Abstract: The piezoelectric activity of charged cellular polypropylene films of originally 40 and 50 μm thickness can be significantly increased by thickness expansion due to an exposure to high pressure for time periods of the order of hours. After such a treatment, the $d_{33}$ coefficient, measured by quasistatic and interferometric methods, is found to be as high as 1200 pC/N at 0.001 Hz, decreasing to 350 pC/N just below resonance. At the resonance, which is located in the range of 150-400 kHz for differently treated samples, $d_{33}$ coefficients up to 1400 pC/N are found. The high $d_{33}$ coefficients result from a decrease of Young's modulus $Y$ and an increase of the chargeability of the material due to the expansion, while the decrease of $d_{33}$ with frequency up to resonance is related to a corresponding increase of $Y$. Static pressures up to 10 kPa have little influence on $d_{33}$, but higher pressures result in a reversible decrease.