

High Efficiency, Fixed Frequency WLED Driver

FEATURES

- On Board Power MOSFET
- Drives up to 8 Series White LEDs
- Up to 87% Efficiency
- 1.2 MHz Fixed Switching Frequency
- Open Load Shutdown
- Low 104mV Feedback Voltage
- Soft Start/PWM Dimming
- UVLO, Thermal Shutdown
- Internal Current Limit
- Available in 6L-SOT26

APPLICATIONS

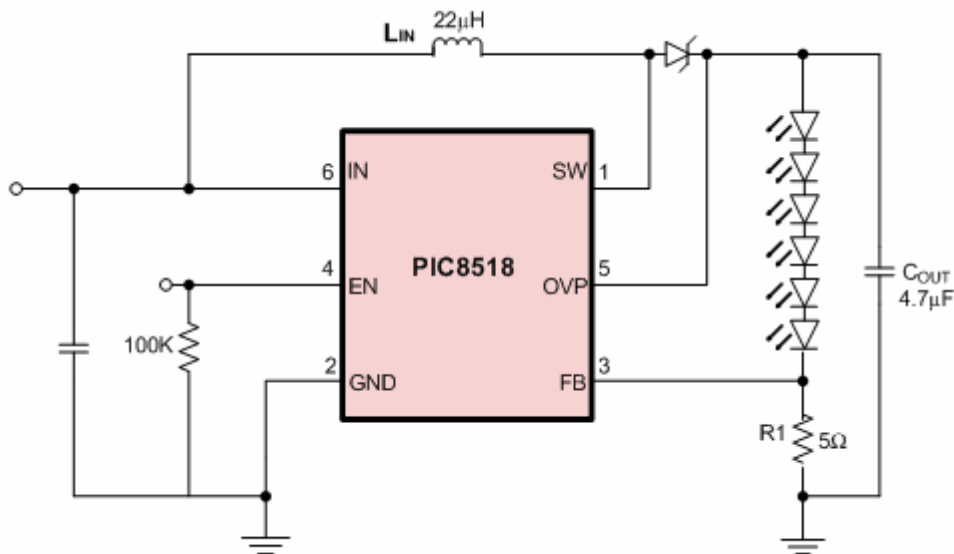
- Cellular and cordless phones
- Wireless LAN cards
- Palmtop computers
- Personal Communication equipment
- Pen drives
- Bluetooth devices

DESCRIPTION

The PIC8518 is a step up converter designed for driving up to 8 series white LEDs from 5V input. The PIC8518 uses current mode, fixed frequency architecture to regulate the LED current, which is measured through an external current sense resistor. Its low 104mV feedback voltage reduces power loss and improves efficiency. The OV pin monitors the output voltage and turns off the converter if an over-voltage condition is present due to an open circuit condition.

The PIC8518 includes under-voltage lockout, current limiting and thermal overload protection preventing damage in the event of an output overload. The PIC8518 is available in small 6-pin TSOT26.

TYPICAL APPLICATION CIRCUIT



ELECTRICAL CHARACTERISTICS

(All specifications are at $T_A = +25^\circ\text{C}$. $V_{IN} = 5.0\text{V}$, unless otherwise specified.)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V_{IN}	Operating Input Voltage		2.5		5.5	V
UVLO	Under Voltage Lock-out	V_{IN} going Low		2.2	2.4	V
	UVLO Hysteresis				80	mV
I_q	Supply Current(quiescent)	No Switching ($V_{IN}=5\text{V}, V_{FB}=150\text{mV}$)		235	260	μA
I_{SH}	Supply Current(shut-down)	$V_{EN} = 0$		0.4	1	μA
F_{OSC}	Operation Frequency		1.04	1.2	1.4	MHz
D_{MAX}	Maximum Duty Cycle		85	95		%
V_{FB}	Feedback Voltage		94	104	114	mV
	Feedback Input Bias Current	$V_{FB}=125\text{mV}$	600	1040		nA
$R_{DS(ON)}$	MOSFET ON resistance			0.53		Ω
I_{LIM}	Current Limit			850		mA
V_{OV}	Over Voltage Threshold	V_{OV} rising		30		V
V_{EN}	Enable Threshold	V_{EN} Rising	1	1.35	1.6	
		V_{EN} Rising, $V_{IN}=2.5\text{V}$	0.8			V
I_{EN}	Enable Input Bias Current	$V_{EN} = 5\text{V}$			6.5	μA
	EN Hysteresis			4		mV
	Thermal Shut-down			165		$^\circ\text{C}$