Global warming is still one of the most serious challenges facing us today, and climate change is expected to be more rapid and severe in polar regions compared to other places on Earth. In this research, we calculated the Land Surface Temperature (LST) of the Antarctic from 2001 to 2010 based on EOS/MODIS data, and then we analysis the surface temperature trend of Antarctic continent in the last 9 years. Results shows that the temperature of Antarctica as a whole was in a state of balance over the past 9 years, mean surface temperature trend in Antarctic Peninsula and West Antarctica was positive for 2000-2010, and it was negative in East Antarctica. The highest temperature trends of 0.020°C/yr was found in Antarctic Peninsula and the lowest temperature trends of −0.015 °C/yr was found in South polar.