

## Illustration of a graphical method for sizing the series resistor for an LED

This data was taken from Shenzhen Fady Technology Co. data sheets for a 5mm LED. Other sizes are similar but not identical.

Basic Method:

- 1/ Get the LED VI curve from the manufacturer's data sheet and sketch it on graph paper. Super accuracy is not needed here except for reasonable accuracy at the current you intend to use.
- 2/ Mark the power supply voltage  $V$  on the voltage (horizontal) axis.
- 3/ Mark the point on the LED VI curve at the current you intend to use.
- 4/ Draw a line from the power supply voltage mark  $V$ , through the current mark on the VI curve to  $I$  on the current (vertical) axis.
- 5/ The series resistance needed is then  $R = V/I$  Watts =  $I_{max}^2 * R$

