Figure 3-1 Schematic cross sectional view of the simple FET device
Figure 3-2. The transfer characteristic and the output characteristic of the amorphous TFT with SiH4/H2 ration is 1/10.
Figure 3-2. The transfer characteristic and the output characteristic of the amorphous TFT with SiH4/H2 ration is 1/49.
Figure 3-4   FTIR absorption spectra for SiON film

Figure 3-5   I-V measurement for the SiON film
Figure 3-6  C-V measurement for TiO$_2$ film

Figure 3-7  I-V measurement for TiO$_2$ film
Figure 3-8  C-V measurement for Al2O3 film

Figure 3-9  I-V measurement for Al2O3 film
Figure 3-10  Schematic cross sectional view of devices with conventional bottom gate structure

~ Device Structure ~

PECVD製程溫度~100℃

n⁺ a-Si contact 200Å
a-Si channel 1000Å
SiON dielectric 1500Å
SiCN hard coating 500Å
Figure 3-11 TFT device was fabricated on the different kinds of substrate.
Figure 3-12 depicts the output ($I_D$-$V_D$) characteristics and the transfer ($ID$-$VG$) characteristics of the TFT which was fabricated on the silicon substrate (W/L=300 $\mu$m/20 $\mu$m).
Figure 3-13  I-V characteristics of TFT devices with SiON gate dielectric on the SiCN coated plastic substrate.

(W/L=50 μm/50 μm)
Figure 3-14  I-V characteristics of TFT devices with SiON gate dielectric on the SiCN coated plastic substrate.

(W/L=50 μm/10 μm)
Figure 3-15  I-V characteristics of TFT devices with SiON gate dielectric on the SiCN/SiN coated plastic substrate.

(W/L=50 μm/50 μm)
Figure 3-16  I-V characteristics of TFT devices with SiON gate dielectric on the SiCN/SiN coated plastic substrate. (W/L=50 μm/10 μm)
Figure 3-17  I-V characteristics of TFT devices with SiON gate dielectric fabricated on the TiO2 (800A) hard coating on the plastic substrate

(W/L=50 μm/50 μm)
Figure 3-18  I-V characteristics of TFT devices with SiON gate dielectric fabricated on the TiO2 (800A) hard coating on the plastic substrate

(W/L=50 μm/10 μm)
Figure 3-19 picture of the TFT device with the TiO2 and thin SiON being the gate dielectric