

muRata SPEAKS

TECHNOLOGY | SOLUTIONS | INNOVATIONS

Questions & Answers



1 Why safety capacitor is required?

The function of these capacitors is to protect against surges and transients, as well as providing EMI filtering. Safety capacitors are circuit-specific and serve to protect the circuit and the user from high-voltage surges by shunting the impulse energy to ground. One common cause of such surges is lightning strikes.

2 How are Safety-capacitors designed and deployed to ensure safety?

Safety capacitors are designed to enhanced electrical and mechanical reliability standards. Capacitance values are also limited to reduce the current passing through the capacitor when AC voltage is applied, and reduce the energy stored to a safe limit when DC voltage is applied. Capacitors must be tested to applicable standards to qualify them for use as Y-capacitors.

3 What can Murata offer in SAFETY capacitor?

We offered safety Capacitor mainly in X1 Y1 and X1 Y2 class capacitor with the rated voltage from AC250 Up to AC500V with Most of the safety approval coverage eg UL, ENEC,CQC ,IEC60384-14 etc

4 What is the line-up offering for DK1 series from Murata?

We offer size of 11.4*6mm, Rated Voltage of 250Vac ~ 300Vac, Capacitance values of 10pF ~ 1500pF

5 What do you mean by dual-pad landpattern? What is 2016 footprint compatibility?

Murata crystal can be mounted on 3225/2520 size as well. Due to the pulling force of solder paste, crystal will be auto re-position during flow process. Hence, existing design with 3225/2520 can consider to use Murata 2016' crystal if they don't wish to change PCB layout.

6 Do Murata provide frequency calibration? How long it needs?

Yes, we did provide FOC IC matching to measure frequency correlation, Negative Resistive ratio (oscillation margin), drive level, etc. Once our evaluation team received the board, we may provide measurement result in a week time.

7 What's Murata Crystal line up? Do you cover low frequency or only high frequency?

Murata has both - Ceramic Resonator (CERALOCK): 4MHz to 20mHz and Crystal Resonator:16MHz to 50MHz.

8 Why LPWAN is getting famous for Outdoor lighting units ?

As you can see, conventional systems are running with Mesh and point to point subGhz non standard wireless solution. But very fast, it is moving towards LPWAN solutions. LPWAN reduces the solution complexity and the operation cost since these are standard and which is low power and long range and multiple end node access. Since point to point with longer distant reliable communication all customer looks that leads them to come LPWAN technology like NB-IOT, CAT-M and LoRa, etc. The trend looks huge for LPWAN solution.

9 How many nodes can connect to a lora gateway, if use like a street light application ? Is mesh possible over LoRa ?

It depends on the gateway specifications like channel support, RF power. which is usually defined by the number of packets it can support. For instance, if there is a 8-channel Gateway supporting 1.5M packets/day, and if the application sends 1 packet per hour, then more than 62,000 nodes can be handled by that Gateway. Yes, it is possible for LoRa nodes to talk to each other. But changes need to be made to the LoRa stack for it. Hence, the system will not comply to LoRa specifications anymore.

10 What LoRa class should I choose, if goes for street light node application?

It depends on the user requirement. since the end device is streetlight, one time configuration will be enough and most of other time, node will be a transmitter. Choosing a class will not impact on packet transmission. Receive window depends on class (Class A: instant check; Class B: time based and Class C: support all time reception). But, Class C is too power hungry than Class A, hence the most suitable class is Class A.

11 Can we develop our own applications in Murata's LoRa module?

Yes, it is possible. It supports both modem FW and Application FW mode. User has 192KB flash for their application. Please confirm the peripheral requirement by visiting our website <https://www.murata.com>

12 Does your BLE module support Mesh?

Yes, we support. Mesh is basically a software feature developed on Bluetooth 5.0 version and above. Few stack vendors are supporting it as application and few are supporting this within SDK. Murata module like MBN52832 support mesh through SDK.