$$t_{esc}V_{psr} = R_{snr} = \left(\frac{E_{sn}}{\rho_{ism}}\right)^{1/5} t_{esc}^{2/5}$$

$$\Rightarrow t_{esc} \approx \left(\frac{E_{sn}}{\rho_{ism}}\right)^{1/3}\left(\frac{1}{V_{psr}}\right)^{5/3} \approx 2 \times 10^5 \text{yr} \left(\frac{E_{sn}}{10^{51}\text{erg}}\right)^{1/3}\left(\frac{V_{psr}}{200\text{km s}^{-1}}\right)^{5/3}\left(\frac{n_{ism}}{1\text{cm}^{-3}}\right)^{-1/3}$$