$$p(\theta, w) \propto w^{(d+1)/2-1} \exp\left(-w\frac{\kappa(\theta-\mu)^2}{2}\right)\exp\left(-w\frac{\eta}{2}\right)$$

$$p(\theta) \propto \int_0^\infty w^{(d+1)/2-1} \exp\left(-w\frac{\kappa(\theta-\mu)^2}{2}\right)\exp\left(-w\frac{\eta}{2}\right)dw$$

$$\propto \int_0^\infty w^{(d+1)/2-1} \exp\left(-\left(\frac{\kappa(\theta-\mu)^2}{2}+\frac{\eta}{2}\right)w\right)dw$$

$$\propto \Gamma\left(\frac{d+1}{2}\right)\left(\frac{\kappa(\theta-\mu)^2}{2}+\frac{\eta}{2}\right)^{-\frac{d+1}{2}}$$

$$\propto \left(\frac{\eta}{2}\right)^{-\left(\frac{d+1}{2}\right)}\Gamma\left(\frac{d+1}{2}\right)\left(\frac{1}{d}\left(\frac{\theta-\mu}{\sqrt{\eta/\kappa d}}\right)^2+1\right)^{-\frac{d+1}{2}}$$

$$\therefore m = \mu,\ s = \sqrt{\eta/\kappa d}$$