



ULD5133

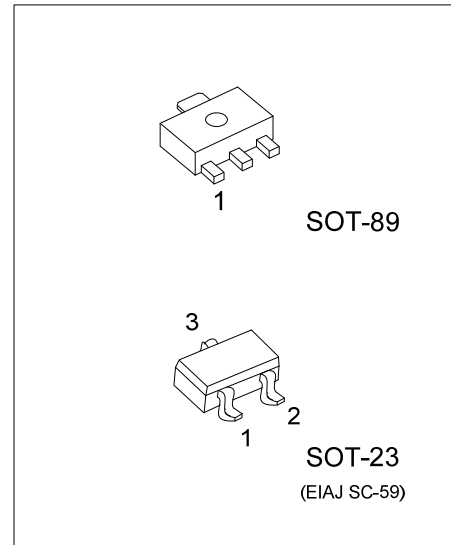
CMOS IC

ADAPTIVE 100/120Hz CURRENT RIPPLE REMOVING CIRCUIT CONTROLLER

■ DESCRIPTION

UTC **ULD5133** 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 **ULD5133** 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

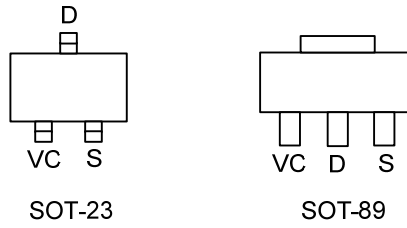
Ordering Number		Package	Packing
Lead Free	Halogen Free		
ULD5133L-AE3-R	ULD5133G-AE3-R	SOT-23	Tape Reel
ULD5133L-AB3-R	ULD5133G-AB3-R	SOT-89	Tape Reel

<p>ULD5133G-AE3-R</p>	<p>(1) R: Tape Reel</p> <p>(2) AE3: SOT-23, AB3: SOT-89</p> <p>(3) G : Halogen Free and Lead Free, L: Lead Free</p>
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■ MARKING

SOT-23	SOT-89
	<p>→ Date Code</p> <p>→ L: Lead Free G: Halogen Free</p>

■ PIN CONFIGURATION



■ PIN DESCRIPTION

PIN NO.		PIN NAME	DESCRIPTION
SOT-23	SOT-89		
1	1	VC	Programming LED Current Ripple Pin
2	3	S	Connecting NMOSFET Source Pin
3	2	D	Connecting NMOSFET Drain Pin

■ ABSOLUTE MAXIMUM RATING

PARAMETER	SYMBOL	RATINGS	UNIT
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

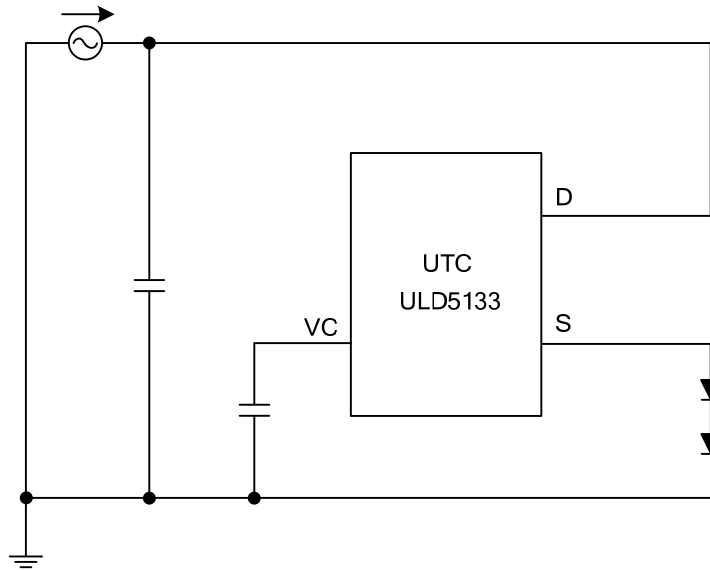
■ THERMAL RESISTANCE

PARAMETER	SYMBOL	RATINGS	UNIT	
Junction to Ambient	θ_{JA}	SOT-23	325	°C/W
		SOT-89	180	°C/W
Junction to Case	θ_{JC}	SOT-23	110	°C/W
		SOT-89	38	°C/W

■ ELECTRICAL CHARACTERISTICS $T_A=25^\circ\text{C}$, unless otherwise stated.

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Resistance Between D Pin and VC Pin	R_{D_VC}		40	47	52	K Ω
Voltage (D Pin to S Pin)	V_{D_S}				30	V
Voltage (VC Pin to S Pin)	V_{VC_S}				8	V

■ TYPICAL APPLICATION CIRCUIT



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