In this study, the temperature dependence of p-type semiconductor diodes that are a part of in-vivo dosimetry system was assessed in Co-60 photon energy. The collimator and gantry angle on zero degree, SSD 100 cm, field size 20x20 cm² was selected. The IBA EDP-5, EDP-10 and EDP-20 diode types that included in this study have different thickness of build-up material so the depth of measurements at water equivalent phantom by FC65-p ion chamber was selected at 5, 10 and 20 mm. Along the process the room and phantom temperature was measured and recorded (19°C). The special water filled PMMA phantom was used for diode set-up on its surface and a thermometer for determine phantom temperature was employed. Each type of diodes irradiated separately for one minute and the signal to dose sensitivity and calibration was performed at room temperature (19°C) by OmniPro-InViDos software with DPD-12 electrometer. Examination was repeated from 33°C to 20°C temperatures. The temperature correction factors were found from slope of the linear drawings for each diode types. The obtained correction factor for EDP-5 and EDP-10 was 0.29 %°C/cGy and 0.30 %°C/cGy respectively, that higher than recommended factor (%0.25°C/cGy). While the more fluctuation for EDP-20 was realized.