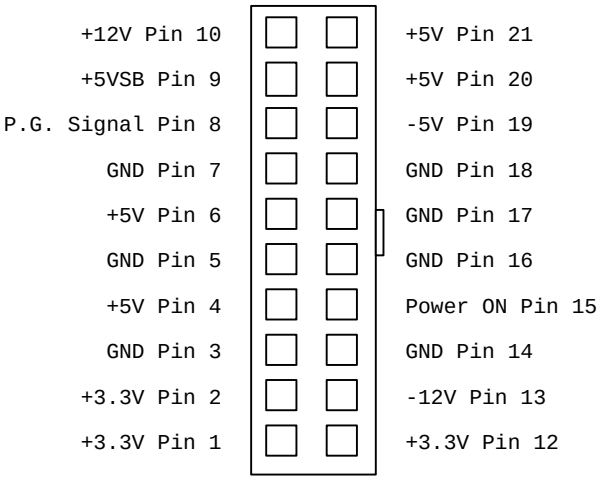
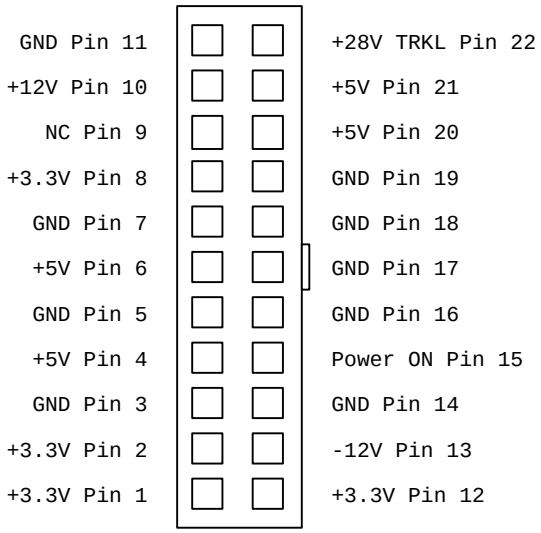
+28V Step-Up Voltage Regulator for ATX Power Supplies

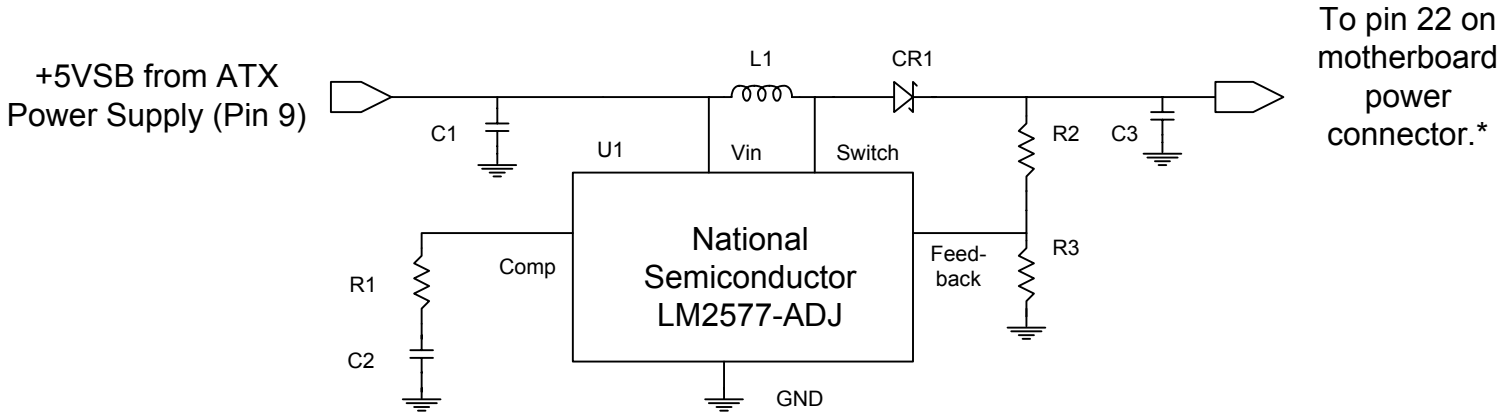
This circuit will step up the 5V stand-by supply of a standard ATX power supply to approximately 27.6V at 300mA. It is recommended to have a good ATX power supply that can supply at least 3A 5VSB. I built my circuit in an aluminum project box. Use a standard ATX extension cable to get the 20 pin ATX socket. Cut off the end that plugs into the board and route into the project box. You will need to get a 22pin plug to mate up with the motherboard connector. The P/N is listed below. Attach leads to the plug and make the necessary connections inside the project box. Note: The Apple connector does not use the Power Good signal, 5VSB, or -5V. See differences below.



ATX Power Supply Connector



Apple 22-Pin Power Supply Connector



Bill of Materials:		Digi-Key P/N
U1	- National Semi. LM2577-ADJ (DIP)	LM2577N-ADJ-ND
C1	- 0.1uF Ceramic Capacitor	Various
R1,R3	- 1.02k ohm, 1% tolerance metal film resistor	BC1.02KYCT-ND
C2	- 15uF Electrolytic Capacitor	Various
L1	- Schott inductor, 150uH	257-1102-ND
CR1	- 1N5819 Schotky Diode, 40V, 1.0 A	1N5819DICT-ND
R2	- 22.1k ohm, 1% tolerance metal film resistor	BC22.1KYCT-ND
C3	- Mallory 2,200 MF, 75 WVD P/N CGS222U075R2C	N/A

Molex Mini-Fit Jr., 22 Pin ATX power connector: Digi-Key P/N WM3710-ND