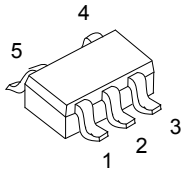
LINEAR LED DRIVER WITH EXTENDABLE INPUT VOLTAGE



SOT-25

■ DESCRIPTION

The UTC **ULL11** is an adjustable linear LED driver offering excellent output handling capability. This device simplifies the design of linear and isolated LED driver.

Compared to traditional linear LED drivers, UTC **ULL11** controls the regulation of LED current with minimal power dissipation with its low 250mV current sense FB pin. This makes it ideal for medium to high current LED driving. The dropout voltage that needed to drive a LED string is as low as 0.35V for UTC **ULL11**, and it also provides the capability to drive longer LED string, by clamping V_{DD} to S_{GND}, while the voltage across the LED string may exceed 16V.

The UTC **ULL11** is available in space saving SOT-25 package to handle more power.

■ FEATURES

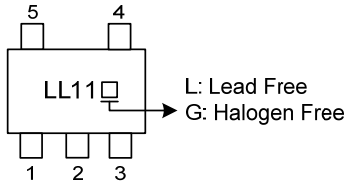
* 10V V_{DD} to LED voltage
* Drive current programmable by R_{ISET}
* 250mV sense voltage
* 170mA output current

■ ORDERING INFORMATION

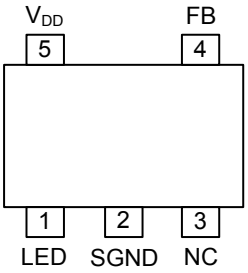
Ordering Number		Package	Packing
Lead Free	Halogen Free		
ULL11L-AF5-R	ULL11G-AF5-R	SOT-25	Tape Reel

ULL11G-AF5-R (1)Packing Type (2)Package Type (3)Green Package	(1) R: Tape Reel (2) AF5: SOT-25 (3) G: Halogen Free and Lead Free, L: Lead Free

■ MARKING



■ PIN CONFIGURATION



■ PIN DESCRIPTION

PIN NO.	PIN NAME	DESCRIPTION
1	LED	The pin to drive LEDs.
2	SGND	The “Ground” pin of this device. Need connect 10K Resistor to GND.
3	NC	Not connected.
4	FB	The feedback input. Connect an external resistor between FB and LED pin to set the LED current.
5	V_{DD}	Supply voltage pin.

■ ABSOLUTE MAXIMUM RATING

PARAMETER	SYMBOL	RATINGS	UNIT
V_{DD} to SGND Voltage		16	V
All Other Pins		V_{DD}	V
LED Output Current		170	mA
Operating Temperature	T_{OPR}	-40 ~ +85	°C
Storage Temperature Range	T_{STG}	-55 ~ +150	°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 (NOTE 2)

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ_{JA}	165	°C/W
Junction to Case	θ_{JC}	75	°C/W

■ ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Supply Power	V_{DD}		2.6			V
Dropout Voltage Between V_{DD} and V_{LED}	V_{drop}		0.35		10	V
Reference Voltage	V_{ref}	V_{DD}=9V, V_{SGND}=V_{LED}=0V	242	250	258	mV
LED Current	I_{LED}	V_{DD}=12V			150	mA
Bias Current	I_{SGND}	V_{DD}=12V		20		μA

■ TYPICAL APPLICATION CIRCUIT