三合微科股份有限公司
SAMHOP Microelectronics Corp.

Linear, Constant Current LED Driver — SM6801/6801A

GENERAL DESCRIPTION

The SM6801 and SM6801A are designed for driving LEDs at 20mA and 100mA, respectively. Using linear mode control regulator for LEDs constant current driver, they are able to operate at very wide supply voltage from 4.75V to 55V and withstand transients without the need for additional transient protection circuitry, thus very suitable for single or multiple series LEDs applications. The minimum dropout voltage of 1.0V accommodates extra LEDs, permits lower supply voltages, and provides more efficient operation. Besides, The SM6801A also built-in over temperature protection shuts off the LED current when the die temperature rises above 135℃(typical). Full LED current resumes when the die junction temperature falls below 85℃.

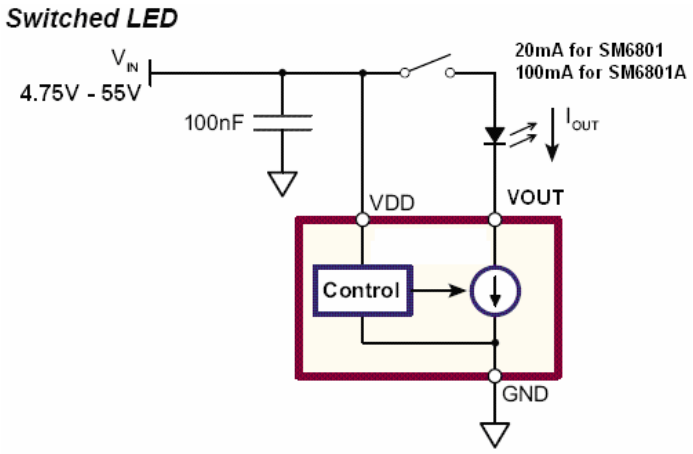
FEATURES

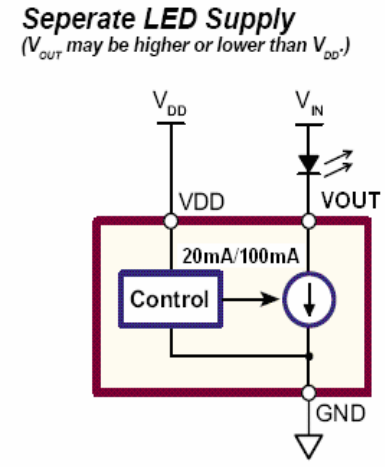
- 4.75V to 55V input voltage range
- 20mA ±10% constant current drive for SM6801
- 100mA ± 5% constant current drive for SM6801A
- Dimmable via PWM scheme
- 1.0 dropout
- 55V rating for transient immunity
- Temperature compensated
- Offer TO-252 (D-PAK) or TO-220 or SOT-223 packages

APPLICATIONS

- Flashlights
- Specialty lighting
- Low voltage signage

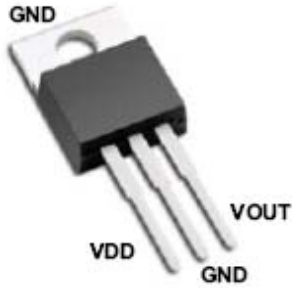
TYPICAL APPLICATION CIRCUIT



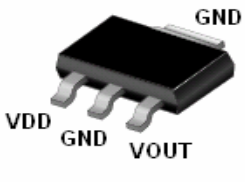


PIN CONFIGURATIONS

TO-252 (D-PAK)



TO-220



SOT-223

PIN DESIGNATION

Pin	Name	Description
VDD	VDD	Input supply voltage pin
VOUT	Output	Connect the LED between this Pin and the supply voltage
GND	Ground	Ground

ELECTRICAL CHARACTERISTICS (for SM6801)

(Production tested @ 25℃, over recommended operating conditions unless otherwise specified. All voltage with respect to GND pin)

Symbol	Parameter	Min	Typ	Max	Units	Conditions
IDD	Current into VDD pin	-	-	1.0	mA	-
IOUT	Current into OUT pin	18	20	22	mA	1.0V < VOUT < 55V
IOUT(OFF)	Current into OUT pin with VDD pin open	-	-	10	μA	VDD = open
VDD(OFF)	Voltage at VDD to shut off LED current	-	-	1.0	V	IOUT < 10uA
TON	VDD applied ON time	-	-	100	μs	-
TOFF	VDD applied OFF time	-	-	100	μs	-

ELECTRICAL CHARACTERISTICS (for SM6801A)

(Production tested @ 25℃, over recommended operating conditions unless otherwise specified. All voltage with respect to GND pin)

Symbol	Parameter	Min	Typ	Max	Units	Conditions
IDD	Current into VDD pin	3	5	10	mA	-
IOUT	Current into OUT pin	95	100	105	mA	1.0V < VOUT < 55V
IOUT(OFF)	Current into OUT pin with VDD pin open	-	-	10	μA	VDD = open
VDD(OFF)	Voltage at VDD to shut off LED current	-	-	1.0	V	IOUT < 10uA
TON	VDD applied ON time	-	-	100	μs	-
TOFF	VDD applied OFF time	-	-	100	μs	-