

EE313 Lecture 10

Joshua Dong

October 6, 2014

Fourier

$$x(t) = e^{-at}u(t)$$

$$h(t) = u(t)$$

convolve $x(t) * h(t)$.

$$y(t) = \int_{\tau=-\infty}^{\tau=\infty} x(\tau)h(t-\tau)d\tau.$$

$$y(t) = 0 \forall t < 0$$

$$t > 0 \rightarrow \int_{\tau=-\infty}^{\tau=\infty} e^{-a\tau} \cdot 1 d\tau.$$

$$y(t) = \int_{\tau=-\infty}^{\tau=\infty} e^{-a\tau} \cdot 1 d\tau = \frac{-1}{a} e^{-at} \Big|_{-\infty}^{\infty} \quad \forall t > 0.$$

.