

Answer on Question 50153, 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 $12 \mu\text{F}$. Which of the four possibilities will give him that value? 1.Two capacitors in parallel, each of value $24 \mu\text{F}$ 2.Two capacitors in series, one of value $4 \mu\text{F}$ and the other of value $2 \mu\text{F}$. 3.Two capacitors in series, each of value $6 \mu\text{F}$ 4.Two capacitors in parallel, each of value $6 \mu\text{F}$

Solution

When capacitors are in parallel, their capacitances are added. Hence, possibility

4.Two capacitors in parallel, each of value $6 \mu\text{F}$
will give him $12 \mu\text{F}$