

**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.