

Ex-1020: U.S. Patent No. 8,148,962 Claim Comparison Table

1[pre]: A voltage regulator circuit integrated in an integrated circuit (IC) and adapted to provide a voltage from a power supply to a load under varying load conditions, comprising:	14[pre]: A voltage regulator circuit integrated in an integrated circuit (IC) and adapted to provide a voltage from a power supply to a load integrated in the IC under selectively variable load conditions, comprising:	16[pre]: A method of regulating a supply voltage for selectively operable load circuitry of an integrated circuit, comprising:	17[pre]: A method of regulating a supply voltage for selectively operable load circuitry of an integrated circuit, comprising:
1[a]: an input adapted to receive a voltage from said power supply;	14[a]: an input adapted to receive a voltage from said power supply;	16[a]: receiving, from a power supply, a power supply voltage;	
1[b]: an output adapted to be coupled to said load;	14[b]: an output adapted to be coupled to said load;		
		16[b]: supplying, to a first current path integrated in said integrated circuit and referenced to said power supply voltage, a master current;	17[a]: generating, at a first current path integrated in said integrated circuit, a substantially constant master current;
		16[c]: receiving, at a feedback transistor integrated in said integrated circuit, said master current;	
1[c]: a feedback circuit coupled to a first current path and including a feedback transistor, wherein said feedback circuit is constructed to maintain a voltage at a gate of said feedback transistor substantially constant;	14[c]: a first current path referenced to said input; 14[d]: feedback means for maintaining a voltage at a gate of a feedback transistor substantially constant;	16[d]: maintaining, via a feedback circuit integrated in said integrated circuit and coupled to said feedback transistor, a voltage at a gate of said feedback transistor substantially constant;	
1[d]: a first current supply circuit	14[e]: first current supply means for	16[e]: supplying, to a second current path	17[b]: supplying, via a first current source

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constructed to supply to a second current path a first current that is substantially constant;	supplying to a second current path referenced to said input a first current that is substantially constant;	integrated in said integrated circuit and coupled to a pass transistor, a first current with a substantially constant magnitude;	integrated in said integrated circuit and coupled to a second current path, a first current;
1[e]: a second current supply circuit coupled to said first current supply circuit, said gate of said feedback transistor, and said output of said voltage regulator circuit and constructed to supply a second current to said second current path with a magnitude based on said voltage at said gate of said feedback transistor and a voltage at said output of said voltage regulator circuit;	14[f]: second current supply means coupled to said first current supply means, said gate of said feedback transistor, and said output of said voltage regulator circuit for receiving a first voltage reference and a second voltage reference and for supplying a second current to said second current path with a magnitude based on said first voltage reference and said second voltage reference;	16[f]: supplying, to said second current path, a second current that is a variable current with a magnitude based on said voltage at said gate of said feedback transistor and a voltage at said variable load;	17[c]: supplying, via a second current source integrated in said integrated circuit and coupled to said second current path, a second current with a magnitude based in part on a voltage at said variable load;
1[f]: a pass device including a gate coupled to said second current path and adapted to receive a signal based on said current of said second current path and supply a load current to said load via said output of said voltage regulator circuit with a magnitude based on said signal;	14[g]: means for supplying current to said load for receiving a signal based on a magnitude of said first current and a magnitude of said second current and for supplying a load current to said load via said output of said voltage regulator circuit with a magnitude based on a magnitude of said signal;	16[g]: receiving, at a gate of said pass transistor integrated in said integrated circuit, a control signal based on a magnitude of a current of the second current path; and 16[h]: supplying, to said load via said pass transistor, a load current based on the control signal such that when a voltage across said variable load increases, a magnitude of said	17[d]: receiving, from said second current path, a control signal at a pass transistor integrated in said integrated circuit, wherein said control signal has a magnitude based a current of said second current path; 17[e]: supplying, to said load circuitry via said pass transistor, a load current in response to said control signal; and

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1[g]: wherein said second current supply circuit is adapted to, via said pass device, cause an increase in magnitude of said load current supplied to said output if a voltage at said output decreases and cause a decrease in magnitude of said load current supplied to said output if a voltage at said output increases; and	14[h]: wherein said first current supply means, said second current supply means and said means for supplying current to said load are arranged such that, if a voltage at said load decreases, a magnitude of said load current is increased and, if a voltage said load increases, a magnitude of said load current is decreased; and	load current is reduced, and when a voltage across said variable load decreases, a magnitude of said load current is increased.	19: The method of claim 17, wherein supplying, to said load circuitry via said pass transistor, a load current includes increasing a magnitude of said load current if a voltage at said output decreases, and decreasing a magnitude of said load current if a voltage at said output increases.
			17[f]: wherein a magnitude of said first current and a magnitude of said second current are at least in part dependent on a magnitude of said master current.
1[h]: wherein said feedback circuit, said first current supply circuit, said second current supply circuit, and said pass device are integrated in an integrated circuit and referenced to said input of said voltage regulator circuit.	14[i]: wherein said feedback means, said first current supply means, said second current supply means, and said means for supplying current to said load are integrated in an integrated circuit.		
7: The voltage regulator circuit of claim 1, wherein said second current supply circuit further comprises at least one stability capacitor arrangement.			

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8: The voltage regulator circuit of claim 7, wherein said at least one stability capacitor arrangement has a capacitance of less than 30 pico-farads.			
9: The voltage regulator of claim 1, wherein said load current has a magnitude that is at least one order of magnitude greater than a magnitude of a current of said second current path.			
10: The voltage regulator of claim 1, wherein said load current has a magnitude of less than one amp, and wherein said current of said second current path has a magnitude of less than one milli-amp.			
11: The voltage regulator of claim 1, wherein said signal received at said pass device gate is a voltage.			
.			18: The method of claim 17, wherein supplying said second current includes supplying a current based on a difference between a voltage at a gate of a feedback transistor of a feedback circuit and a

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			voltage at said load circuitry.
			20: The method of claim 17, wherein supplying said load current includes supplying a current with a magnitude of less than one amp, and wherein supplying first current and supplying said second current includes supplying a current with a magnitude of less than one milli-amp.