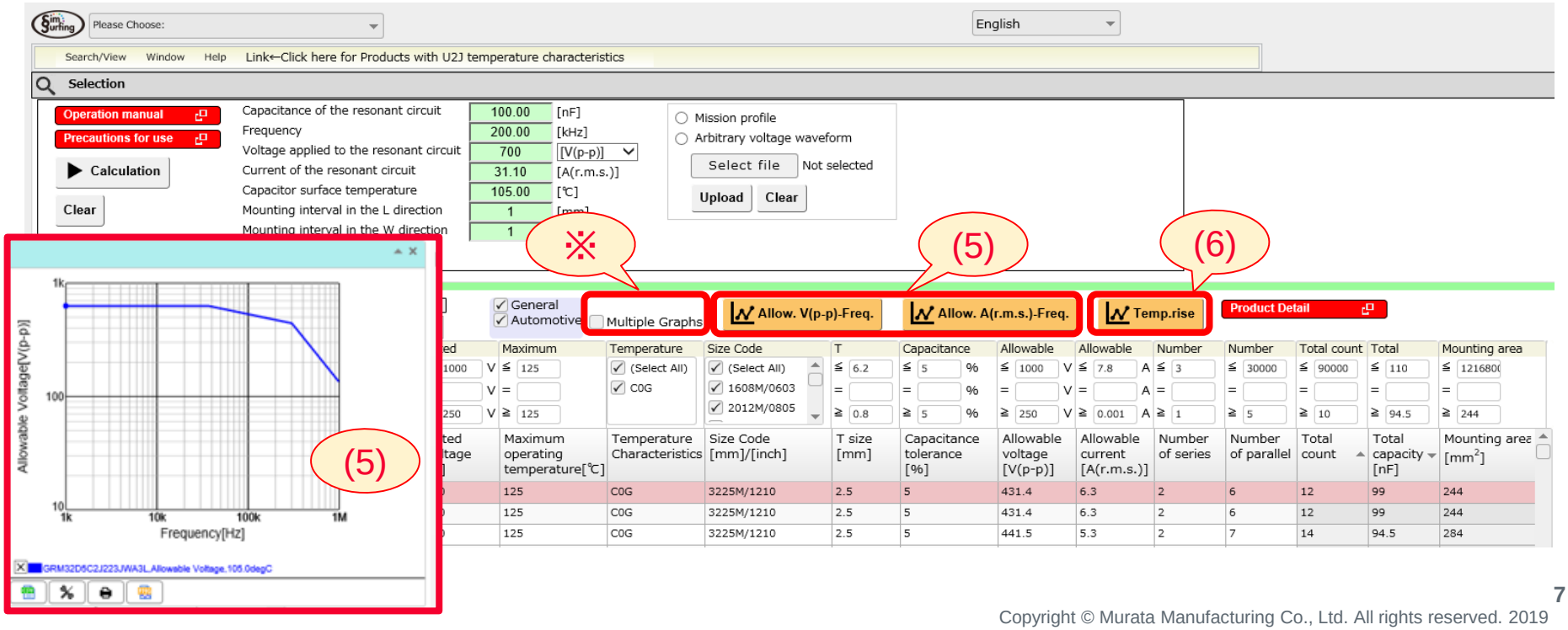
2. Quick Operation Guide
2-3. Displaying the Allowable Voltage, Allowable Current, and Temperature Rise ΔT Graphs

(5) Select the product name, and click the Allow.V(p-p)-Freq or Allow.A(r.m.s.)-Freq button to display the allowable voltage or allowable current-frequency characteristics.

*If you perform the operation in step (5) before clicking the Calculation button, the characteristics for an individual capacitor will be displayed.

(6) Clicking the Temp.rise button displays the temperature rise ΔT characteristics.

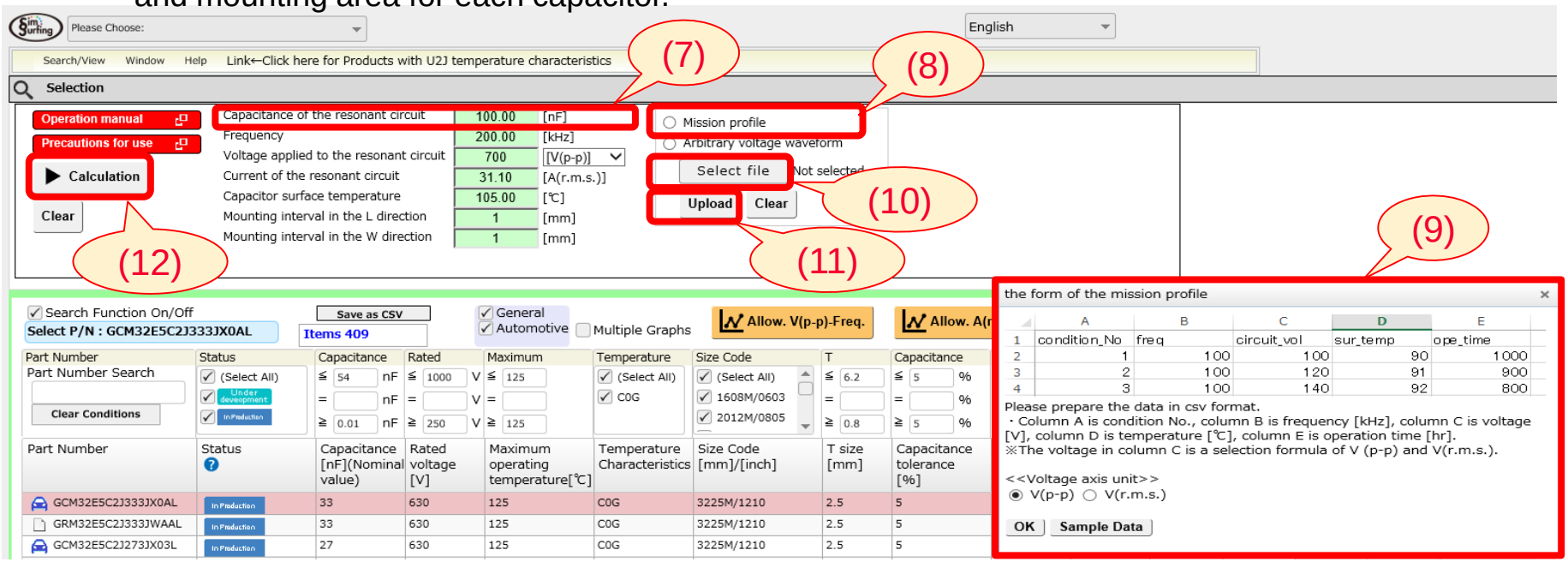
*If you insert a check mark for Multiple Graphs in steps (5) or (6), the graphs will be overlaid. Also, if you move the marker over a graph line, the numerical calculation result appears.



2. Quick Operation Guide
2-4. Optional Function: Support for Mission Profiles

The same calculations can also be performed by importing a CSV file where the mission profile was input.

(7) Enter the capacitance of the resonant circuit.
(8) Select the mission file.
(9) Select the voltage units of the imported CSV file, and click the OK button.
*You can download a sample CSV file by clicking the Sample Data button.
(10) Click the Select file button, and select the prepared CSV file.
(11) Click the Upload button to upload the CSV file.
(12) Clicking the Calculation button will calculate the recommended values for the allowable voltage, allowable current, number of series, number of parallel, number of parts, total capacitance, and mounting area for each capacitor.



2. Quick Operation Guide
2-5. Optional Function:
Support for Arbitrary Voltage Waveforms

The same calculations can also be performed by importing a CSV file where arbitrary voltage waveform was input (example: data obtained from an oscilloscope).

(13) Enter the capacitance of the resonant circuit and the capacitor surface temperature.

(14) Select the arbitrary voltage waveform.

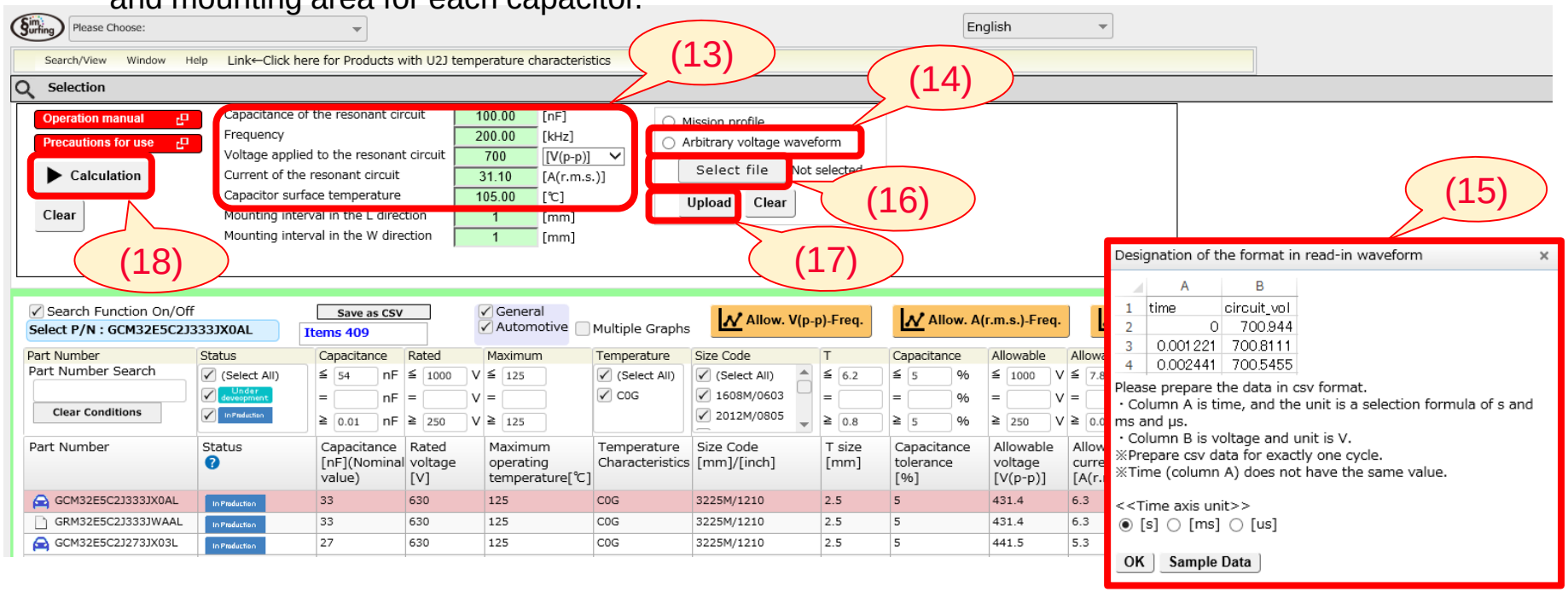
(15) Select the the time axis unit of the imported CSV file, and click the OK button.

*You can download a sample CSV file by clicking the Sample Data button.

(16) Click the Select file button, and select the prepared CSV file.

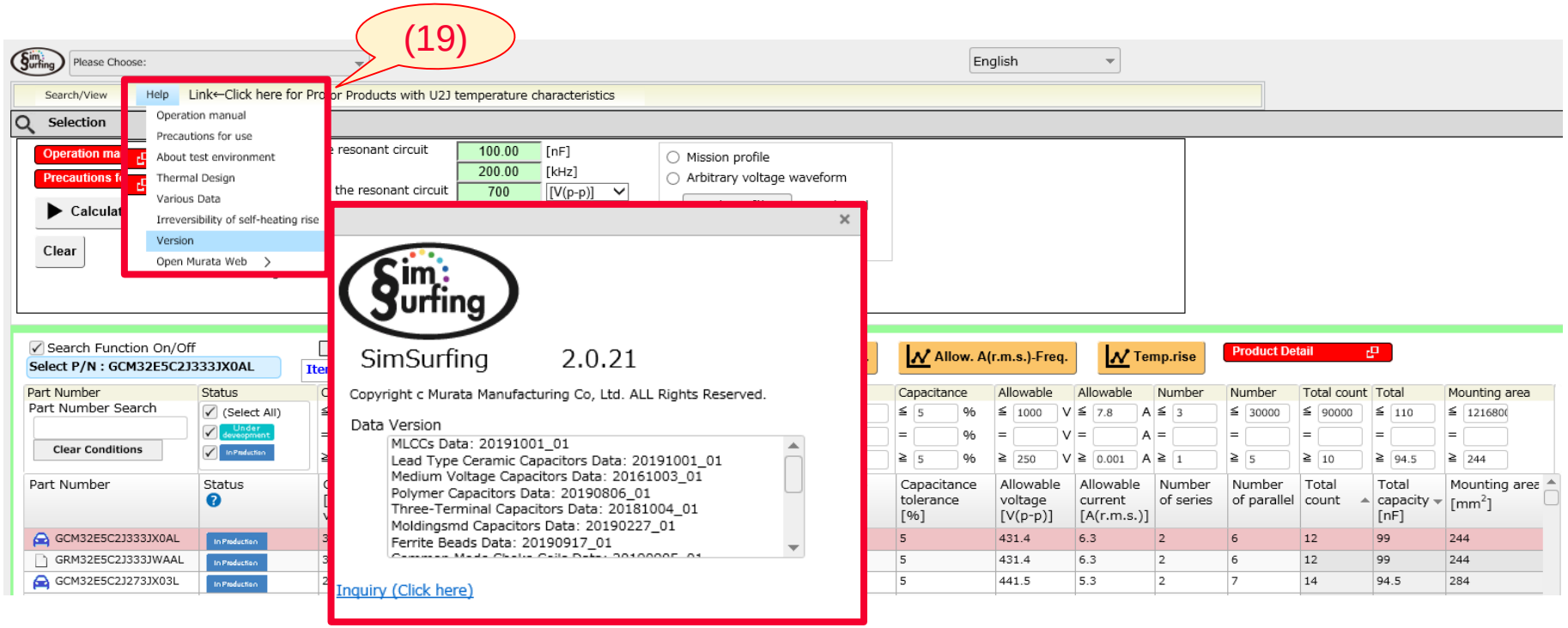
(17) Click the Upload button to upload the CSV file.

(18) Clicking the Calculation button will calculate the recommended values for the allowable voltage, allowable current, number of series, number of parallel, number of parts, total capacitance, and mounting area for each capacitor.



3. Version Check and Contact Information

(19) You can check the version information from the Help tab.



4. Troubleshooting

If the screen does not appear normal, try clearing the cache in your browser by using the following procedure.

■ **Internet Explorer**

1. Select Tools > "Internet Options.“
2. The "Internet Options" window opens. Select the "General" tab, and under "Browsing history," click the "Delete" button.
3. In the Delete Browsing History window, insert a check mark for all options except "Preserve Favorites website data," and click the "Delete" button.

■ **Microsoft Edge**

1. Click the ellipsis icon at the top right of the window, and then click "Settings.“
2. In the Settings window, click "Choose what to clear.“
3. In the Clear browsing data window, insert a check mark for "Cached data and files," and click the "Clear" button.

■ **Firefox**

1. Click the three lines (Settings) icon at the top right of the window, and then click "Options.“
2. In the Options window, select "Privacy & Security," and in the "Cookies and Site Data" section, click "Clear Data.“
3. In the Clear Data window, insert a check mark for "Cached Web Content," and click the "Clear" button.

■ **Chrome**

1. From the menu button at the top right of the window, select "History" > "History.“
2. This opens the "History" tab, and so click "Clear browsing data" on the left side of the screen.
3. A Settings tab is added, and a "Clear browsing data" window is opened. For Time range, select "All time," insert a check mark for "Cached images and files," and click the "Clear data" button.

Reference: How to Clear Your Browser Cache;https://helpx.adobe.com/jp/legacy/kb/222659.html