

SimSurfing IC-Timing Devise Search Tool Operation Manual

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Murata Manufacturing Co., Ltd



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1. About This Tool

1-1. Overview

- The IC-Timing Devices Search tool (hereinafter, “this tool”) performs a search operation to help you determine the part number of the Murata timing device that is most suitable for your IC and access information about the recommended circuit constant setting.

IC-Timing Device Search Tool

MHz band Timing Devices

Murata website Version Site Policy Privacy Policy

* You can search for ceramic resonators (CERALOCK) and crystal units appropriate to matching circuits with ICs

IC Manufacturer

IC Part Number

Oscillating Frequency Range to MHz Value MHz

Timing Device Part Number

IC Application

[Search](#) [Reset](#) [get URL](#) [Manual](#)

[Free sample request](#) [Stock Check \(Where to buy\)](#) [Contact us](#) [IC Matching Service Information](#)

[IC Manufacturer's top page](#) [Murata Product Info.\(Web\)](#) [Circuit Info.](#) [IC Product Info.](#)

[Highly Accurate Ceramic Resonators](#) [High-precision crystal units for automotive applications](#)

[+more detail](#)

[Save as CSV](#) [Select Items to display](#)

[Free sample request](#)

Select P/N : XRCGB27M000F3M00R0 [Items 46511](#)

CERALOCK SMD type
 Crystal Units LEAD type

IC Part Number	IC NOTE	IC Manufacturer	Part Number	Spec Application	Status	Oscillating Frequency[MHz]	Frequency
HD7790		AMD	XRCGB27M000FAN16R0	CE IeT MAB ME	In Production	27	+/- 25ppm
HD7xxx		AMD	XRCGB27M000FAN16R0	CE IeT MAB ME	In Production	27	+/- 25ppm
SL16010		AMD	XRCGB27M000F3M00R0	CE IeT MAB ME	In Production	27	+/- 30ppm

1. About This Tool

1-2. Main functions

- This tool helps you to search for the optimal timing device part numbers and circuit constants for ICs using the following search keys or a combination of them.

<Search keys>

- IC manufacturer
- IC part number
- Timing device oscillation frequency
- Murata timing device part number

- ◆ You can check circuit matching data for the combination of selected IC and timing device part numbers.
- ◆ You can check detailed specifications of the selected timing device part numbers.
- ◆ You can move to the selected IC manufacturer's website to check information (with some exceptions).

1. About This Tool

1-3. Target product

The series part numbers of timing devices searchable with this tool are as follows.

Type		Series	For consumer	For automotive	Frequency range
CERALOCK	SMD	CSTCR_G	✓	✓	4.00 to 7.99 MHz
		CSTNR_G	✓	✓	
		CSTNE_G	✓	✓	8.00 to 13.99MHz
		CSTNE_V	✓	✓	14.00 to 20.00MHz
	Lead	CSTLS_G	✓	✗	3.40 to 10.00 MHz
		CSTLS_X	✓	✗	16.00 to 70.00MHz
crystal units	SMD	XRCGB	✓	✓	16.000 to 50.000MHz
		XRCGE	✗	✓	16.000 to 50.000MHz
		XRCGA	✗	✓	16.000 to 50.000 MHz

2. Operation Guide

2-1. Starting this tool

- When you click the [IC-Timing Device Search Tool] on the top page of SimSurfing, the screen of this tool will be displayed.

The screenshot shows the SimSurfing website interface. At the top, there is a navigation bar with the SimSurfing logo, 'Design Support Software "SimSurfing"', a language dropdown set to 'English', and the muRata logo. Below this, there are links for 'Products page top' and 'Design Tools page top'. The main content area is divided into two sections: 'Characteristics Viewer' and 'Selection Tool'. The 'Characteristics Viewer' section includes a list of electronic components such as Multilayer Ceramic Capacitors, Lead type Ceramic Capacitors, Ferrite Beads, and Common mode Choke Coils. The 'Selection Tool' section contains various design support tools, including the 'IC-Timing Device Search Tool', which is highlighted with a red box and a red arrow. The 'IC-Timing Device Search Tool' interface is shown in a separate window, featuring a search form with fields for 'IC Manufacturer', 'IC Part Number', 'Oscillating Frequency', and 'Timing Device Part Number'. It also includes a 'Search' button, a 'Free sample request' button, and a table of search results. The table lists IC Part Numbers, IC NOTES, IC Manufacturers, Part Numbers, Spec Applications, Status, Oscillating Frequency, and Frequency.

IC Part Number	IC NOTE	IC Manufacturer	Part Number	Spec Application	Status	Oscillating Frequency[MHz]	Frequency
HD7790		AMD	XRCGB27M000FAN16R0	CE Ict MAB ME	In Production	27	+/- 25ppm
HD7xxx		AMD	XRCGB27M000FAN16R0	CE Ict MAB ME	In Production	27	+/- 25ppm
SL16010		AMD	XRCGB27M000F3M00R0	CE Ict MAB ME	In Production	27	+/- 30ppm

2. Operation Guide

2-2. Screen layout (1/4)

IC-Timing Device Search Tool

MHz band Timing Devices

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* You can search for ceramic resonators (CERALOCK) and crystal units appropriate to matching circuits with ICs

IC Manufacturer: [Dropdown] (c)

IC Part Number: [Dropdown] (c)

Oscillating Frequency: [Range/Value] [Input] to [Input] MHz (c)

Timing Device Part Number: [Input] (c)

IC Application: [Dropdown] (c)

[Search] [Reset] [get URL] [Manual] (d)

Free sample request | Stock Check (Where to buy) | Contact us | IC Matching Service Information

IC Manufacturer's top page | Murata Product Info.(Web) | Circuit Info. | IC Product Info.

Highly Accurate Ceramic Resonators | High-precision crystal units for automotive applications

+more detail

Save as CSV | Select items to display

Free sample request

Select P/N : XRCGB27M000F3M00R0 | Items 46511

CERALOCK SMD type
 Crystal Units LEAD type

IC Part Number	IC NOTE	IC Manufacturer	Part Number	Spec Application	Status	Oscillating Frequency[MHz]	Frequency
HD7790		AMD	XRCGB27M000FAN16R0	CE TeT MAB ME	In Production	27	+/-25ppm
HD7xxx		AMD	XRCGB27M000FAN16R0	CE TeT MAB ME	In Production	27	+/-25ppm
SL16010		AMD	XRCGB27M000F3M00R0	CE TeT MAB ME	In Production	27	+/-30ppm

- (a) **Top Screen Switch:**
A button to return to the SimSurfing top screen.
- (b) **Menu bar :**
“Murata website” : Web link to our company website.
“Version” : Version of the SimSurfing and the stored data.
- (c) **Search Condition Input :**
Enter the condition to search by combining the IC product name and the timing device part number.
※For details on setting the search conditions, please refer to "2-3. Basic Operations" (P.11).
- (d) **Manual :**
Displays the operation manual (this document).

2. Operation Guide

2-2. Screen layout (2/4)

IC Part Number	IC NOTE	IC Manufacturer	Part Number	Spec Application	Status	Oscillating Frequency[MHz]	Frequency
HD7790		AMD	XRCGB27M000FAN16R0	CE TeT MAB ME	In Production	27	+/-25ppm
HD7xxx		AMD	XRCGB27M000FAN16R0	CE TeT MAB ME	In Production	27	+/-25ppm
SL16010		AMD	XRCGB27M000F3M00R0	CE TeT MAB ME	In Production	27	+/-30ppm

(e) Search :

Click the button to search for combinations of IC product names and our timing device part numbers based on specified search conditions, and display list (h).

(f) Reset :

Click the button to clear the search results and search keys.

(g) Select P/N :

Displays the timing device part number selected in list (h).

(h) List display of IC part number and Murata timing device part number combinations :

The list displays the IC part number and Murata timing device part number combinations determined by the search.

(i) Filter Function:

Toggle the checkboxes to refine list (h).

2. Operation Guide

2-2. Screen layout (3/4)

IC-Timing Device Search Tool

MHz band Timing Devices

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* You can search for ceramic resonators (CERALOCK) and crystal units appropriate to matching circuits with ICs

IC Manufacturer:

IC Part Number:

Oscillating Frequency: Range to MHz Value MHz

Timing Device Part Number:

IC Application:

Search | **Reset** | **get URL** | **Manual**

Free sample request | **Stock Check (Where to buy)** | **Contact us** | **IC Matching Service Information**

IC Manufacturer's top page | **Murata Product Info.(Web)** | **Circuit Info.** | **IC Product Info.**

Highly Accurate Ceramic Resonators | **High-precision crystal units for automotive applications**

+more detail

(i) **Save as CSV** | **Select items to display** | CERALOCK | Crystal Units | SMD type | LEAD type

Free sample request | **Select P/N : XRCGB27M000F3M00R0** | **Items 46511**

IC Part Number	IC NOTE	IC Manufacturer	Part Number	Spec Application	Status	Oscillating Frequency[MHz]	Frequency
HD7790		AMD	XRCGB27M000FAN16R0	CE TeT MAB ME	In Production	27	+/-25ppm
HD7xxx		AMD	XRCGB27M000FAN16R0	CE TeT MAB ME	In Production	27	+/-25ppm
SL16010		AMD	XRCGB27M000F3M00R0	CE TeT MAB ME	In Production	27	+/-30ppm

(j) Save as CSV :

By clicking the button, you can save the data displayed in the list as a CSV file.

```

//////////
Murata Products List 2025/10/30
Category:Timing Devices
Selected conditions: (CERALOCK OR Crystal Units) AND (SMD type OR LEAD type)

ICNAME  ICNOTE  ICMAKER  CRAHINM  spec_app  supplsta  SYUHASU  KOSA  CL1  CL2  RF
HD7790  AMD     XRCGB27  0115121  2         27 +/-25ppm  18  18  1M
HD7xxx  AMD     XRCGB27  0115121  2         27 +/-25ppm  18  18  1M
SL16010  AMD     XRCGB27  0115121  2         27 +/-30ppm  5   5  Open
    
```

2. Operation Guide

2-2. Screen layout (4/4)

IC-Timing Device Search Tool

MHz band Timing Devices

Murata website Version Site Policy Privacy Policy

* You can search for ceramic resonators (CERALOCK) and crystal units appropriate to matching circuits with ICs

IC Manufacturer: [Dropdown]
IC Part Number: [Dropdown]
Oscillating Frequency: Range [] to [] MHz
Frequency: Value [] MHz
Timing Device Part Number: [Text]
IC Application: [Dropdown]

Search, Reset, get URL, Manual

Free sample request (k), Stock Check (Where to buy) (l), Contact us (m), IC Matching Service Information (n)

IC Manufacturer's top page, Murata Product Info.(Web), Circuit Info., IC Product Info.

Highly Accurate Ceramic Resonators, High-precision crystal units for automotive applications

Save as CSV, Select items to display, Free sample request, Select P/N : XRCGB27M000F3M00R0, Items 46511

CERALOCK SMD type
 Crystal Units LEAD type

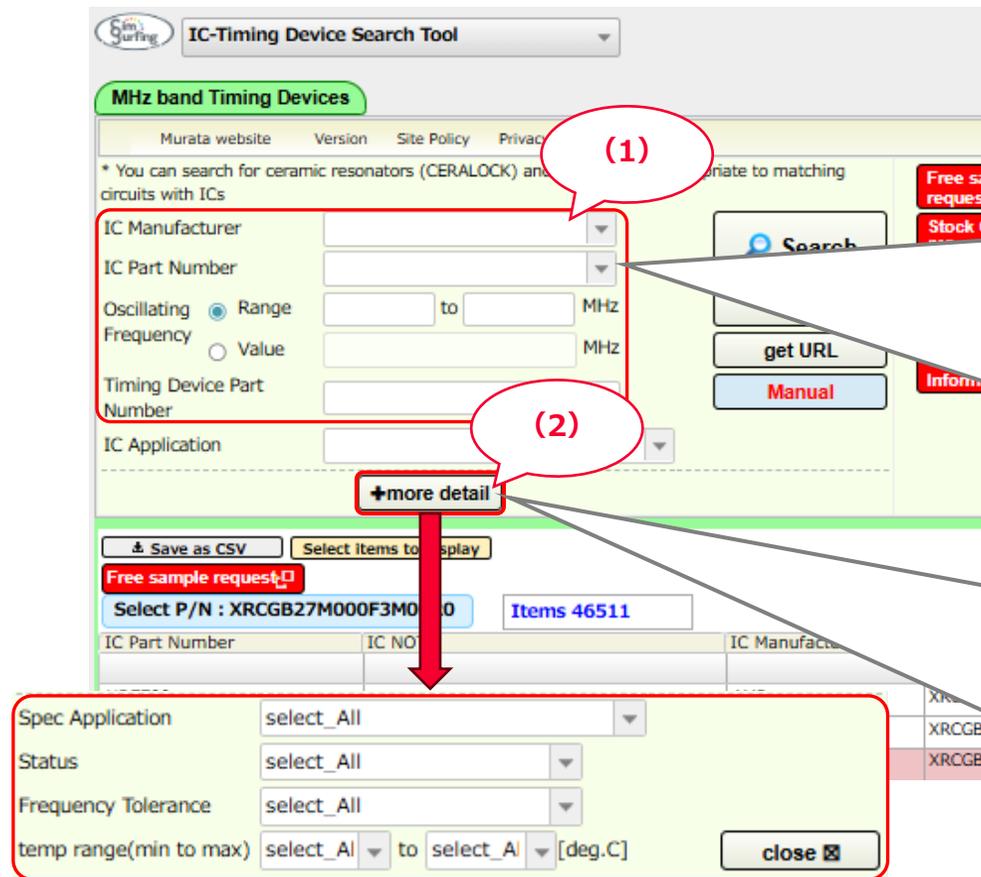
IC Part Number	IC NOTE	IC Manufacturer	Part Number	Spec Application	Status	Oscillating Frequency[MHz]	Frequency
HD7790		AMD	XRCGB27M000FAN16R0	CE TeT MAB ME	In Production	27	+/-25ppm
HD7xxx		AMD	XRCGB27M000FAN16R0	CE TeT MAB ME	In Production	27	+/-25ppm
SL16010		AMD	XRCGB27M000F3M00R0	CE TeT MAB ME	In Production	27	+/-30ppm

- (k) IC Manufacturer's top page :
Opens the manufacturer's website for the IC item selected in the list.
- (l) Murata Product Info. (Web) :
You can open the product detail page on our website for the timing device part number selected in the list.
- (m) Circuit Info. :
You can open the data file with recommended circuit values for the IC item and timing device part number selected in the list.
- (n) IC Product Info. :
Opens the information file for the IC item selected in the list or the IC manufacturer's product information website.

2. Operation Guide

2-3. Basic operations (1/4)

- Enter search criteria in (1) **Search Condition Input** . You can further narrow down the results using (2) **more detail** button.



<Search conditions>

*You can enter the following items or a combination of item conditions.

- **IC Manufacturer :**
Select from the dropdown list.
- **IC Part Number :**
Enter the IC product name you wish to search for. Partial searches for IC product names are also possible.
Keywords will be converted to uppercase. "μ" (Greek letter mu) is displayed as lowercase "u". If you want to search for "μ", please enter the lowercase "u".
If you want to search for "U", please enter the uppercase "U"..
- **Oscillating Frequency :**
You can search by specifying a frequency or frequency range.
Select using the radio buttons and enter the frequency you wish to search for.
- **Timing Device Part Number :**
Enter the timing device part number you wish to search for.
Partial is also possible.

<More detail button>

*If you want to further narrow down the search criteria for (1), please click the + button to open and add detailed criteria.

- **Application :**
You can narrow down application with checkboxes.
- **Status :**
You can narrow down production status by selecting In Production / NRND / To be discontinued / Discontinued with checkboxes.
- **Frequency Tolerance :**
You can narrow down frequency tolerance values with checkboxes.
- **Temp range. (min.) :**
You can narrow down the minimum operating temperature value with checkboxes.
- **Temp range (max.) :**
You can narrow down the maximum operating temperature value with checkboxes.

2. Operation Guide

2-3. Basic operations (2/4)

Clicking the (3) Search button will display the search results in the (4) part number list.

The screenshot shows the 'IC-Timing Device Search Tool' interface. It includes a search form with fields for IC Manufacturer, IC Part Number, Oscillating Frequency (Range or Value), Timing Device Part Number, and IC Application. A 'Search' button is highlighted with a red circle and labeled (3). To the right of the search form are several utility buttons: 'Stock Check (Where to buy)', 'Contact us', 'IC Matching Service Information', 'IC Manufacturer's top page', 'Murata Product Info.(Web)', 'Circuit Info.', and 'IC Product Info.'. Below the search form, there are options to 'Save as CSV', 'Select Items to display', and 'Free sample request'. A table of search results is displayed below, with the first three rows highlighted in red and labeled (4). The table columns are: IC Part Number, IC NOTE, IC Manufacturer, Part Number, Spec Application, Status, Oscillating Frequency [MHz], and Frequency.

IC Part Number	IC NOTE	IC Manufacturer	Part Number	Spec Application	Status	Oscillating Frequency [MHz]	Frequency
HD7790		AMD	XRCGB27M000FAN16R0	CE TeT MAB ME	In Production	27	+/-25ppm
HD7xxx		AMD	XRCGB27M000FAN16R0	CE TeT MAB ME	In Production	27	+/-25ppm
SL16010		AMD	XRCGB27M000F3M00R0	CE TeT MAB ME	In Production	27	+/-30ppm

*By adding or modifying search conditions, you can narrow down combinations of IC product names and part numbers for timing devices.

2. Operation Guide

2-3. Basic operations (3/4)

- ◆ If the (4) **part number list** is not displayed, click the (5) **Reset** button to reset the search conditions, reduce the search criteria, and click the (3) **Search** button again.

The screenshot shows the 'IC-Timing Device Search Tool' interface. It includes search filters for IC Manufacturer, IC Part Number, Oscillating Frequency (Range or Value), Timing Device Part Number, and IC Application. A 'Search' button is highlighted with callout (3). A 'Reset' button is highlighted with callout (5). Below the search area, there are options to 'Save as CSV', 'Select Items to display', and 'Free sample request'. A table of search results is shown, with the table header and the first three rows highlighted by a red box and callout (4). The table columns are: IC Part Number, IC NOTE, IC Manufacturer, Part Number, Spec Application, Status, Oscillating Frequency [MHz], and Frequency.

IC Part Number	IC NOTE	IC Manufacturer	Part Number	Spec Application	Status	Oscillating Frequency [MHz]	Frequency
HD7790		AMD	XRCGB27M000FAN16R0	CE TeT MAB ME	In Production	27	+/-25ppm
HD7xxx		AMD	XRCGB27M000FAN16R0	CE TeT MAB ME	In Production	27	+/-25ppm
SL16010		AMD	XRCGB27M000F3M00R0	CE TeT MAB ME	In Production	27	+/-30ppm

2. Operating Guide

2-3. Basic operations (4/4)

- Clicking the (6) Save as CSV button allows you to save the list of results displayed in the (4) part number list.

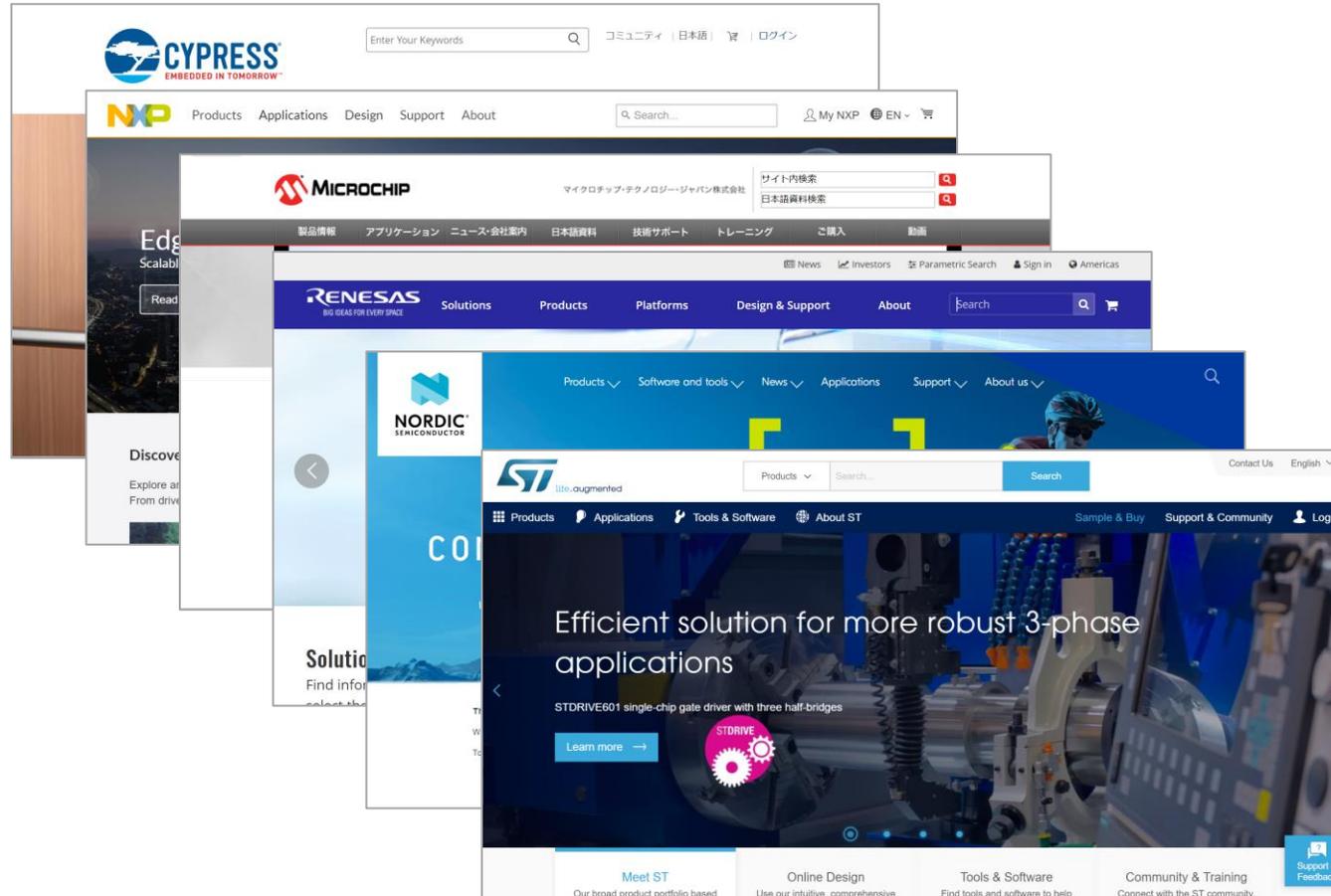
The screenshot shows the 'IC-Timing Device Search Tool' interface. It features a search form with fields for IC Manufacturer, IC Part Number, Oscillating Frequency (Range or Value), Timing Device Part Number, and IC Application. A search button is present. Below the search form, there are several utility buttons: 'Free sample request', 'Stock Check (Where to buy)', 'Contact us', and 'IC Matching Service Information'. On the right side, there are links for 'IC Manufacturer's top page', 'Murata Product Info.(Web)', 'Circuit Info.', and 'IC Product Info.'. There are also promotional banners for 'Highly Accurate Ceramic Resonators' and 'High-precision crystal units for automotive applications'. At the bottom, there is a 'Save as CSV' button (6) and a 'Select Items to display' dropdown. Below this, there are checkboxes for 'CERALOCK', 'Crystal Units', 'SMD type', and 'LEAD type'. A table of results is shown, with a red box highlighting the table (4). The table has columns for IC Part Number, IC NOTE, IC Manufacturer, Part Number, Spec Application, Status, Oscillating Frequency [MHz], and Frequency.

IC Part Number	IC NOTE	IC Manufacturer	Part Number	Spec Application	Status	Oscillating Frequency [MHz]	Frequency
HD7790		AMD	XRCGB27M000FAN16R0	CE TeT MAB ME	In Production	27	+/-25ppm
HD7xxx		AMD	XRCGB27M000FAN16R0	CE TeT MAB ME	In Production	27	+/-25ppm
SL16010		AMD	XRCGB27M000F3M00R0	CE TeT MAB ME	In Production	27	+/-30ppm

Appendix

Examples of Published Materials (1/3)

(k) Examples of the linked IC manufacturers' websites



*This is the manufacturer site that has approved mutual linking.

Appendix

Examples of Published Materials (2/3)

(I) Example of Murata Product Info. (Web)

The screenshot displays the Murata product information page for the XRCGB24M000F0L00R0. The page is organized into several sections:

- Product Details:** Shows the part number XRCGB24M000F0L00R0 and navigation options like 'Send your inquiry?', 'Specs free sample request', 'Stock Check (Where to buy)', and 'Download a PDF file of this page'.
- Appearance & Shape:** Includes a photograph of the component and detailed technical drawings with dimensions in millimeters. Dimensions include 2.0±0.1, 1.6±0.1, 0.8±0.05, 1.4, 0.3, 0.1, 0.5±0.1, 0.15, 0.8±0.1, 1.3±0.1, and 0.3. A legend identifies (1) Crystal Terminal, (2) No Connection, and (3) Crystal Terminal. A 'Monthly Code' is also indicated.
- Specifications:** A table listing key parameters:

Product Type	Crystal Unit
Series	XRCGB
Type	HCR2016
Frequency	24,000Hz
Frequency Tolerance	±100ppm max (25±3°C)
Operating Temperature Range	-30°C to 85°C
Frequency Shift by Temperature	±50ppm max
Frequency Aging	±50ppm max
Equivalent Series Resistance (ESR)	150ohm max
Drive Level (DL)	150µW (300µW max)
Load Capacitance (CL)	6pF
Shape	SMD
Wash	Not available
L x W (size)	2.0 x 1.6mm
- Features:** Describes the crystal unit as small and highly accurate, based on Murata's technology. It lists three features:
 - The series is available for high accuracy resonator applications like 5-ATA and USB2.0.
 - The resonator is extremely small (2.0 x 1.6 x 0.7 mm), reducing mounting area.
 - The series complies with RoHS, being lead-free (phase 3).
- Applications:** A dropdown menu currently shows 'Consumer'.
- Packaging Information:** A table showing:

Packaging	Specifications	Minimum Order Quantity
R0	100mm Plastic Tape	3000
- Product Data:** Includes a graph titled 'Temperature Characteristics' showing Frequency Change (%) vs. Temperature (°C). The graph shows a curve that is relatively flat around 0% change across the temperature range from -30°C to 85°C.

Appendix

Examples of Published Materials (3/3)

(m) Example of Circuit Info.

Evaluation Data of CERALOCK® Oscillation Circuit muRata

Technical Data of Ceramic Resonator

MURATA Part No.: CSTCR4M00G55B-R0

Applied to MPC5834M

Murata Manufacturing Co., Ltd.

TCD-12-0185

Evaluation Data of CERALOCK® Oscillation Circuit muRata

Recommendation 推奨回路構成

IC	MPC5834M
Resonator	CSTCR4M00G55B-R0
Supply Voltage	3.3 V
Supply Current	No. constant
Output Frequency	470kHz
Operating Temperature Range	-40 to +125deg.C

Characteristics of Oscillation Circuit 発振回路特性

Item	Value	Criterion	Notes
Voltage	V _{IH} 1.6 [V]	≥ 2.3V	Input high voltage
	V _{IL} -0.2 [V]	≥ -0.3V	Input low voltage
	V _{OH} 2.0 [V]		Output high voltage
	V _{OL} -0.1 [V]		Output low voltage
Voltage	V _I limit sample 1.7 [V]	≥ 0.4 × V _I (at 2.0V)	Input level at input side
	V _O limit sample 2.1 [V]	≥ 0.8 × V _O (at 2.0V)	Output level at output side
	V _{CC} 3.5 [V]	≤ 4.5V	Power supply voltage for oscillation event
Start Up Time	0.08 [ms]		Time to reach 50% of the oscillation level after steady state
Frequency Correlation	0.08 [ppm/deg.C]		Oscillation frequency correlation against temperature

Characteristics to Check 判定項目

Item	Criterion	Notes
1. Oscillation	Amplitude: 0.5V to 1.0V	No. deviation from 0.500V to 0.500V
2. Oscillation Voltage	Supply voltage: 3.3V	±0.3V ≤ V _{IH} , V _{IL} ≤ V _{OH} ≤ V _{OL} ± 0.4V
3. Oscillation Frequency	470kHz	
4. Oscillation Waveform	Maximum Starting Voltage: 0.1V	

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Data of CERALOCK® Oscillation Circuit muRata

Waveform data on recommendable circuit condition

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