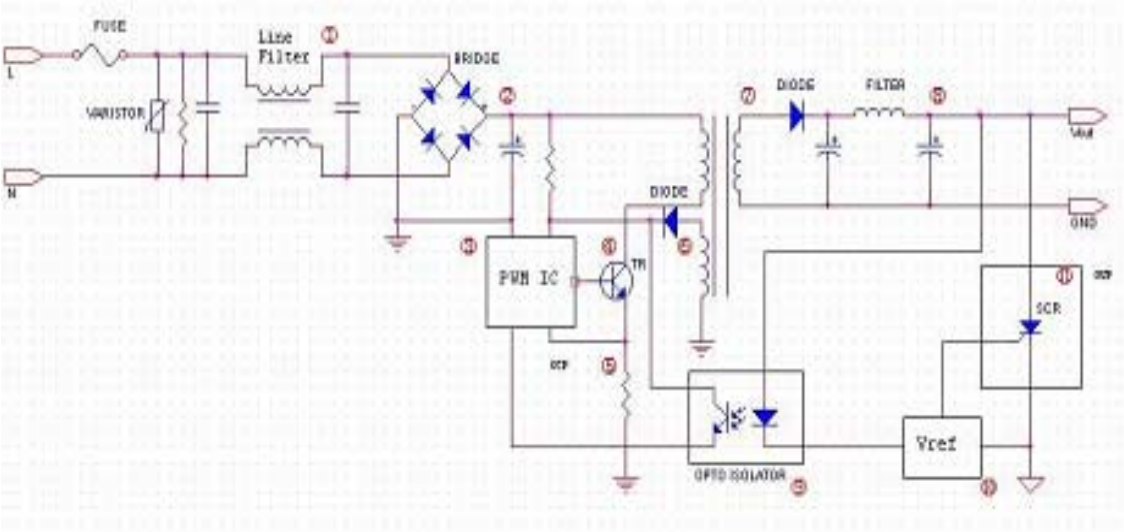
Power supply operation description

ZM460B-APS and ZM360B-APS are developed with the SMPS (SWITCHING MODE POWER SUPPLY) technology. This technology is a method for outputting voltage by dividing the high input voltage into regular periods with the use of TR by utilizing the input voltage with SWITCHING technology and coils. Such method improves efficiency (75%), but NOISE is emitted due to SWITCHING.



The diagram shown above is the brief circuitry of the AC-DC POWER that operates as described below:
At location ①, CAP and LINE FILTER are supplemented for the stabilization of AC input voltage, and in case of VARISTER, it is used for preventing the serge of input voltage
At location ②, AC input voltage is transformed into high DC voltage through the BRIDGE-DIODE. The DC power of this voltage is made smooth with the use of a condenser.
Location ③ is the necessary IC for controlling the PWM method, as the element for controlling the motion of AC-DC POWER SUPPLY. Voltage is supplied by going through the number 6's DIODE after the initial voltage is inputted through the resistor. The PWM signal is sent after going through the number 4 TR after the internal comparator compares the amplitude change regarding the output voltage that is entered into number 9.
Location ④ switches the high DC voltage after receiving the PWM signal. TR quantity is formed according to the high voltage quantity and current quantity. Smaller internal resistance allows less heat to be generated during SWITCHING. The current trend is using the POWER MOSFETs.
Location ⑤ is the device for stopping POWER's motion when more current enters the OCP than the fixed amount of current. It is supplemented with a protective circuit for preventing damage to the electronic device when sudden high current is flown into the OCP.
Location ⑥ supplies secondary power to the IC through trans.
Location ⑦ turns the alternating voltage into DC voltage by rectifying it in the DIODE after receiving n1's alternating voltage as an appropriate n2's alternating voltage. For n2's DIODES, great amount of heat is generated, and various elements are available such as SHOTTKY, FAST RECOVERY, and ULTRA FAST RECOVERY.
Location ⑧ is the FILTER for the rectified DC voltage's smoothing, ripple, and noise reduction.
Location ⑨ stabilizes the output DC voltage's rate of change by transferring the output DC voltage to the n1's IC through the OPTO COUPLER.

Location ⑩ transfers the output DC voltage to number 9 after detecting its changes. KA431 is usually used.
Location ⑪ is the high-voltage prevention circuit that acts as a protective circuit to prevent the POWER's motion if the output voltage is greater than the fixed voltage amount.