

Answer on Question #48186, Physics, Electric Circuits An electronic engineer needs a particular value of capacitance for his new design for the car courtesy light to dim at a particular rate when the car is locked remotely using a wireless key.

He needs a capacitance of exactly 12 micro Farads. Which of the four possibilities will give him that value?

1. Two capacitors in series, each of value 6 microFarads
2. Two capacitors in parallel, each of value 6 microFarads
3. Two capacitors in series, one of value 4 microFarads and the other of value 2 microFarads.
4. Two capacitors in parallel, each of value 24 microFarads.

Solution

When you connect two capacitors in parallel, their capacities just sum up. Hence, if you need 12 mF, you have to connect two capacitors in parallel, each of value 6 microFarads. Answer is 2.Two capacitors in parallel, each of value 6 microFarads.