



ULD5121

Preliminary

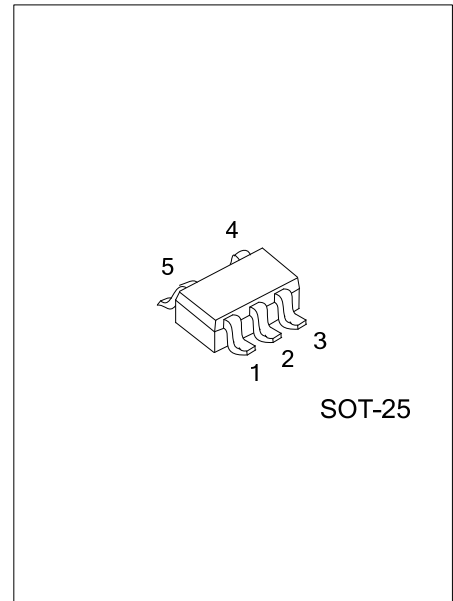
CMOS IC

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

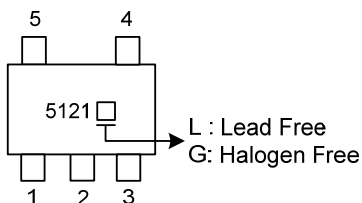
- * Controller for adaptive 100/120Hz current ripple remover
- * Amplitude of LED current ripple programming
- * Maximum cathode voltage of LED programming
- * Maximum LED current programming

ORDERING INFORMATION

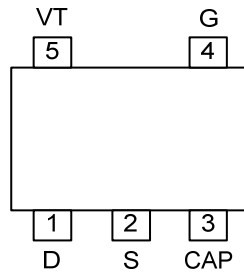
Ordering Number		Package	Packing
Lead Free	Halogen Free		
ULD5121L-AF5-R	ULD5121G-AF5-R	SOT-25	Tape Reel

<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>
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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

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■ 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

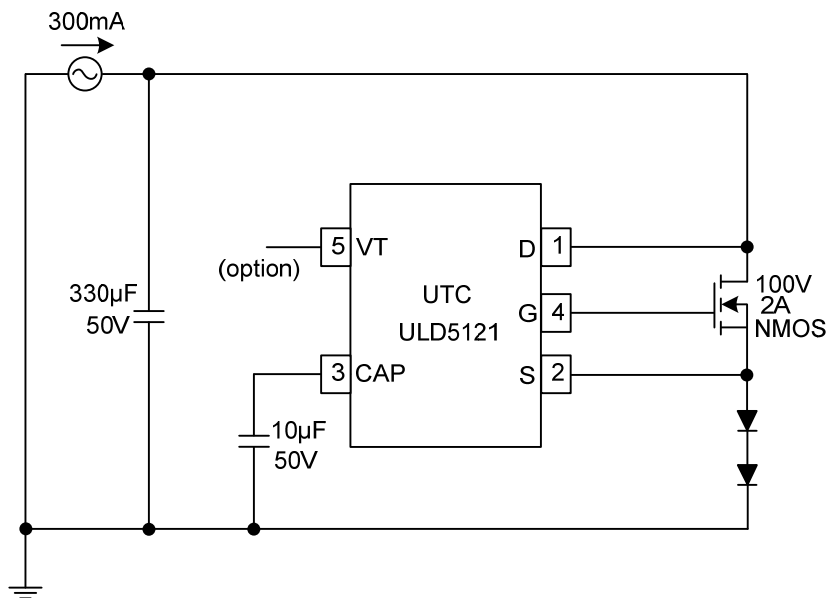
■ THERMAL RESISTANCE

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



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