



ULD5121

Preliminary

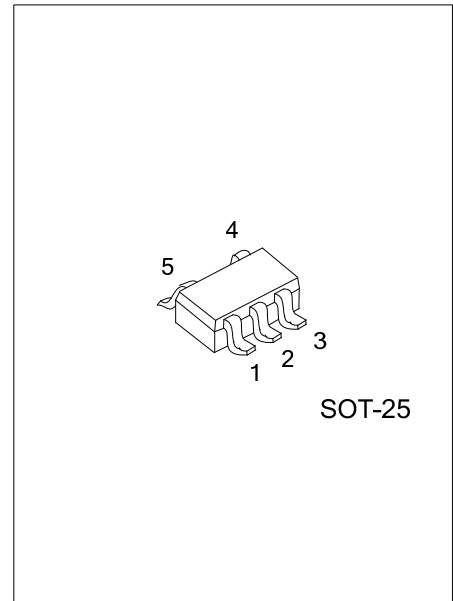
CMOS IC

ADAPTIVE 100/120Hz CURRENT RIPPLE REMOVING CIRCUIT CONTROLLER

DESCRIPTION

UTC **ULD5121** is a controller, which drives external NMOSFET to remove the 100/120Hz LED current ripple on AC/DC power by a capacitor between VC and GND. The chip ensures minimum power dissipation on NMOSFET while removing LED current ripple relying on the adaptive technology.

UTC **ULD5121** allows user to setup the maximum cathode voltage of LED string by sensing the drain voltage of NMOSFET which could help limit the power dissipation on chip.



FEATURES

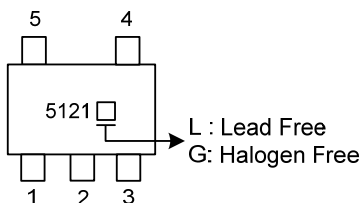
- * Controller for adaptive 100/120Hz current ripple remover
- * Amplitude of LED current ripple programming
- * Maximum cathode voltage of LED programming
- * Maximum LED current programming

ORDERING INFORMATION

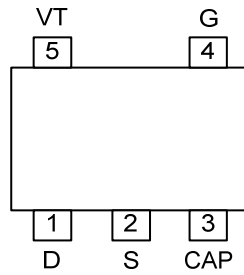
Ordering Number		Package	Packing
Lead Free	Halogen Free		
ULD5121L-AF5-R	ULD5121G-AF5-R	SOT-25	Tape Reel

<p>ULD5121G-AF5-R</p> <p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Green Package</p>	<p>(1) R: Tape Reel</p> <p>(2) AF5: SOT-25</p> <p>(3) G: Halogen Free and Lead Free, L: Lead Free</p>
--	---

MARKING



■ PIN CONFIGURATION



■ PIN DESCRIPTION

PIN NO.	PIN NAME	DESCRIPTION
1	D	Connecting NMOSFET Drain Pin
2	S	Connecting NMOSFET Source Pin
3	CAP	Programming LED Current Ripple Pin
4	G	Driving NMOSFET GATE Output Pin
5	VT	Programming LED Voltage Limit Pin

■ ABSOLUTE MAXIMUM RATING

PARAMETER	SYMBOL	RATINGS	UNIT
Voltage (D Pin to S Pin)		<20	V
Voltage (CAP Pin to S Pin)		<15	V
Voltage (G Pin to S Pin)		6 ~ 8	V
Voltage (VT Pin to S Pin)		<20	V
Junction Temperature	T _J	+150	°C
Lead Temperature	T _L	+260	°C
Storage Temperature	T _{STG}	-65 ~ +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.

■ RECOMMENDED OPERATING CONDITIONS

PARAMETER	SYMBOL	RATINGS	UNIT
Maximum Junction Temperature	T _J	+150	°C

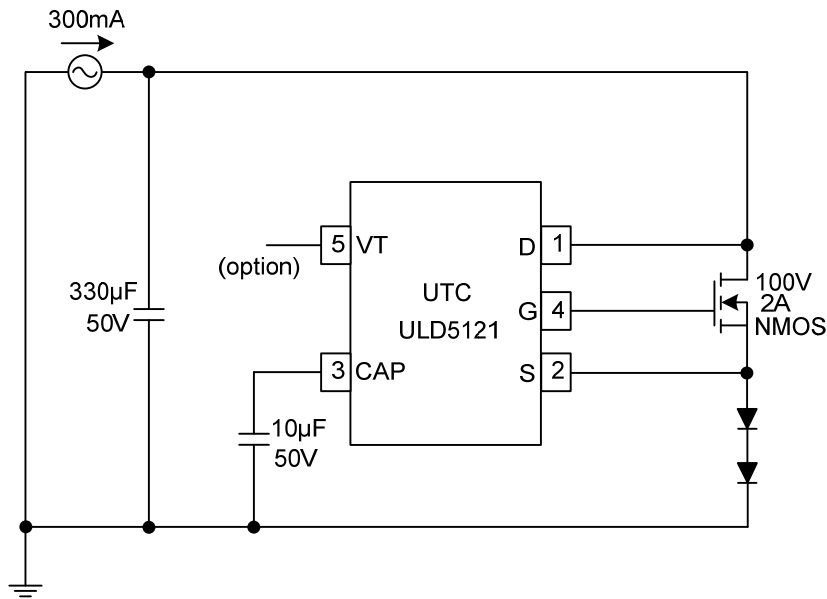
■ THERMAL RESISTANCE

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ _{JA}	50	°C/W
Junction to Case	θ _{JC}	10	°C/W

■ ELECTRICAL CHARACTERISTICS T_A=25°C, unless otherwise stated.

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Resistance Between D Pin and VC Pin	R _{D,VC}		40	47	52	KΩ
Resistance Between G Pin and VC Pin	R _{G,VC}		4.6	5.1	5.6	KΩ
Voltage (D Pin to VT Pin)	V _{D,VT}		0.5	0.7	0.9	V
Voltage (VT Pin to VC Pin)	V _{VT,VC}		5	6.5	8	V
Voltage (G Pin to S Pin)	V _{G,S}		5	6.5	8	V

■ 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. UTC reserves the right to make changes to information published in this document, including without limitation specifications and product descriptions, at any time and without notice. This document supersedes and replaces all information supplied prior to the publication hereof.