

Murata's IC Characterization Service



Purpose

- To evaluate the combination of the IC and the ceramic resonator to determine the optimum circuit conditions, preventing such oscillation failures, as stop oscillation and irregular oscillation.
- To measure the frequency correlation between customer's PCB and Murata standard test circuit, that's critical for tight tolerance applications.

Benefits

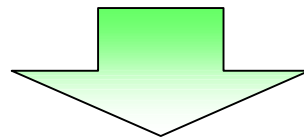
- Customer can save engineering time evaluating the oscillation circuit of an IC in terms of preventing oscillation failure (stop oscillation & irregular oscillation).
- Murata insures resonator's oscillation with optimum resonator part number and circuit conditions.
- Customer will know the frequency correlation, and if required, the resonator's frequency can be adjusted to the customer's IC/PCB, eliminating any frequency correlation issues.
- **IC evaluation service is free.**

Murata's IC Characterization Service



When does Murata recommends using the IC Characterization process?

- **IC is changed. (Part number, version, flash to mask, mask number, oscillator mode, etc.)**
- **PCB is changed. (material, layout, etc.)**
- **If circuit conditions are changed. (due to noise, frequency adjustment, etc.)**



Murata will evaluate your PCB and report the optimum circuit conditions.

What information Murata requests for IC evaluation?

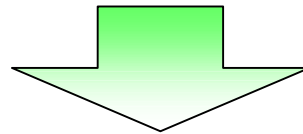
- IC part number
- Oscillating frequency (i.e. 4.000MHz)
- Resonator's part number (or series number)
- Operating temperature range (i.e. -40 to +85C)
- Supply voltage range (i.e. 5V+/-10%)
- IC pin diagram (how to power if PCB)
- Required total oscillating frequency tolerance (i.e. +/-0.5% in total)
- Your model or program name / MP schedule / demand
- 2-3 Samples of the IC, or “best case”, samples of IC on your PCB. **IC on PCB required for frequency correlation measurements.**

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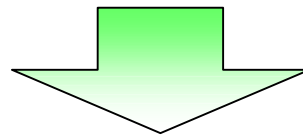
IC evaluation flow and technical reports from Murata

Customer sends IC or PCB (IC mounted on PCB) to Murata along with necessary information.



Initial Report

To inform the optimum circuit conditions and Murata resonator part number



Final Report

To report the optimum circuit conditions, frequency correlation and technical data (performance data).

Murata sends back IC / PCB to customer.

Murata's IC Characterization Service



Initial Report from Murata

IC P/N, Resonator



Your required conditions



Our recommendation



Advisory notes



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11 March, 2003

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Subject : [REDACTED]

1. Evaluation Information

Customer	[REDACTED]
Application	[REDACTED]
IC Part No. (Manufacturer)	[REDACTED]
Item (Frequency)	CERALOCK® (8.000MHz)

2. Customer's Request Conditions

I C Name	Freq. [Hz]	Parts Number	Circuit Condition				Supply Voltage [V]	Temp. Range [°C]
			C1 [pF]	C2 [pF]	Rf [ohm]	Rd [ohm]		
[REDACTED]	8.000M	CSTCE8M00G55A-R0	(33)	(33)	Open	0	Set 9 to 16	-40 to 105

Note: CST** has the built-in loading capacitors.

3. Recommendable Conditions

I C Name	Freq. [Hz]	Parts Number	Circuit Condition				Supply Voltage [V]	Temp. Range [°C]	Schedule for Evaluation Data
			C1 [pF]	C2 [pF]	Rf [ohm]	Rd [ohm]			
[REDACTED]	8.000M	CSTCE8M00G55A-R0	(33)	(33)	Open	0	Set 9 to 16	-40 to 105	28. Mar. 2003

Note: CST** has the built-in loading capacitors.
Suffix indicates packaging style: -CMB type (CMB: Plastic tape package (φ=100mm)), -B0: Bulk!

4. Note

[REDACTED]

Should you have any problem, please do not hesitate to contact us.

Thanks and best regards.

Fig.1 Test Circuit of CST** type

