$$
\begin{aligned}
m' &\coloneqq m^2 \\
m &\coloneqq (\mu, \sigma) \\
m' &= \left(\mu, \frac{\sigma}{\sqrt{2}}\right)
\end{aligned}
$$

$$
\begin{aligned}
M^k(t) &\coloneqq \int_t^{+\infty} x^k m' \,\mathrm{d}x \\
\hat{M}^k(t) &\coloneqq \int_t^{+\infty} x^k m' \,\mathrm{d}x, && \mu = 0
\end{aligned}
$$

$$
\begin{aligned}
M^0(t) &= \int_t^{+\infty} m' \,\mathrm{d}x = \int_t^{+\infty} \exp\left(-\frac{(x-\mu)^2}{\sigma^2}\right) \mathrm{d}x = \int_{t-\mu}^{+\infty} \exp\left(-\frac{x^2}{\sigma^2}\right) \mathrm{d}x \\
&= \frac{\sigma\sqrt{\pi}}{2} \operatorname{erfc}\left(\frac{t-\mu}{\sigma}\right)
\end{aligned}
$$

$$
\begin{aligned}
M^1(t) &= \int_t^{+\infty} x m' \,\mathrm{d}x = \int_t^{+\infty} x \exp\left(-\frac{(x-\mu)^2}{\sigma^2}\right) \mathrm{d}x = \int_{t-\mu}^{+\infty} (x+\mu) \exp\left(-\frac{x^2}{\sigma^2}\right) \mathrm{d}x \\
&= \mu \hat{M}^0(t-\mu) + \frac{\sigma^2}{2} \exp\left(-\frac{(t-\mu)^2}{\sigma^2}\right)
\end{aligned}
$$

$$
\begin{aligned}
M^2(t) &= \int_t^{+\infty} x^2 m' \,\mathrm{d}x = \int_t^{+\infty} x^2 \exp\left(-\frac{(x-\mu)^2}{\sigma^2}\right) \mathrm{d}x = \int_{t-\mu}^{+\infty} (x+\mu)^2 \exp\left(-\frac{x^2}{\sigma^2}\right) \mathrm{d}x \\
&= \mu^2 \hat{M}^0(t-\mu) + 2\mu \hat{M}^1(t-\mu) + \frac{\sigma^2}{4}\left(2\exp\left(-\frac{(t-\mu)^2}{\sigma^2}\right)(t-\mu) + \sigma\sqrt{\pi} \operatorname{erfc}\left(\frac{t-\mu}{\sigma}\right)\right)
\end{aligned}
$$

$$
\begin{aligned}
\alpha_> &= M^0(\varepsilon) \\
\mu_> &= \frac{1}{\alpha} M^1(\varepsilon) \\
\sigma_>^2 &= \frac{1}{\alpha} M^2(\varepsilon) - \mu_>^2
\end{aligned}
$$

$$
\begin{aligned}
\alpha_\leq &= M^0(-\varepsilon) - M^0(\varepsilon) \\
\mu_\leq &= \frac{1}{\alpha}\big(M^1(-\varepsilon) - M^1(\varepsilon)\big) \\
\sigma_\leq^2 &= \frac{1}{\alpha}\big(M^2(-\varepsilon) - M^2(\varepsilon)\big) - \mu_\leq^2
\end{aligned}
$$