



UPSL304

Preliminary

CMOS IC

HIGH POWER FACTOR & ACCURACY CONSTANT CURRENT LED DRIVER

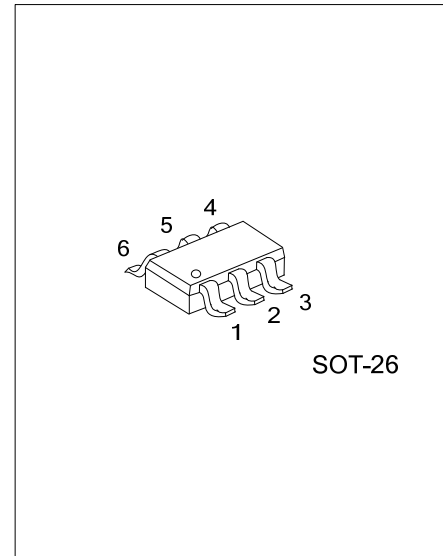
DESCRIPTION

The UTC **UPSL304** is a low startup current, Transition Mode, fixed on-time PFC control and PWM controller. These functions enable the LED driver to easily meet the accuracy average LED current and high power factor requirements.

The UTC **UPSL304** improves the performance and reduces the cost of the LED driver.

FEATURES

- * Transition Mode Fixed On-Time PFC Control
- * Accuracy Constant Current
- * Low BOM Cost
- * Inductor Size Reduction
- * Frequency Range Adjusted by The CT Pin
- * LED Protection: SCP, OLP, OVP
- * SOT-26 Package
- * Compatible Inductance Ballast
- * Incompatible Electronic Ballast

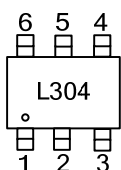


ORDERING INFORMATION

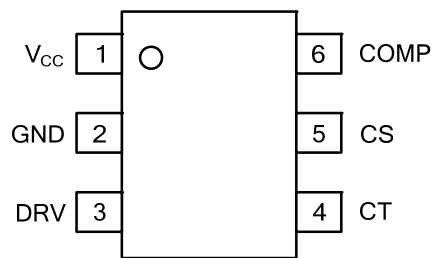
Ordering Number	Package	Packing
UPSL304G-AG6-R	SOT-26	Tape Reel

<p>UPSL304G-AG6-R</p> <p>(1)Packing Type (2)Package Type (3)Green Package</p>	<p>(1) R: Tape Reel (2) AG6: SOT-26 (3) G: Halogen Free and Lead Free</p>
---	---

MARKING



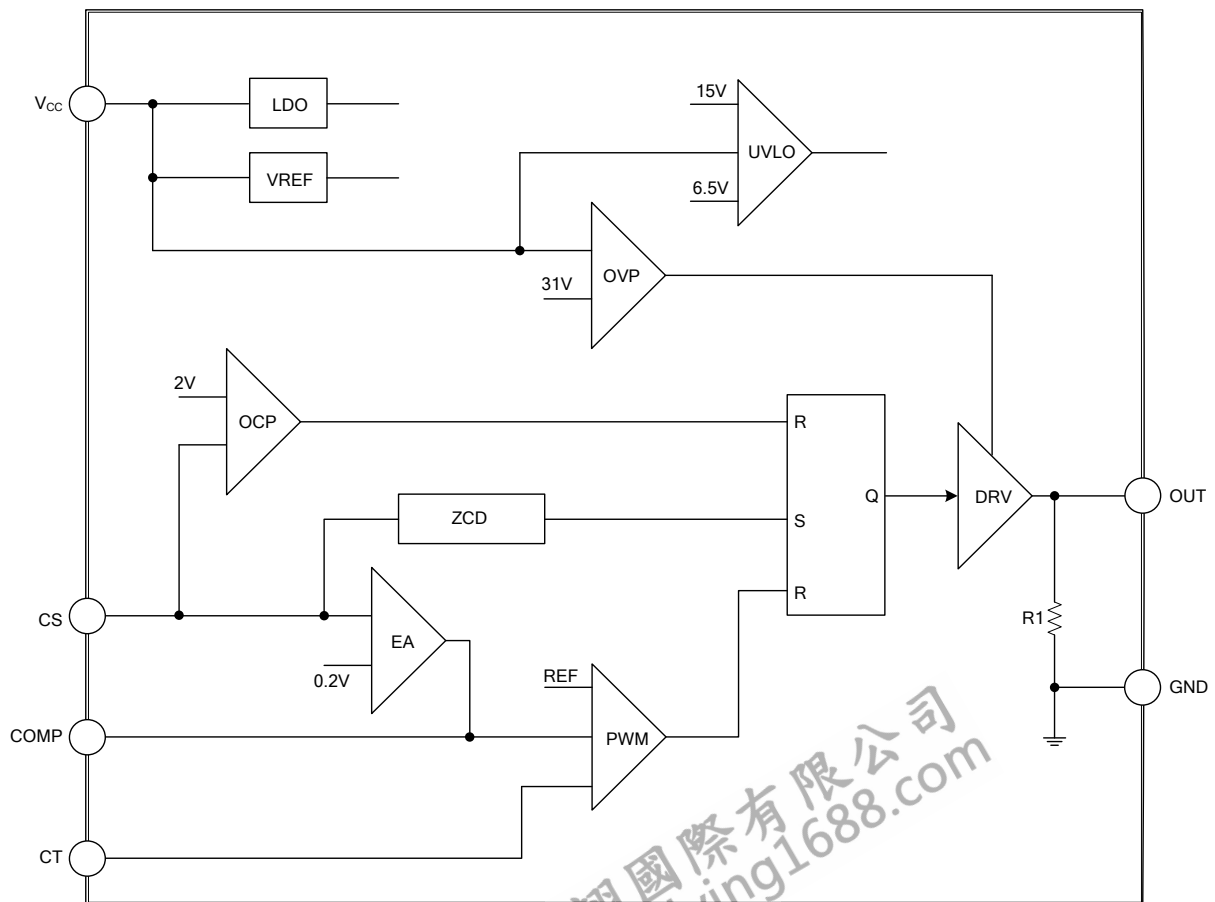
■ PIN CONFIGURATION



■ PIN DESCRIPTION

PIN NO.	PIN NAME	DESCRIPTION
1	V _{CC}	Power Supply Pin
2	GND	Ground Pin
3	DRV	The DRV pin is connected to the gate driver to drive the external power switch.
4	CT	The CT pin is connected to the current source to charge the external capacitor and compare the COMP voltage to terminate the power switch.
5	CS	Current Sense Pin
6	COMP	Feedback Compensation Network

■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATING

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V_{CC}	30	V
CT, COMP, CS		-0.3 ~ +7.0	V
DRV		15	V
Power Dissipation ($T_A=85^\circ\text{C}$)	P_D	250	mW
Junction Temperature	T_J	+150	$^\circ\text{C}$
Operating Ambient Temperature		-20 ~ +85	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-65 ~ +150	$^\circ\text{C}$

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ THERMAL DATA

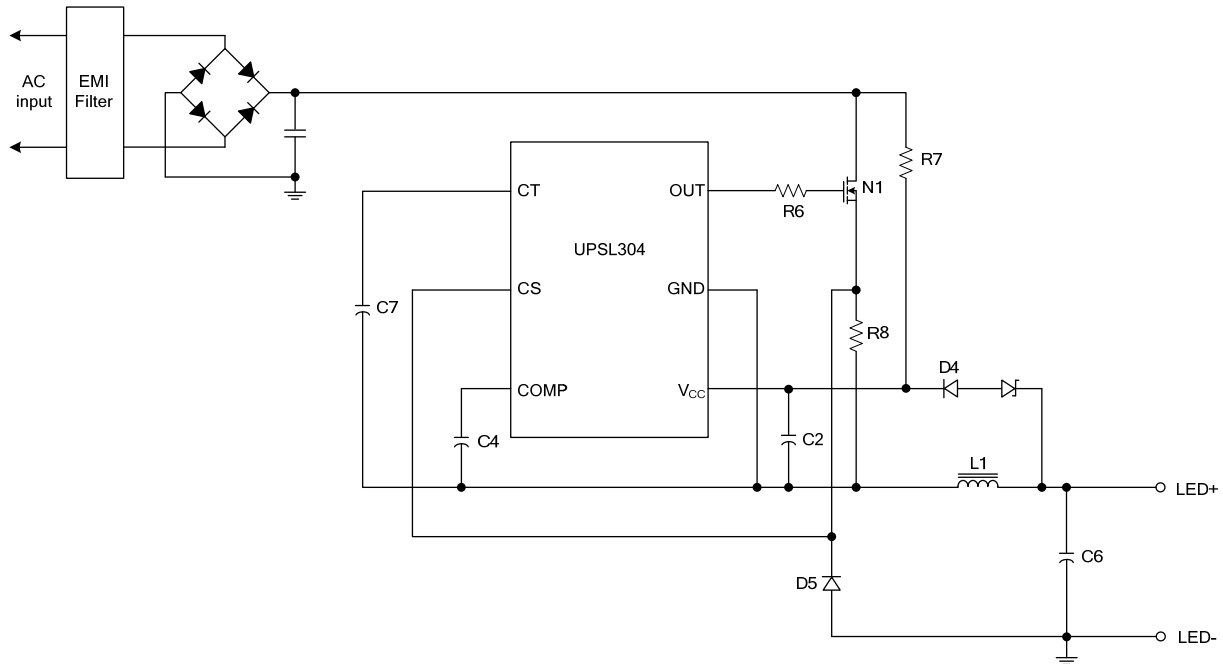
PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ_{JA}	500	$^\circ\text{C/W}$

■ ELECTRICAL CHARACTERISTICS

($V_{CC}=15.0\text{V}$ & $T_A=+25^\circ\text{C}$, unless otherwise specified.)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Startup Current	I_{ST}	$V_{CC}=\text{UVLO on-1V}$		10	50	μA
Operating Current	I_{CC}	with 1nF load on OUT pin, $V_{COMP}=2.5\text{V}$		2.5	3.2	mA
Operating Current	I_{QC}	with 1nF load on OUT pin, Protection Tripped (OVP, SCP)		1.6	2.5	mA
UVLO (off)	V_{MIN}		5.5	6.5	7.5	V
UVLO (on)	V_{ST}		14	15	16	V
OVP Level on VCC Pin	V_{OVP}		29.5	31.5	33.5	V
OVP De-Bounce Time				40		μS
Feedback Reference Voltage	V_{FB}		0.195	0.200	0.205	V
Tran-Conductance				300		μS
Output Sink Current	I_{SINK}			300		μA
Output Source Current	I_{SOURCE}			60		μA
Input Over Voltage Protection	V_{OCP}		1.8	2.0	2.2	V
Open Loop Voltage, CS Pin Open	V_{CS}			5		V
Leading-Edge Blanking Time	T_{LEB}			450		nS
Delay to Output	T_{DELAY}			130	220	nS
Rising Time	T_R	Load Capacitance=1000pF		280	500	nS
Falling Time	T_F	Load Capacitance=1000pF		80	150	nS
VGATE-Clamp	V_{CLAMP}	$V_{CC}=25\text{V}$		12.5	15	V
CT Pin Current			130	150	170	μA

■ TYPICAL APPLICATION CIRCUIT



UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice.